

Young Lives School Survey in Peru:

Design and Initial Findings

Gabriela Guerrero, Juan Leon, Elizabeth Rosales, Mayli Zapata,
Silvana Freire, Víctor Saldarriaga and Santiago Cueto



Young Lives School Survey in Peru:

Design and Initial Findings

Gabriela Guerrero, Juan Leon, Elizabeth Rosales, Mayli Zapata,
Silvana Freire, Víctor Saldarriaga and Santiago Cueto

Young Lives School Survey in Peru: Design and Initial Findings

Gabriela Guerrero, Juan Leon, Elizabeth Rosales,
Mayli Zapata, Silvana Freire, Víctor Saldarriaga and
Santiago Cueto

First published by Young Lives in December 2012

© Young Lives 2012

ISBN: 978-1-909403-04-8

A catalogue record for this publication is available from the British Library. All rights reserved. Reproduction, copy, transmission, or translation of any part of this publication may be made only under the following conditions:

- with the prior permission of the publisher; or
- with a licence from the Copyright Licensing Agency Ltd.,
90 Tottenham Court Road, London W1P 9HE, UK, or from another national
licensing agency; or
- under the terms set out below.

This publication is copyright, but may be reproduced by any method without fee for teaching or non-profit purposes, but not for resale. Formal permission is required for all such uses, but normally will be granted immediately. For copying in any other circumstances, or for re-use in other publications, or for translation or adaptation, prior written permission must be obtained from the publisher and a fee may be payable.

Printed on FSC-certified paper from traceable and sustainable sources.

Funded by



Ministry of Foreign Affairs of the
Netherlands

Young Lives, Oxford Department of International Development (ODID), University of Oxford,
Queen Elizabeth House, 3 Mansfield Road, Oxford OX1 3TB, UK

Tel: +44 (0)1865 281751 • E-mail: younglives@younglives.org.uk

Contents

Abstract	ii
Acknowledgements	ii
The authors	ii
1. Introduction	1
2. Education in Peru	2
2.1 General characteristics of education in Peru	2
2.2 Education of indigenous students in Peru	4
3. Survey design and objectives	5
4. School Survey: methods and overview	7
4.1 Methods	7
4.1.1 Sample design	7
4.1.2. Variable definitions	11
4.1.3. Instruments	16
4.1.4. Procedures	20
4.2 Preliminary results	21
4.2.1. Sample characteristics	22
4.2.2 School quality, school responsiveness and student outcomes	23
5. Qualitative sub-study on indigenous children and bilingual education	36
5.1. Methods	36
5.1.1. Sample design	36
5.1.2. Variable definitions	40
5.1.3. Instruments	41
5.1.4. Procedures	42
5.2. Preliminary results	44
5.2.1. Student adaptation	45
5.2.2. School responsiveness	49
5.2.3. EIB implementation	51
5.2.4. Educational expectations	54
6. Conclusions and perspectives for future research and the next round of the School Survey	57
7. References	59
8. Annexes	62
Annex A. Additional information on the Peruvian educational system	62
Annex B. Sampling strategy: preliminaries	63
Annex C. Tests for internal consistency	64

Abstract

This paper presents the methodology and initial findings of the Young Lives School Survey in Peru, aimed at studying inequality in educational opportunities and outcomes of students from the Younger Cohort (born between 2001 and 2002). Data were collected in 132 schools in nine regions of Peru, representing four types of school: private urban, public urban, public rural (Spanish), and public rural (bilingual) schools. Information was gathered on school quality (inputs available at school such as its infrastructure, and educational processes within classrooms such as the social and pedagogical interactions that constitute the classroom climate), responsiveness of school to students' needs and potential (e.g. instruction in their mother tongue, support for students at risk of dropping out), as well as achievement and socio-emotional outcomes.

A wide range of instruments was used to collect the data, including questionnaires which were completed by students, teachers, and head teachers; sociolinguistic questionnaires for those living in bilingual areas; achievement tests in maths and reading comprehension; direct observation of teacher attendance; and an assessment of mathematics teachers' pedagogical content knowledge. In addition to the quantitative survey component, the School Survey in Peru also included a qualitative sub-study focused on how indigenous students experience schooling in different educational contexts. In this case, data were collected from a sub-sample of students, teachers, and caregivers through interviews, focus groups, and school observations.

Overall, preliminary results show that there are important differences in the background of students attending different types of school, which suggests that the Peruvian educational system may be reinforcing social inequalities. The qualitative sub-study showed similar results, with indigenous children's schooling experience not aligned with their linguistic and cultural background. Information provided in this paper is expected to be useful for researchers interested in working with the School Survey datasets.

Acknowledgements

The authors would like to thank the following for their advice: Caine Rolleston (study design), Javier Escobal (sample design), Sofia Madrid (field-work preparation), Monica Lizama (data entry), and all the fieldworkers and coders who enabled us to collect and process the data. Finally, we also thank the head teachers, class teachers and students who allowed us to share their experience of their school lives.

The authors

Gabriela Guerrero is Associate Researcher at Group for the Analysis of Development (GRADE) and Co-Director of the Young Lives school survey in Peru. **Juan Leon** is Associate Researcher at GRADE. **Elizabeth Rosales**, former Assistant Researcher at GRADE, led the qualitative sub-study within the school study. **Mayli Zapata** is Assistant Researcher at GRADE. **Silvana Freire** is Research Assistant at GRADE. **Víctor Saldarriaga** was Assistant Researcher at GRADE until 2012. **Santiago Cueto** is Senior Researcher at GRADE and Country Co-ordinator of Young Lives in Peru.

About Young Lives

Young Lives is an international study of childhood poverty, following the lives of 12,000 children in 4 countries (Ethiopia, India, Peru and Vietnam) over 15 years. www.younglives.org.uk

Young Lives is funded from 2001 to 2017 by UK aid from the Department for International Development (DFID), and co-funded by the Netherlands Ministry of Foreign Affairs from 2010 to 2014.

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

1. Introduction

In 2010, Young Lives introduced a school-based research component into the study design. The information collected in schools as part of this component will complement the regular household and child surveys, allowing researchers to link household and child characteristics directly with children's experiences and achievements inside the school. In Peru, the School Survey will cover only the Younger Cohort of children (born between 2001 and 2002).

In the case of Peru, the main purpose of the School Survey was to study inequality in opportunities and outcomes among Peruvian students. This selection was made based on a series of studies that show that in Peru individual and family background are correlated with educational opportunities, and these in turn are correlated with educational outcomes. By educational opportunities we mean not only what in a general sense could be called school quality (e.g. the physical infrastructure, institutional management, pedagogical support, and quality of pedagogical interactions at school), but also the responsiveness of the school to the academic and personal characteristics of students (such as the provision of school safety nets for those students in need, and/or ensuring the correspondence between maternal language and language of instruction).

More specifically, the School Survey seeks to describe the following: (1) the experience of Young Lives children's learning at school; (2) the degree to which school quality varies for the different educational contexts/types of school attended by Young Lives children; and (3) the extent to which the children's experience of schooling influences their outcomes. Answering these questions will help us to gain some insight into how the different schools function and how programmes are implemented, so that we may then elaborate on suggestions for improving them.

Data collection was planned in two rounds, the first towards the end of the 2011 school year (between October and November), when students were nearing the end of their primary education. The second is tentatively scheduled for 2013, when most students will be in the first years of secondary schools. This report contains information on the first round of the school survey. It includes information from a random sample of Young Lives children, across 132 primary schools in nine regions of Peru. The sample of schools included both urban and rural institutions, as well as public and private schools. In rural areas, some of the schools were monolingual in Spanish, and the others were bilingual intercultural (EIB) schools, which should use both Spanish and an indigenous language as medium of instruction. The sampling strategy is explained later in this document.

The design of the School Survey in Peru includes not only the main quantitative component described above, but also a qualitative sub-study. The latter is exclusively focused on a sub-sample of indigenous students and seeks to know how they experience schooling in different educational contexts. The qualitative sub-component analyses the degree to which education for indigenous students is appropriate or responsive to their needs in different educational contexts and at bilingual (EIB) schools, trying to understand how schools accommodate indigenous students' needs and potential.

Regarding the main quantitative component, a wide range of instruments was used to collect the data at schools, including questionnaires addressed to all the relevant actors (students, teachers, head teachers); sociolinguistic questionnaires for those living in bilingual areas; achievement tests in maths and reading comprehension; direct observation of teacher

attendance; an assessment of mathematics teachers' pedagogical content knowledge; and the collection of mathematics notebooks and copybooks from a sub-sample of fourth grade children in order to conduct an analysis of students' opportunities to learn in that subject area.

In relation to the qualitative sub-component, data were collected by means of (1) interviews with indigenous students and their main caregivers to explore the students' schooling experience; (2) focus groups with their teachers to understand how they respond to the indigenous students' needs; and (3) class observations in order to explore indigenous students' interactions and teachers' practices. A description of all the instruments used, both quantitative and qualitative, is provided later in this document, and the instruments are available on the Young Lives website.

This working paper is mainly descriptive, providing information on the design and data-collection procedures, and defining the main variables used in the survey, as well as the instruments used to collect the data. This report provides valuable information on the School Survey design and procedures for all the researchers interested in working with the databases (available from the project's website). It should be noted, however, that this is not a research report, and deeper analysis of the data is beyond the scope of this document. Nevertheless, we present at the end of the report some preliminary descriptive results for the groups that were the focus of analysis (urban private schools, urban public schools, rural public schools – Spanish and rural public EIB schools), according to the research questions mentioned before. This is only meant to give potential users of the database an idea of the type of information available, and to provide suggestions for further analyses.

The report is organised as follows. Section 2 provides readers with an overview of education in Peru, describing the main characteristics of the educational system and also including information on the education of indigenous students, given our interest in addressing inequality issues. Section 3 lays out the design and objectives of the Young Lives School Survey in Peru. Section 4 refers to the methodology and preliminary results of the main quantitative component. Section 5 provides the same information for the qualitative sub-component of the School Survey. Finally section 6 provides some conclusions and perspectives for future research and the next round of data collection in schools.

2. Education in Peru

2.1 General characteristics of education in Peru

According to the General Education Law (*Ley General de Educación 28044*), approved in 2003, basic education is compulsory in Peru and free when provided by the State as a public service. In the Peruvian educational system, basic education encompasses three levels: pre-primary, primary, and secondary education. Pre-primary (called initial) education is targeted at children between 0 and 5 years old. This level is divided into two cycles. In the first cycle, children between 0 and 2 may participate in a variety of Early Childhood Development (ECD) programmes, usually accompanied by their parents (although some are cared for in day-care centres). The second cycle of pre-primary education is aimed at children aged 3 to 5 and is delivered in a centre-based manner, with children attending either a *Jardín* (a formal programme, where a teacher is in charge) or a PRONOEI (non-formal programme where a trained community member is in charge). After finishing pre-school, children enter primary education, which lasts six grades. This level is divided into three cycles, as shown in Table 1.

Finally, students enter secondary education, which lasts for five years and is divided into two cycles.

Table 1. *Levels and cycles in Peruvian basic education*

Levels	Pre-primary		Primary						Secondary				
Cycles	I	II	III		IV		V		VI		VII		
Grades	Age 0–2	Age 3–5	1	2	3	4	5	6	1	2	3	4	5

Source: National Curriculum Framework (2009)

The Basic Education programme is delivered in three modalities. The first is the regular programme described above for children and adolescents who attend school at the appropriate ages. Additionally, there is an alternative programme, called Basic Alternative Education (EBA), with the same objectives as the regular programme, but targeted at adolescents and adults who did not have access to the regular programme or could not finish it; and a special education programme designed for students with particular educational needs. This report and survey relate only to basic education for young children.

In primary, there are different types of school, depending on the number of teachers available. Full-grade schools have at least one teacher for each classroom in each grade. Multi-grade schools group children from different grades together in one single classroom. For example, a multi-grade classroom can be made up of third and fourth grade students who share the same teacher for all teaching lessons. Finally, there are one-classroom schools where there is only one teacher for all grades. The last two types of school are usually located in rural, isolated areas.

In terms of service provision, basic education in Peru is mainly provided by the public sector. In primary education, 79.6 per cent of the student population is enrolled in a public school, while the remaining 20.4 per cent attends private schools. In the case of secondary education the situation is similar, with 78.5 per cent of students enrolled in public education, and the remaining 21.5 per cent attending private schools.¹

Finally, in terms of its performance, in the past few decades enrolment in education in Peru has increased. Nevertheless, both national and international achievement evaluations have shown a low level of achievement in Peruvian students and have found a relationship between students' educational outcomes and their individual and family characteristics (Cueto 2007; Miranda 2008).²

Inequalities in education are not only related to the ethnic background of students. In March 2012 the Ministry of Education released the results of the 2011 census evaluation of student achievement in mathematics and reading comprehension among Spanish-speaking (i.e. non-EIB) Grade 2 students nation-wide (Ministry of Education 2012). The results showed that students' achievement in both subject areas had not improved in comparison with the previous year. In reading comprehension, slightly less than 30 per cent of the students show a level of achievement expected for their grade, while in mathematics the percentage of students performing in accordance with their grade level was 13.2 per cent. The Ministry's

1 Authors' own estimations, based on statistics from the Ministry of Education (<http://escale.minedu.gob.pe>).

2 Further information on coverage rates for basic education and achievement indicators for the Peruvian educational system can be found in Annex A.

report also presented evidence of large gaps in favour of urban rather than rural schools, and private rather than public schools.

As the Young Lives Country Report for Round 3 concludes:

Averages and percentages hide wide disparities, both in terms of opportunities and of outcomes. Specifically, life is much more difficult in Peru for a child who is poor, lives in a rural area, has a mother with little education or belongs to an indigenous group; gender difference is also relevant in some circumstances. (Cueto, et al. 2011: 12)

But these are not just gaps between individuals, but between groups of students with similar characteristics grouped in specific types of schools, setting up an unfair system.

2.2 Education of indigenous students in Peru

Indigenous people are commonly identified by their declared mother tongue. In the case of Peru, the most recent national census (in 2007) showed that there are 1,046,639 indigenous children between 3 and 17 years old, representing 12.4 per cent of the Peruvian population in that age range and 25.9 per cent of all the indigenous population (United Nations of Children's Fund [UNICEF] 2010). According to the same source, these groups live mainly in rural areas (56.3 per cent); nevertheless there is a significant group living in urban areas (43.7 per cent), principally as a consequence of migration.

An important difference stands out when comparing this group with their non-indigenous counterparts: 78 per cent of indigenous children live in poverty, compared with 40 per cent of Spanish-speaking children. This condition is probably related to their chances of attending and finishing school at the expected age. Indigenous students' rates of inclusion in primary and secondary education, although high (91 per cent and 81 per cent respectively), are lower than those of Spanish speakers; also, there is an important group of indigenous children (68 per cent) who do not attend preschool. Moreover, indigenous students who do attend school are more likely to drop out or finish school at an age different from that expected (UNICEF 2010).

These differences become more evident when analysing educational achievement. Results from a national assessment in 2001 and 2004 show gaps in mathematics and language-arts achievement when Spanish speakers are compared with indigenous-language speakers (Cueto et al. 2012). According to these results, at the primary level the gaps in 2004 were higher than those in 2001 in both mathematics and language arts, while at the secondary level these were higher for language arts. It seems that gaps between Spanish speakers and indigenous language speakers are not only present but increasing over the years.

Given the multicultural and multilingual character of the country,³ the Ministry of Education introduced in 1972 a Bilingual Education Programme which is still implemented in rural bilingual areas of the country and is currently known as the EIB programme (*Educación Intercultural Bilingüe*). EIB schools use both an indigenous language and Spanish as the media of instruction.

According to the Educational Census of 2000, indigenous students in rural areas have better chances of being promoted and not dropping out of school if they attend to an EIB school,

³ Peru is a multicultural, multilingual country where more than 40 indigenous languages are spoken. In the most recent National Census (2007), nearly 16 per cent of the population reported an indigenous language as their mother tongue. Quechua is the most common indigenous language and is spoken widely in the Andes. The second most common language is Aimara, mainly spoken in the southern Andes.

compared with indigenous children attending a Spanish-speaking school (Kudó 2004). Nevertheless, in 2008 only 37 per cent of all indigenous students attended a primary EIB public school (UNICEF 2010).

Although the use of a native language of instruction, accompanied by a learning experience based on traditional knowledge, is the basis of EIB education, in practice there are several difficulties among EIB schools. There is a lack of a specific curriculum for the EIB programme, and a lack of clarity on the development and training of EIB teachers (Zúñiga 2008); and the students' mother tongue is mostly used only in the literacy environment (e.g. posters in the native language displayed on classroom walls) and to give instructions to students (López 2002). Regarding teaching based on traditional knowledge, most EIB teachers surveyed by the Ombudsman (2011) reported that they mainly incorporate traditional knowledge when teaching about the environment (e.g. local plants and animals); however, the concepts that they teach and the interpretation of that knowledge are developed from a Western point of view. Thus there are important challenges to face, considering the use of native language and local knowledge in teaching practices.

As mentioned above, the EIB programme conducted by the government is developed almost exclusively in rural areas. Nevertheless, an important group of indigenous students attend regular schools in urban contexts (UNICEF 2010). Very little is known about their education:

The forced migration [of indigenous people] has created multiple demands that are not being attended appropriately, not only in terms of access to a quality education in the urban-marginal contexts, but also in terms of inequality of learning opportunities inside the classroom; inequalities derived from linguistics limitations, cultural differences, and, probably, ethnic discrimination. (Kudó 2004: 102)

3. Survey design and objectives

The School Survey is part of a longitudinal study which compiled household and individual information relating to all children from three rounds of survey data (2001, 2006, and 2009). The information collected in schools as part of this component complements the household and child surveys, allowing researchers to directly link household and child characteristics with children's experiences and achievements at school.

The main purpose of the School Survey is to analyse inequality in opportunities and outcomes among Peruvian students. More specifically, the survey seeks to describe (1) the experience of Young Lives schoolchildren; (2) the degree to which school quality varies in the different educational contexts/types of school attended by Young Lives children; and (3) the influence of children's experience of schooling on outcomes such as academic achievement and a sense of belonging to the school.

Given the interest in comparing students' educational experiences in different contexts or types of school, we used the Young Lives household and child surveys and the School Census for Peru to learn about the main characteristics of the schools that are attended by most Young Lives children.⁴ On the basis of the conceptual and research considerations mentioned above, we selected four main types of school, taking account of the following

4 Annex B contains information on the procedures followed to match the Young Lives Survey with the School Census.

variables: school type (public–private), location (urban–rural), and language used in school (monolingual in Spanish or intercultural bilingual – EIB). Crossing all of these variables resulted in eight cells, as shown below. From these we chose to focus on four main types of school, which are the most common. See Table 2.

Table 2. *Main types of school*

	Urban		Rural	
	Monolingual in Spanish	EIB (Intercultural Bilingual Education)	Monolingual in Spanish	EIB (Intercultural Bilingual Education)
Private	Survey Group 1	Not included	Not included	Not included
Public	Survey Group 2	Not included	Survey Group 3	Survey Group 4

These schools and the reasons for including them in the survey are presented below.⁵

- Private Urban Schools (Spanish): in Peru, private schools (religious or non-religious, both included in our survey) account for close to 20 per cent of the student population, as shown above. Attendance is dependent on payment of fees. Most are in urban, wealthier areas. These schools will provide a benchmark for our survey, describing what would be the best available educational opportunities and outcomes in schools, accessible only for families who can afford them. It should be mentioned, however, that in the original Young Lives sample the richest 5 per cent of districts were excluded. This is why the private schools in our sample will not reflect the most expensive private schools in Peru.
- Public Urban Schools (Spanish): all public schools are government-funded. Schools in this group are located in urban (generally wealthier) areas, and are attended mostly by Spanish speakers. All instruction is carried out in Spanish (and in some cases English, but very rarely will an indigenous language be included in schooling).
- Public Rural Schools (Spanish): in general, rural schools are located in small towns that are not district capitals. Schools in this group, according to national records, provide instruction in Spanish, regardless of whether or not they cater for indigenous students. We will investigate not only the quality of these schools but also their pertinence, especially in regards to the correspondence between children’s language and language of instruction.
- Public Rural Bilingual (EIB) Schools (indigenous language and Spanish): there are relatively few schools around the country where Bilingual Intercultural Education (EIB) is implemented. We visited some of these to study the implementation of the EIB programme.

The above are the survey groups that formed the focus of the School Survey in Peru. The results of the quantitative and qualitative components compare students’ educational processes and outcomes in each of these four contexts.

⁵ There are other types of school, e.g. institutions run by the military, but the number is small and thus not included as a focus of the study here.

4. School Survey: methods and overview

This section presents the methodology of the School Survey and some preliminary descriptive results.

4.1 Methods

4.1.1 Sample design

Selection of schools

The current survey is covering only the Younger Cohort. Covering all students (including the Young Lives Older Cohort) would mean visiting around 618 schools, which was not financially feasible. Alternatively, we proceeded to take as a sampling frame the third wave of the Young Lives children dataset conducted on 2009, taking into account some preliminary filters. First of all, we excluded children who are not attending primary school (14 observations, or 0.7 per cent); second, children for whom we have no school-related information (107 observations, or 5.6 per cent); and finally, children who are not included in any of the four groups mentioned above (60 observations, or 3.2 per cent).

After these filters were applied, our final number of Young Lives eligible children was 1,721, grouped in 591 schools. Our initial sampling design consisted of determining an optimal sample size based on the confidence interval, prior judgement of the maximum possible proportion of the sample, and the desired margin of error,⁶ corrected for finite sample size.⁷ After the optimal number of children was established, we proceeded with a stratified sampling for the private urban, public urban, and rural non-EIB schools only. In the case of rural EIB schools, we selected all the schools that existed in the stratum, given the small number in the sample frame. This process led to 231 children in 120 schools. However, since more than one Young Lives child attended some of the selected schools, and given that when we visited a school it was efficient to include all Young Lives children attending, the final sample consisted of 770 children. These were distributed across 14 regions of the country.

Due to budget constraints, the total number of regions visited had to be reduced. To do this, we divided the sample frame of children by type of school and assigned random numbers to each of the children included in the sub-samples for the 14 regions chosen in the previously stratified sampling. The range of the assigned random numbers depended on the sub-sample size. On this basis, we selected the first n -th children of each sub-sample satisfying the following conditions: (1) ideally there should be at least 20 schools for each of the sub-samples; (2) within each sub-sample, the selected children should have, on average, the same observable characteristics as those children not selected; and (3) the final sample

6 Defining n_1 as the target sample size of children, the sampling equation can be written as follows:

$$n_1 = z^2 p(1 - p)/d^2$$

where z is the z-score for the 95% confidence interval (1.96), p is the maximum possible proportion of the sample, and d denotes the desired margin of error.

7 Defining n_2 as the corrected target sample size of children, the Cochran's equation for correction for small sample size is:

$$n_2 = n_1/1 + ((n_1-1)/N), \text{ where } n \text{ is the population size (1,721 children).}$$

should contain the maximum number of children possible. We replicated this procedure several times until the three conditions were met. Additionally, we selected the schools located in the nine regions most likely to be chosen in all the replications.⁸ Given that schools with a larger proportion of children in the sample frame were more likely to be selected in this sampling procedure, we reduced the number of regions without altering the number of schools.

The final sample consists of 662 children grouped in 131 schools: 18 private urban; 62 public urban; 30 rural non-EIB (Spanish); and 21 rural EIB schools (indigenous language and Spanish). These 662 children represent about 33 per cent of the Young Lives Younger Cohort. As mentioned above, the resulting sample is not representative of the Young Lives population, since rural EIB schools are over-represented; nor can we claim that it is representative of children attending the four types of school nationally.

Replacements

Once in the field, we encountered new problems, in the sense that (1) some school authorities did not allow examiners entry into their schools and (2) there were no Young Lives children found in some of the selected schools. The latter was a consequence of the difference in the timing between the third wave of the Young Lives Survey (2009) and the Young Lives School Survey (2011), with some children moving with their families to a new location and thus a new school.

Reducing schools from the initial sample equals losing a potentially larger number of children, and therefore not only reducing the representativeness of the sample but also introducing bias due to sample selection. To overcome this problem, we constructed a parallel dataset of 'replacement schools' which was randomly selected and included some of the schools not initially chosen. Between five and ten schools were included in this dataset for each group of schools.

A total of 15 replacements were made from the initial sample (7 private urban; 4 public urban; 3 rural non-EIB; and 1 rural EIB). In addition, we added two private urban schools in order to reach 20 schools, and we lost one rural EIB school due to its inaccessibility. Thus, the resulting sample after replacements were made contained 132 schools and 654 Young Lives children. Table 3 summarises the distribution of schools and children by type of school and region of the final sample after replacements.

⁸ We counted the number of times that each of the 14 regions appears in each sample replication and we selected those nine regions that were most likely to be included in each of them.

Table 3. *Number of schools by region and type [with number of students after replacements]*

Type of school	Ancash	Arequipa	Ayacucho	Cajamarca	Huanuco	Junin	La Libertad	Lima	San Martin	Schools
Urban										
Private	3 [7]	1 [11]	0 [0]	0 [0]	0 [0]	1 [1]	5 [11]	9 [19]	1 [1]	20 [50]
Public	8 [81]	4 [37]	4 [36]	7 [37]	1 [4]	3 [15]	3 [32]	21 [93]	10 [75]	61 [410]
Rural										
Public non-EIB	3 [24]	1 [1]	9 [29]	2 [2]	4 [10]	6 [17]	0 [0]	2 [3]	4 [22]	31 [108]
Public EIB	7 [24]	0 [0]	6 [28]	0 [0]	2 [10]	5 [24]	0 [0]	0 [0]	0 [0]	20 [86]
Total	21 [136]	6 [49]	19 [93]	9 [39]	7 [24]	15 [57]	8 [43]	32 [115]	15 [98]	132 [654]

Note: Number of children reported in brackets.

In Table 3, the group with fewest students are the private schools; this fact should be taken into account in interpreting the results below, and is a consequence of the Young Lives sample excluding the richest 5 per cent of districts in the country (see Escobal and Flores 2008, for a description of the Young Lives sample in Peru).

Selection of peers

One of the goals of the School Survey is to collect information about the educational environment in which the Young Lives children learn. Peers are an important component of the educational environment. Thus we collected information on classroom peers in fourth grade, since this was the grade where most of the children from the Younger Cohort were placed in 2011. Selection of peers was based on two criteria: (1) the number of fourth grade classes in which the Young Lives children were enrolled within the same school, and (2) the class size. On this basis, a maximum of two classes and 20 peers were selected (10 peers per class).

The selection of peers was conducted in two stages. First, if more than two Young Lives children attended fourth grade within a school, but in different classes, then examiners randomly selected two classes. Class selection was performed according to a lottery procedure. Having selected the two classes, the next step was to select 10 peers. To do this, teachers were asked to provide the class roster, which, in the majority of cases, was alphabetically sorted. We constructed a table containing random numbers according to the class size. Examiners used this table to select 10 peers per class.

The final sample of fourth grade peers contains 1,207 observations, grouped in 133 classes of 105 schools (13 private urban; 54 public urban; 21 rural non-EIB; and 17 rural EIB). Of this sample, around 98 per cent of peers successfully completed both the mathematics and reading comprehension tests applied.

Final sample

Of the 654 Young Lives children planned for in the sample, we successfully surveyed 572 (87.5 per cent). Combining the number of children with the number of their peers, the final sample contains 1,779 children (180 from private urban schools; 1,148 from public urban schools; 255 from rural non-EIB schools; and 196 from rural EIB schools). Table 4 summarises the final sample distribution of surveyed children (Young Lives and peers) across types of school and regions.

Table 4. *Number of schools, students from Young Lives and peers, by region and type of school*

Type of school	Ancash	Arequipa	Ayacucho	Cajamarca	Huanuco	Junin	La Libertad	Lima	San Martin	Schools
Urban										
Private	3 [6] (50)	1 [10] (9)	0 [0] (0)	0 [0] (0)	0 [0] (0)	1 [1] (0)	5 [9] (41)	9 [16] (27)	1 [1] (10)	20 [43] (137)
Public	8 [75] (117)	4 [30] (57)	4 [35] (58)	7 [31] (95)	1 [2] (10)	3 [11] (50)	3 [31] (44)	21 [78] (220)	10 [64] (140)	61 [357] (791)
Rural										
Public non-EIB	3 [22] (22)	1 [1] (0)	9 [24] (39)	2 [2] (0)	4 [10] (14)	6 [16] (51)	0 [0] (0)	2 [3] (10)	4 [21] (20)	31 [99] (156)
Public EIB	7 [21] (44)	0 [0] (0)	6 [24] (35)	0 [0] (0)	2 [6] (14)	5 [22] (30)	0 [0] (0)	0 [0] (0)	0 [0] (0)	20 [73] (123)
Total	21 [124] (233) 357	6 [41] (66) 107	19 [83] (132) 215	9 [33] (95) 128	7 [18] (38) 56	15 [50] (131) 181	8 [40] (85) 125	32 [97] (257) 354	15 [86] (170) 256	132 [572] (1207) 1779

Note: Number of schools reported without brackets. Number of Young Lives children reported in round brackets. Number of peers reported in square brackets. Total number of children (Young Lives children plus peers) reported in bold.

In addition to the students and their peers, we surveyed the head teachers and a sample of teachers in every school included in the sample. The Head Teacher Questionnaire was administered on the basis of school shifts. For example, if in a given school there were two Young Lives children, each in different shifts, then in that school we surveyed both. If, however, the same individual was the head teacher of both shifts, then he or she completed two questionnaires (one for each shift). The selection of teachers was made on the basis of Young Lives children. We surveyed the Mathematics and Communication (Language Arts) teacher of every class containing a Young Lives child. Additionally, we asked the tutor (class teacher) of each of these classes to complete a form about their students. Table 5 records the total number of head teachers and class teachers interviewed by region and type of school. The number of teachers encompasses Mathematics teachers, Language Arts teachers, and tutors. It should be noted, however, that in some schools the same person

teaches both subjects and is also the tutor of the class. All this is reflected by giving the same code to the teacher in the data bases.

Table 5. *Total number of head teachers and class teachers interviewed by region and type of school*

Type of school		Ancash	Arequipa	Ayacucho	Cajamarca	Huanuco	Junin	La Libertad	Lima	San Martin	Schools
Urban											
Private	Head teachers	3	1	0	0	0	1	5	9	1	20
	Teachers	12	2	0	0	0	1	12	22	1	50
Public	Head teachers	8	4	4	9	1	3	4	25	11	69
	Teachers	42	11	12	23	2	9	14	57	33	203
Rural											
Public (Spanish)	Head teachers	3	1	9	2	4	6	0	2	4	31
	Teachers	6	1	12	2	6	10	0	3	7	47
Public EIB	Head teachers	7	0	6	0	2	5	0	0	0	20
	Teachers	10	0	9	0	2	9	0	0	0	30
Total		21	6	19	11	7	15	9	36	16	140
		70	14	33	25	10	29	26	82	41	330

4.1.2. Variable definitions

As mentioned above, the focus of the School Survey is an analysis of whether or not the educational opportunities of children are tied to their individual and family background, and both of these in turn to their educational outcomes. Educational opportunities refer in general to the chances that children have to learn skills in different areas that are relevant to their background and interests. It could be further subdivided into school quality and responsiveness of school.

School-quality variables

School quality is a variable which could be defined in many different ways. In this case we focus on inputs available at school and educational processes implemented in pedagogical interactions in the classroom, including the following variables.

- 1. School size, organisation, and timetable.** We collected information on the number of students, teachers, and other staff members, classes per grade, schedule of the school for the year, shifts per day, number of holidays, daily schedule, and compliance with all of this. We also registered the existence of a school breakfast/lunch programme or other programmes implemented at school, as well as student and teacher attendance.
- 2. Physical infrastructure.** We collected data on the public services (e. g. running water, sewerage, and electricity) and other services (telephone, internet access) available at school, infrastructure of the building and its adequacy, availability of a staff room and head teacher's room, and cleanliness of school facilities. We also registered the availability and adequacy of toilet and sport facilities.

- 3. Indicators of educational progress.** We registered promotion, retention, and drop-out rates of the last three years (2010, 2009 and 2008) for each grade of each school.
- 4. Institutional management.** We measured school climate, head teachers' leadership style, teachers' and head teachers' job satisfaction, and the existence and frequency of staff meetings. We also registered the participation of school, parents, and students in programmes and organisations that promote decision making at these levels (e.g. the Municipalisation programme, APAFA, CONEI), and the school relationship with higher authorities (UGEL and DRE specialists)⁹. This variable has become important since the Ministry of Education (MED) changed the school management model in the 1990s (Vasquez and Oliart 2003) as part of a major decentralisation of the educational processes, focused on giving more autonomy to the schools and the intermediate actors (Cuglievan and Rojas 2008). In this context, the reform aimed to (a) empower the role of the head teacher in the management of resources (human and physical); (b) give parents, students, and community more influence in the process of decision making; and (c) strengthen schools' educational management by creating documents that define and guide its functioning (Cuglievan and Rojas 2008).
- 5. Classroom information.** We gathered information on different processes and resources in the classroom, including the following:
- 5.1. Classroom climate and teachers' perception of their students.** We registered students' perceptions on classroom climate, including the following aspects: teacher–student relations, peer relations (including information on the prevalence of bullying), teacher support, and disciplinary climate. We also collected teachers' perceptions of students' sociability, academic persistence, and educational attainment, and of the challenges and difficulties that teachers have to face during the school year.
- 5.2. Opportunities to Learn (OTL) in mathematics.** We measured four OTL variables: number of correct responses from students, adequacy of teacher's feedback, curriculum coverage, and cognitive demand of the exercises. The OTL variables were measured by means of teachers' questionnaires and direct analysis of students' notebooks. Below are the definitions for each of these variables. However, a detailed description of the procedures followed for the analysis of the students' copybooks and the results of the OTL analysis will be presented in a separate document.
- Regarding the first two variables, we measured students' responses and teachers' feedback through analysis of students' notebooks. We first determined if a student's response was correct or incorrect, and then we coded the adequacy of teacher's feedback to student's response, defined as the number of responses given by teachers to incorrect responses from students, pointing out the correct answer.
- Regarding curriculum coverage, we measured the *implemented curriculum* (content coverage, content exposure, and content emphasis) both through teacher-survey responses and analysis of students' notebooks. This is one of the

9 APAFA stands for *Asociación de Padres de Familia* (Parents' Association); CONEI for *Consejo Educativo Institucional* (Institutional Educational Council); UGEL for *Unidad de Gestión Educativa Local* (Local Education Management Unit); and DRE for *Dirección Regional de Educación* (Regional Education Directorate).

three levels in which curriculum is usually analysed (the others are the *intended curriculum*, which is the curriculum planned for by the Ministry of Education, and the *attained curriculum*, measured by the students' achievement outcomes; see IEA 2003; McDonnell 1995; Thompson and Senk 2006).

Cognitive demand refers to the degree to which mathematics exercises require students to provide responses based on memorisation only (low cognitive demand), or to think and elaborate (high cognitive demand) (Boscardin et al. 2005; Cueto et al. 2006; Cueto et al. 2004; Cueto et al. 2003). It assesses student behaviour, skills, and abilities used to solve an exercise or problem (IEA 2009). In order to categorise students' responses, we adapted TIMSS¹⁰ framework of cognitive domains, which proposes four mathematical cognitive domains: (a) knowing, (b) applying, (c) solving routine problems, and (d) reasoning (IEA 2003).

Finally, an additional variable usually considered in OTL studies is the availability of pedagogical materials for students (Boscardin et al. 2005; Herman, Klein and Abedi 2000). Through teacher's and student's questionnaires we recorded the availability and frequency of use, as suggested by some authors (Laffey et al. 2003, cited in IEA 2009).

5.3. Pedagogical content knowledge (PCK). This is a particular kind of knowledge which enables teachers to transmit their knowledge of the content of a subject to their students (Shulman 1986); it includes 'a) knowledge of instructional strategies incorporating representations of subject matter and responses to specific learning difficulties, and b) knowledge of student conceptions with respect to that subject matter' (Park and Oliver 2007, : 265). In this School Survey, we are focusing on the following PCK dimensions: knowledge of student conceptions and misconceptions about the subject matter, including knowledge of most common misconceptions and difficulties of mathematical topics, and adequacy of approach of a topic, depending on the developmental capabilities of students (Hill and Ball 2004; Hill, Ball, and Schilling 2008). We measured PCK by presenting teachers with a realistic hypothetical scenario and one or more problematic situations in which Mathematics PCK is required in order to resolve it correctly (Hill and Ball 2004; Hill, Ball, and Schilling 2008; Koirala, Davis, and Johnson 2008; Lim-Teo et al. 2007).

Responsiveness of school variables

The second big set of variables within educational opportunities is the responsiveness of schools, which refers to the principle that schools should respond to students' needs and potential. In many ways, the public educational system in Peru could be described as Darwinian, in the sense that children are expected to adapt to schools, which are fixed environments with little flexibility to accommodate individuals' needs and potential. We plan to explore this hypothesis and document how it works in specific ways. We will explore pertinence through a couple of variables:

¹⁰ Trends in Mathematics and Science Study.

1. Availability of language instruction. There is a strong consensus in the international literature that children should learn to read and write in their maternal tongue. As mentioned before in this document, Peru is a multicultural, multi-ethnic country where more than 40 indigenous languages are spoken. In response to this context, the government of Peru developed a legal frame which supports policies of integration and equity. The Education Law (2003) states that intercultural education is a principle of educational process; it states in its 20th article that ‘intercultural bilingual education is available across all the educational system’, embracing the importance of teaching in the mother tongue, of valuing indigenous culture and preserving indigenous languages. Besides, the MED has an internal department (Department of Intercultural Bilingual Education) dedicated to the design, supervision, and evaluation of intercultural bilingual education (MED 2008). In 2011, the MED stated that regional and local educational authorities should identify which schools needed intercultural bilingual education, according to whether they met any of the following criteria: linguistic pertinence (schools located in indigenous communities with children who speak a native language), cultural pertinence (schools located in a context related to native cultures), or self-identification (schools located in native-language communities that are in a process of cultural revitalisation or which ask for intercultural education (MED 2011). According to this legal frame, there are some public and private (NGO) programmes of intercultural bilingual education across the country; however, they benefit only 11 per cent of the indigenous children in Peru (UNICEF n.d).

In this School Survey, we have collected information that will enable researchers to analyse the pertinence of materials and interactions in classrooms for Spanish-speaking and indigenous students, which includes registering the language of instruction, school participation in and implementation of the EIB programme, and the availability and pertinence of EIB materials, as well as teachers’ and students’ mastery of indigenous languages and attitudes towards indigenous languages. We also collected information to identify the barriers against establishing a truly intercultural bilingual education programme. The qualitative sub-component also collected information on this aspect, as explained later.

2. Support for those lagging behind or dropping out. Usually, at least in the public system, there are no tutorials or extra classes for those who do not keep up academically with their peers. The provision of support systems for those with family or personal troubles depends on the good will or resources of individual schools and teachers. Finally, there are no provisions to retain students at risk of dropping out or who have already done so. In Peru, there is only a mention in the 18th article of The Education Law (2003) indicating that ‘local authorities [...] may guarantee mechanisms that promote pertinent enrolment, permanence and re-incorporation of students to educational system and establish special actions to keep those at risk of exclusion’. Also, the MED establishes automatic promotion from 5-year pre-school to second grade of primary school in an effort to reduce school drop-out: an initiative maintained since 1995 (MED 2011). Given the above, we collected information on school policies and strategies to identify and help students at risk of dropping out or failing academically, and students with family or personal troubles.

Outcome variables

We included some outcomes in this survey which will also serve as predictors of entry into high school and performance in secondary school. These variables are mentioned below.

1. **Over-age students.** Students are expected to be six years old by 30 June in order to be registered in the first grade of primary education (classes starting on 1 March). The indicator for over-age students is constructed on the basis of this information and children's dates of birth.
2. **Sense of belonging.** This variable captures the degree to which students feel that they are part of a community within the school. It has been found that this variable is associated with school achievement and sense of well-being. In order to measure students' sense of belonging we used an adaptation of a Likert Scale developed in PISA 2000 (Program for International Student Assessment), *Willms 2003*) where students are asked to indicate if they 'strongly disagree', 'disagree', 'agree', or 'strongly agree' with a series of eight statements such as 'I feel like an outsider (or left out of things)', 'I feel lonely', and 'I do not want to go to school'. Regarding this variable, the plan is to measure it again in the second round of the School Survey when they have moved on to secondary school, which is a major transition in school life in Peru. The changes will be correlated with achievement and individual and family characteristics.
3. **Academic self-concept.** This variable refers to students' self-perceived competence regarding several aspects of academic performance. We measured this variable using an adaptation of Marsh's ASDQ I (Academic Self Description Questionnaire, Marsh 1990)¹¹. The original instrument contains 14 scales, but for the purpose of the School Survey we focused only on two of the subject-matter sub-scales: mathematics and reading.
4. **Achievement in reading comprehension and mathematics** (with an emphasis on number and number sense, as in the Young Lives surveys). We developed tests of comprehension in mathematics and reading for every grade of primary education. The tests were administered to all Young Lives children in the sample. Additionally, as noted above in the case of fourth grade students, we also tested a sample of their classroom peers to test the hypothesis that children tend to be grouped in more or less equivalent academic groups. For adjacent grades we repeated some items, to be used as anchors in order to generate scores on a single scale for all grades involved. All tests were administered in Spanish. There are several reasons for this. First, even in EIB schools children are expected to read and write in Spanish by the age of 10. Second, from pilot and previous studies we know that most of the instruction in EIB schools is in Spanish. Third, there are almost no items or tests available for the range of grades in which we were interested that we could adapt (especially in mathematics). However, it is important to remember in the analysis that indigenous students are not responding to achievement tests in their mother tongue, which could underestimate their abilities.

¹¹ See <http://www.self.ox.ac.uk/Instruments.htm> for further information on this instrument.

4.1.3. Instruments

In this section, we present a description of each of the instruments used to collect data for the School Survey, and a brief description of the procedures followed to administer them. At the end of the section Table 6 summarises the list of instruments and the school grades to which they were administered.

Head teacher questionnaire

The questionnaire was organised in seven sections to capture information about characteristics of the head teacher (section 1), organisation and size of school (section 2), and infrastructure and services in school (section 3). Aspects of organisation and management of the school were collected in sections 4–6: schedules and attendance (section 4); students' enrolment and management of teachers (section 5); and school management, parents' and students' participation, and educational support from public and private organisations (section 6). Head teachers' perceptions of and attitudes to the school, teachers, and students, as well as job satisfaction and leadership style, were measured (section 7). The questions for the last section were adapted and translated from international evaluations: PIRLS 2006 (Progress in International Reading Literacy Survey), SERCE 2008 (Second Regional Comparative and Explanatory Survey – acronym in Spanish), TIMSS 2007 (Trends in International Mathematics and Science Survey), PISA 2000 (Program for International Student Assessment), and TALIS 2008 (Teaching and Learning International Survey). The questionnaire consisted of 101 questions and was administered to the primary head teacher as an interview, taking around an hour to be completed.

Mathematics teacher questionnaire and language-arts teacher questionnaire

The Teacher Questionnaire had two versions: for Mathematics teachers and for Language Arts teachers. The core of the questionnaire (sections 1, 5, and 6) were the same for both. The Mathematics Questionnaire had three additional sections.

This instrument collected information about characteristics of the teacher (section 1), attendance at the school (section 2), and management issues at the school (section 3). Sections 4 and 5 explored teachers' perceptions about the school, teachers, and students; and about job satisfaction, and head teachers' leadership style. Questions regarding teachers' perception were adapted and translated from international evaluations such as PIRLS (2006), SERCE-UNESCO (2008), TIMSS (2007), PISA (2000), and TALIS (2008). The last section (section 6) collected information about resources used in class, and about mathematics and language curriculum coverage (according to the 2009 National Curriculum). It consisted of 64 questions from sections 1 to 5. Section 6 included resources used (22 questions) and mathematics and language curriculum coverage (around 25 questions per grade – from first to sixth grade – that is, a total of approximately 150 questions). It was a self-administered instrument to be completed by mathematics and language-arts teachers, with instructions explained by the fieldworker. It took on average one hour to complete this questionnaire. In cases where the teacher taught both mathematics and language arts, he or she would complete all of the mathematics questionnaire and only the last sections of the language-arts questionnaire, which included specific information about language arts.

Mathematics teachers' analysis of students' responses

The main objective of this instrument was to evaluate mathematics teachers' pedagogical content knowledge. It consisted of 11 questions from mathematics exercises, with typical fourth grade students' mistakes in items such as additions, subtractions, multiplications,

fractions, and maths problems. It was based on instruments used for the School Studies in Vietnam and India. It was a self-administered instrument completed by fourth grade mathematics teachers, with instructions explained by the fieldworker. Time invested to develop this questionnaire was around 40 minutes, in which the examiner needed to be present in the same room with the teacher to register time spent and to ensure that teachers did not share their answers.

Teacher report on students

The purpose of this instrument was to collect information about three aspects of students: sociability (how easily they make friends), persistence in academic work (dedication/commitment to study) and teachers' academic expectations about the students (perception of the highest level of instruction that a particular student will reach). The instrument included one example of each of the above and was completed by the class tutor for Young Lives children and peers. It took 45 minutes to administer the instrument.

Student questionnaire

This questionnaire was organised in five sections to obtain information about student characteristics (section 1); students' perceptions of their school, class, and subjects (sections 2, 3, and 4), including topics such as teacher–student relations, peer relations (with information about bullying), teacher support, and disciplinary climate. The items for these three sections were taken from the international evaluation PISA (2000). The final section inquired about family involvement in the school, and academic support at home. It was composed of 21 questions and was completed by all the Young Lives sample and their fourth grade peers. Administration varied, depending on the students' school level: as an interview for students from first to third grades, and in groups of three for the fourth grade students, who marked their own answers, guided by the examiner, who made sure that they understood them and marked the answers correctly. Each type of administration lasted approximately 45 minutes.

Reading comprehension achievement test

This test was aimed at measuring students' achievement in reading comprehension. It had six versions, one per grade, and they all measured abilities regarding written communication (initial reading and text reading) and reading of verbal icon texts. Items were taken from national standardised tests such as the National Evaluation of 2001 and Census Evaluation of 2007, and tests prepared for the project AprenDes.¹²

Each test had between 23 and 30 items and was completed by all children in the Young Lives sample and their fourth grade peers. Administration was collective, with children taking the test at the same time, with previous explanation of instructions given by the examiner (using posters with examples of questions that would be found in the test). Maximum time given to develop the test was 60 minutes.

Mathematics achievement test

Similar to the Language Arts test, the mathematics achievement test had six versions, one per grade, and they all measured abilities regarding numbers and number sense. Items were taken from national standardised tests such as the National Evaluation of 2004 and Census

¹² We used language tests for students at 1st, 3rd and 6th grades, elaborated in 2005 under the project AprenDes.

Evaluation of 2007, 2008 and 2009; tests prepared for the project AprenDes;¹³ the Mathematics Achievement Test for Young Lives Younger Cohort;¹⁴ and tests used for the impact evaluation of the OLPC (One Laptop Per Child) programme in Peru.

Each test had between 29 and 37 items and was completed by all children in the Young Lives sample and their fourth grade peers. As in the Language Arts test, administration was in groups, with children taking the test at the same time, previous explanation of instructions having been given by the examiner (using posters with examples of questions that would be found in the test). Maximum time given to develop the test was 60 minutes.

Head teacher, teacher, and student socio-linguistic questionnaires

We elaborated three socio-linguistic questionnaires: one for the head teacher, one for the teachers, and one for the students. The main purpose of these instruments was to gather information about the use of and attitudes to Spanish and native languages. It was organised in three core areas: the usage of languages at home and daily activities, the usage of languages at the school, and perceptions about languages. The head teacher's and teachers' questionnaire included a section for information about the implementation of the EIB programme, and the availability of educational resources in native languages. The teachers' version also included an additional section about the usage of Spanish and native languages in mathematics and language arts.

Questions were adapted from a survey used for a study about bilingual education in Peru (elaborated in 2000). The head teacher questionnaire was composed of 28 items and was administered as an interview. The teacher version had 28 questions and was self-administered after an explanation of the instructions given by the examiner. The student version had 21 items and was administered as an interview or in groups of three according to the students' school level.

The questionnaire was administered only to the Young Lives child who had a native language as his or her mother tongue. The teacher and the head teacher of the school had to answer the questionnaire only if (1) at the class/school attended a Young Lives student had a native language as his or her mother tongue, and (2) the teacher or the head teacher spoke a native language with the students at school (both criteria had to be fulfilled). The approximate time to complete each instruments was 40 minutes.

School indicators of educational progress

This instrument gathered information about the number of students registered, promoted, retained, or withdrawn, or who had moved to another school, per each primary grade in the school in the last two years (2009 and 2010). It was completed by the examiner and based on school records. The time of administration varied according to the availability of the records.

Socio-demographic information format

This format collected information about the peers, including their attendance at pre-school and the mother tongue of their parents. It was completed by the examiner and based on school records (in some cases when information was not registered by the school, examiners

13 We used language tests for students at 1st, 3rd and 6th grades, elaborated in 2005 under the project AprenDes.

14 We used a mathematics achievement test elaborated in 2006 as part of the Young Lives project.

had to recover the data from the teachers, head teachers, or students themselves). Time of administration varied according to the availability of the records.

Teachers' attendance format

This instrument gathered information about teacher attendance at school. Fieldworkers collected the data through direct observation, registering if the teacher was present at the time of the observation (a total of three observations, one per day).

Rosters

We used four rosters: (1) Young Lives children in the school; (2) class roster; (3) head teacher and teacher roster; and (4) Young Lives children and peers roster. The first one presented a list of Young Lives students who were supposed to be found at the school. With this instrument examiners had to verify their presence and also select randomly two fourth grade students (per school) whose notebooks and workbooks would be photocopied. It also included the school ID. The class roster served to register the number of classrooms where the fieldworker needed to apply the instruments, and the number of grades within each classroom (in rural areas some classrooms have students from different grades studying together). The head teacher and teacher roster served to control the administration of the instruments applied to the head teacher and the teachers at the school and to assign each their ID. Finally, the Young Lives children and peers roster served to control the administration of the instruments applied to students, and to assign their ID. See Table 6.

Table 6. *List of instruments by grades in which they were administered*

Instruments	Grades in primary education					
	1	2	3	4	5	6
Student's questionnaire (YL children)	✓	✓	✓	✓	✓	✓
Student's socio-linguistic questionnaire (YL children)	✓	✓	✓	✓	✓	✓
Mathematics test (YL children)	✓	✓	✓	✓	✓	✓
Reading comprehension test (YL children)	✓	✓	✓	✓	✓	✓
Student's questionnaire (peers)				✓		
Mathematics test (peers)				✓		
Reading comprehension test (peers)				✓		
Socio-demographic information format (peers)				✓		
Mathematics teacher questionnaire	✓	✓	✓	✓	✓	✓
Communication (language arts) teacher questionnaire	✓	✓	✓	✓	✓	✓
Teacher report on students	✓	✓	✓	✓	✓	✓
Teacher attendance format	✓	✓	✓	✓	✓	✓
Teacher's socio-linguistic questionnaire	✓	✓	✓	✓	✓	✓
Mathematics teacher analysis of students' responses				✓		
Mathematics notebooks and workbooks analysis				✓		
Head teacher's questionnaire	✓	✓	✓	✓	✓	✓
Head teacher's socio-linguistic questionnaire	✓	✓	✓	✓	✓	✓
School's indicators of educational progress	✓	✓	✓	✓	✓	✓

4.1.4. *Procedures*

In advance of the field work, some procedures were adopted to improve the design and data-collection methods. These included workshops with education and research authorities to inquire about the focus of the study and potential instruments, the development of a pilot study, and extensive training of fieldworkers.

Workshops

Coordination with the MED and representatives of the public sector and civil society (international cooperation and academia) was achieved through workshops aimed at presenting and consulting the survey design and variables. One of the workshops took place in the MED: around 20 authorities, including the heads of Basic Education, Secondary Education, EIB, and Research, participated and provided valuable feedback for the survey design and instruments.

Another workshop took place in GRADE (Group for the Analysis of Development) with stakeholders to gather information for the School Survey. The Director of Primary Education at the MED, an Inter American Development Bank officer, researchers and officers from NGOs dealing with the educative issues participated. They also provided important feedback and suggestions that we later incorporated in order to improve the survey design.

Pilot study

The pilot study took place in September 2011 in three schools, two of them in an urban area of the region of Lima (one public and one private school) and one in a rural area of the region of Ancash (a bilingual education school). The pilot study was aimed at adapting instruments to the local context and it consisted of testing them with a sample similar to the one we would find in the actual field work, determining the best ways of applying them, and measuring times of application and total time of application in school. Since most of Young Lives students were supposed to be found around fourth grade, for the pilot study we collected information in third, fourth, fifth and sixth grades.

Six fieldworkers participated in the gathering of information; they all had previous experience of working in Young Lives household surveys. They received training from 14 to 19 September 2011 (a total of five days) in the application of instruments and procedures to follow. The work of the examiners was supervised by GRADE staff, who also provided help by applying some of the instruments in order to finish the work within the time planned.

This pilot allowed us to determine some changes in procedures and instruments to improve the data collection (for example, in the type of application – interviews, group applications – or the wording of items to make them more easily comprehensible).

Training and selection of fieldworkers

After incorporating changes in accordance with the information collected in the pilot study, we proceeded to train the examiners for the field work. The training took place from 13 to 21 October 2011 (a total of eight days) for 51 fieldworkers. It aimed to present and practise the application of instruments and procedures, so they would be prepared to gather the information in the best way possible. Most of the examiners were the same as in the Young Lives household survey.

During the training, fieldworkers became familiar with all the instruments and practised the application of each one of them through role playing. We elaborated a Fieldworker Manual (available in Spanish) with the description of all the procedures necessary to collect the data

in a standardised way. Training was monitored by GRADE staff members, who provided examples on how to apply the instruments correctly and constantly gave individualised feedback on how to improve the examiners' performance.

Throughout the training, fieldworkers were evaluated in terms of their knowledge of procedures and their performance when applying instruments, by written evaluations and observations during role playing. This constant evaluation allowed GRADE staff to select the fieldworkers' team, consisting of a total of 38 examiners. Fieldworkers were assigned to each one of the seven teams formed. Team composition was based on knowledge of the region (since most of them had applied household surveys in the selected regions), and each of the examiners' strengths (knowledge of procedures and performance measured by the evaluations) observed during the training, so that each team would be balanced. Each team had a supervisor: a fieldworker who, besides applying instruments, was in charge of coordinating and monitoring the work of the team; supervisors were chosen for their high performance during training and their leadership capabilities. For that purpose we also elaborated a Supervisor Manual (available in Spanish), containing the responsibilities and procedures of which they were in charge.

Field work

Field work took place from 4 to 25 November 2011 in nine regions: Lima, Cajamarca, Trujillo, Ancash, Huanuco, Junin, San Martin, Ayacucho and Arequipa. Seven teams were assigned accordingly (one team was assigned to cover Huanuco and Junin and another one was assigned to cover Cajamarca and Trujillo because of the geographical proximity of those regions).

Examiners' work consisted of approaching selected schools within the region for which they were responsible and applying the instruments with materials delivered every other week from GRADE. Time spent in each school varied from two to three days, depending on the number of Young Lives children found in schools and the number of examiners covering the school (examiners usually worked in pairs). Their work was supervised by GRADE staff sent to most of the regions to monitor procedures and, in some cases, to help in the application of instruments.

Quality checks

After the field work some of the examiners, most of them supervisors, worked on applying quality checks to the collected data. They were assigned a region different from the one they had covered during the field work and they checked every instrument applied in order to identify any inconsistencies in the information provided. Quality checks lasted for approximately a month after the field work.

Analysis of student notebooks and workbooks

For the analysis of notebooks and workbooks gathered during field work we trained a team of people in charge of coding exercises contained in those materials. Descriptions of coding and results are available from the authors.

4.2 Preliminary results

As explained above, this working paper is mainly descriptive. In what follows, we present some preliminary results to give the reader an idea of the type of information available in the school survey. We trust that this will encourage deeper analysis of the data by researchers.

Results are shown for the four survey groups for each of the three groups of variables defined above: school quality, school responsiveness to students' needs, and students' educational outcomes. We have selected some indicators within each group, based on relevance to the general theme of inequality in education. Before turning to the results themselves, we present the main characteristics of the school survey sample.

4.2.1. Sample characteristics

Table 7 presents some statistics concerning the students attending each type of school. In terms of gender, there appears to be a balance across the four types of school, with public urban schools having slightly more girls. Almost all students from private and public urban schools have Spanish as their mother tongue. In contrast, most students from rural areas have an indigenous mother tongue, especially in EIB schools, where the percentage is 60 per cent. Lastly, the table presents the distribution of maternal educational attainment by type of school, and some differences between groups can be observed. Students attending urban private schools have on average more-educated mothers. In sharp contrast to this situation, students attending EIB schools have less-educated mothers; almost all mothers in rural EIB schools have not completed basic education.

Table 7. *Student characteristics by type of school*

	Urban		Rural	
	Private (N=180)	Public (N=1122)	Public (Spanish) (N=252)	Public EIB (N=189)
Boys (%)	51.7	46.52	54.7	50.8
Students with Spanish mother tongue (%)	98.3	96.1	70.2	39.7
Students with an indigenous mother tongue (%)	1.7	3.9	29.8	60.3
Mother's educational attainment:				
Incomplete secondary or less (%)	20.1	52.6	89.8	96.0
Complete secondary (%)	31.6	31.9	7.6	4.0
Tertiary or more (%)	48.3	15.4	2.4	0.0

Source: Young Lives School Survey – Peru

Table 8 presents the sample means of teachers' characteristics by type of school. Most teachers are women, especially in urban public schools. The proportion of male teachers in private urban schools is 48 per cent. The figures for this variable are 33.0 per cent, 46.8 per cent and 44.8 per cent for public urban, rural public (Spanish), and rural EIB schools respectively. In terms of age, private urban schools seem to have younger teachers in contrast with other types of school.

Table 8. *Teacher characteristics by type of school*

	Urban		Rural	
	Private (N=50)	Public (N=204)	Public (Spanish) (N=47)	Public EIB (N=30)
Men (%)	48.0	33.0	46.8	44.8
Age	35.9	46.5	41.8	43.2
Teacher with Spanish mother tongue (%)	96.0	98.5	87.2	62.1
Teacher with an indigenous mother tongue (%)	4.0	1.5	12.8	37.9
Teacher's education (tertiary pedagogical studies) (%)	88.0	99.5	100.0	100.0
Teacher's education (tertiary – other studies) (%)	12.0	0.5	0.0	0.0
Years of experience in regular basic education	11.3	20.6	15.1	13.1
Years of experience in primary education	6.9	12.6	7.3	6.8

Source: Young Lives School Survey – Peru

In relation to their mother tongue, almost all teachers in private and public urban schools have Spanish as their mother tongue. The proportion is also high in rural public schools in Spanish (87.2 per cent), while in the case of EIB schools 62.1 per cent of teachers reported having Spanish as their mother tongue. This result suggests that not every EIB school in the sample has a teacher who is a native speaker of the language spoken by most of his/her students (as we mentioned above, more than 60 per cent of the students in EIB schools have an indigenous mother tongue), which limits the implementation of a truly bilingual programme in those schools. We will expand somewhat on this later, when we discuss schools' responsiveness to students' needs and potential.

All the teachers in the sample have higher education. In public schools, the qualification tends to be in pedagogical studies, but in private schools 12 per cent of the teachers have professional experience or qualifications other than pedagogy. In terms of years of experience, private-school teachers have less and public-urban teachers more. This is probably due to their preference to teach in urban areas (which have more services and better living standards), which is granted to them as they have more experience. EIB teachers have less experience among the public-school teachers.

4.2.2 *School quality, school responsiveness and student outcomes*

As previously indicated, in this sub-section we present the descriptive results for each of the three groups of variables defined above: school quality, school responsiveness to students' needs, and students' educational outcomes. The results are shown in accordance with survey groups.

School quality

We collected information on five aspects of school quality: (a) school size, organisation and timetable; (b) physical infrastructure; (c) school's indicator of educational progress; (d) institutional management; and (e) classroom information, including classroom conditions, students' opportunities to learn in mathematics, and teachers' pedagogical content knowledge for mathematics. In this preliminary report we are only reporting some indicators related to the first two aspects. Information on school organisation and resources gives an idea of the educational opportunities of children attending different types of school.

Regarding school size, similar to demographic patterns in the country, urban schools (both private and public) tend to be larger than rural schools. In the urban areas most of the schools are full-grade schools, in contrast with the rural areas, where most of the schools are multi-grade. This is consistent with the information on the number of rooms available for teaching purposes (average 9.5 and 16.6 for private and public urban schools, but only 3.6 for EIB schools). Finally, in terms of students per teacher, the student/teacher ratio is higher for urban public schools and lower for private schools. See Table 9.

Table 9. *Primary schools' characteristics*

	Urban		Rural	
	Private (N=20)	Public (N=61)	Public (Spanish) (N=31)	Public EIB (N=20)
Multi-grade (%)	5.0	1.4	77.4	70.0
Number of rooms used for teaching	9.5	16.6	4.8	3.4
Number of teachers (primary)	14.4	20.18	4.9	3.6
Students per teacher	14.7	24.0	18.6	18.4

Source: Young Lives School Survey – Peru

In terms of infrastructure and basic services, Table 10 reports the percentage of schools for which the head teacher reports the presence of library, computer lab, playground or field, and dispensary, and whether the school has access to basic services such as electricity, piped water, sewerage, telephone and internet.

Table 10. *School infrastructure and access to basic services*

	Urban		Rural	
	Private (N=20)	Public (N=61)	Non EIB (N=31)	EIB (N=20)
Infrastructure				
Library (%)	50.0	65.2	12.9	25.0
Computer lab (%)	60.0	75.6	9.6	30.0
Playground/field (%)	40.0	69.5	29.0	30.0
Dispensary (%)	30.0	2.9	0.0	0.0
Basic services				
Electricity (%)	100.0	100.0	77.4	95.0
Piped water (%)	100.0	94.2	38.7	45.0
Sewerage (%)	100.0	91.3	12.9	10.0
Telephone (%)	95.0	73.9	3.23	0.0
Internet (%)	90.0	69.5	3.23	15.0

Source: Young Lives School Survey –Peru

Libraries and computer labs are more likely to be present in urban schools – both private and public – than in rural schools. However, urban private schools are less likely than urban public schools to report having a playground or field. This is probably due to the fact that small private schools (like the ones we visited) are usually located in large houses or small buildings originally designed for housing purposes. Regarding access to public services, the situation is similar to the one described above. All the urban private schools in the sample

reported having access to the three main public services (electricity, running water and sewerage). In addition, 95 per cent of them have access to telephone services and 90 per cent to internet services. In sharp contrast with this situation, most rural EIB schools do not have access to running water and sewerage services, in addition to a very limited – if not non-existent – access to telephone and internet services.

As shown in Tables 9 and 10, urban schools, and particularly private schools, seem to have in general better resources than rural schools. Table 9 shows that rural schools are more likely to be multi-grade; and, as Cueto, Guerrero, León, Seguín and Muñoz (2012) pointed out, this type of school is ‘widely considered to be of poor quality, at least in terms of the achievement of the students, but this could be due to a combination of poor educational services and the characteristics of the students that attend these schools’ (p. 264).

The indicators presented above are mainly focused on inputs available at school. Although this is an important aspect of school quality – a good infrastructure and access to services are often depicted as desirable characteristics – it is not the only one. As explained earlier, the educational processes implemented in pedagogical interactions in the classroom are also an important aspect. Unlike other large surveys, in this survey we collected information on some educational processes. This rich information is available on the data base and can be used to further investigate the issue of educational inequalities, analysing simultaneously – for instance – the links between students’ individual and family characteristics, educational learning processes at school and performance

School responsiveness

We considered two different aspects of school responsiveness: the availability of language instruction in the mother tongue and the school’s support for those students lagging behind or dropping out.

Regarding the first aspect, almost 30 per cent and 60 per cent of students from rural public (Spanish) and rural public EIB schools reported having an indigenous language as mother tongue, respectively. In rural public (Spanish) schools almost 13 per cent of the teachers have a native language as mother tongue, while in the case of rural public EIB schools this figure is almost 38 per cent. These results show that not every EIB school in the sample has a teacher who is a native speaker of the language spoken by most of the students, which surely limits the implementation of a truly EIB programme in those schools.

It seems clear from previous research that the issue of EIB education requires further attention. Therefore, as part of the School Survey we administered a socio-linguistic questionnaire to the head teachers, teachers and students in bilingual contexts. Specifically in the case of teachers, we administered the socio-linguistic questionnaire if they (1) had at least one Young Lives child reporting a native mother tongue and (2) reported using a native language to address students in the school (either inside or outside the class).

About 44 teachers in the sample (13.3 per cent) responded to the socio-linguistic questionnaire. Of these, 20 reported having at least one child speaking a native mother tongue. In addition, almost the majority of teachers had students speaking Quechua. Of these 44 teachers, 12 taught in public urban schools, 15 in rural public (Spanish) schools and 17 in rural public EIB schools. In rural public (Spanish) schools, four teachers (26.7 per cent) reported speaking in a native language within the school. In rural public EIB schools, three of the 17 teachers (17.7 per cent) reported doing the same.

We collected teachers' views on linguistic aspects of learning and in which language students learn better. Almost 92 per cent of teachers reported that children learn better when they are taught both in Spanish and the native language, rather than in one single language and all the teachers responded that it is better to teach in Spanish and the native language together. Further, we asked about the usefulness of learning to read and write in the native language (Quechua). Table 11 reports the percentage of teachers who responded 'yes' to each of the questions.

Table 11. *Teachers' perception of native languages**

For what purposes is it useful to read and write in (native language)?	Urban Public (N=12)	Rural Public (Spanish) (N=15)	Rural Public EIB (N=17)
To keep native languages alive	100.0	93.3	88.2
To improve employment opportunities	50.0	60.0	70.5
To improve educational opportunities	58.3	66.6	88.2
To learn Spanish more easily	50.0	53.3	56.2
To learn better about one's culture	100.0	93.3	82.3
To communicate better with family and/or friends	100.0	93.3	76.4
For nothing	0.00	0.00	5.8

Source: Young Lives School Survey – Peru

* Percentage of teachers who responded 'yes' to each of the questions regarding usefulness of the native language

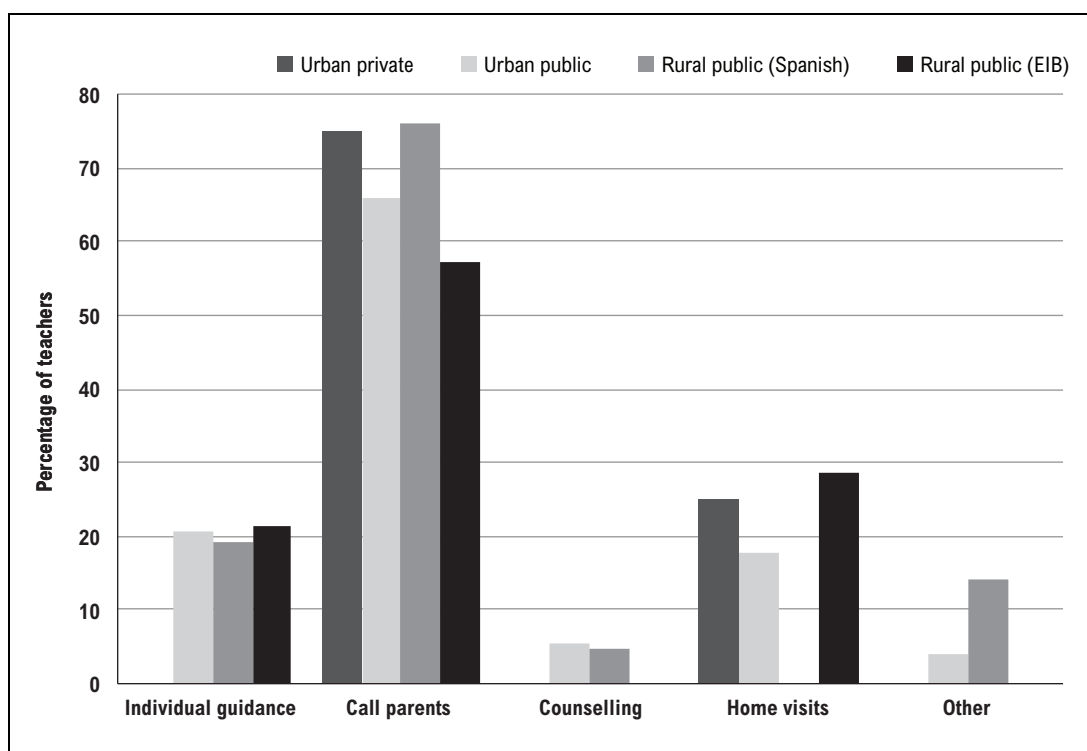
The information presented here is only a sample of the type of information that we have collected concerning schools' responsiveness in terms of availability of language instruction. The data bases contain information for further study of the implementation of the EIB programme in different contexts, including information on the main barriers faced by the programme. From the descriptive statistics presented above, one initial barrier appears to be the fact that many teachers in EIB schools (and teachers in other types of school but attended by students with an indigenous mother tongue) do not speak the local indigenous language, and ideally they should acquire both oral and literacy proficiency in it (and teach students about this). Nevertheless, teachers seem to have a positive attitude towards teaching in both Spanish and indigenous languages.

In terms of this issue, the school survey in Peru had a qualitative sub-component exclusively focused on a sub-sample of Young Lives indigenous students, aimed at understanding how they experience schooling in different educational contexts. The qualitative sub-component analyses how appropriate or responsive is the education for indigenous students in different educational contexts and at bilingual (EIB) schools, trying to understand how schools adjust to indigenous students' needs and potential. Preliminary results of the qualitative sub-component are reported in section 5 of this report.

In the case of the school's responsiveness to students' academic needs, we asked teachers if they considered drop-out to be a problem and, if so, we asked them about the actions taken by the school to help students in such situation. We found that 36.3 per cent of the interviewed teachers agreed that students' drop-out was a problem in their school. According to the type of school, 13.8 per cent of teachers in private urban schools, 36.7 per cent of teachers in public urban schools, 43.5 per cent of teachers in rural public (Spanish) schools, and 44.8 per cent of teachers in rural public EIB schools said that school drop-out was a problem in their institutions.

Most of the teachers who regarded student drop-out as a problem reported that they (or the school) dealt with that situation by contacting students' parents to inform them about the problem and to find out the reason for leaving school. There were some differences, however, between survey groups. Teachers in private schools and rural public schools were more likely to report that they called parents than teachers in urban public and EIB schools. Additionally, within the rural context, teachers in Spanish schools are more likely to call the parents than their colleagues in EIB schools. The other two measures taken by schools were home visiting and individual guidance, but with less frequency.

Figure 1. *Teachers' responses to the needs of students who are at risk of dropping out of school (self-reported)*

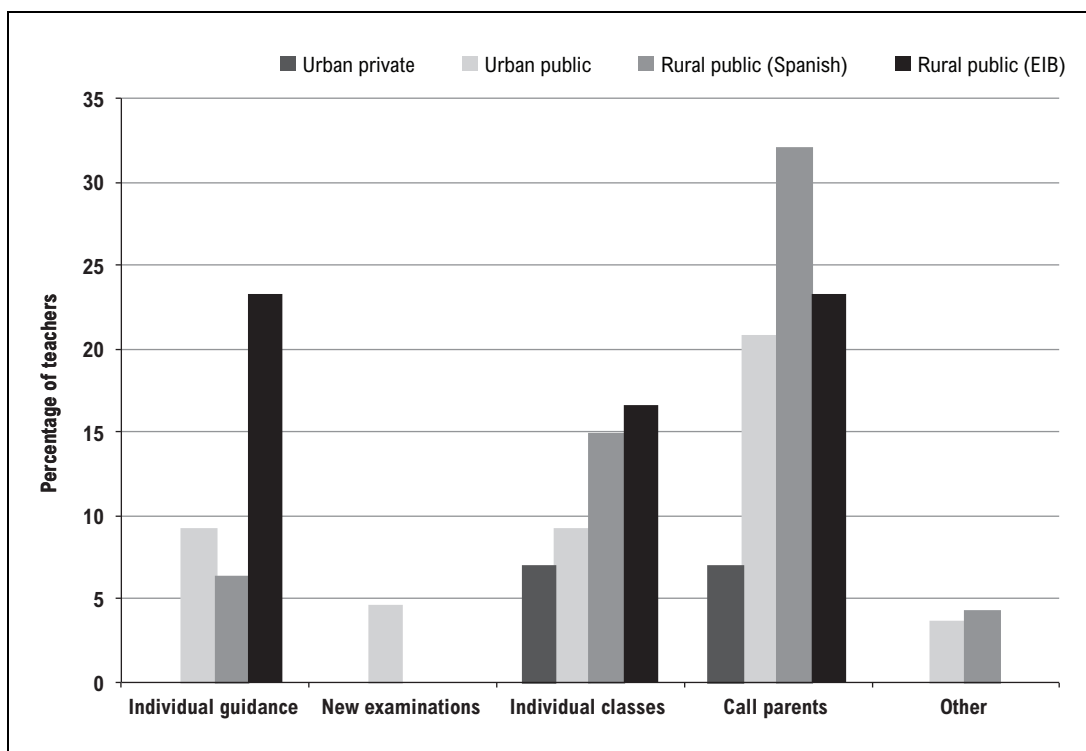


Source: Young Lives School Survey – Peru

We also asked teachers about the actions taken by them or by the school when they detected a student who was at risk of failing the entire year. Figure 2 presents the results. Similar to the responses when detecting a student at risk of dropping out school, calling parents is the preferred policy for the four types of schools.

School policies related to students' academic progress and drop-out have not yet been extensively studied in the Peruvian context, and the Young Lives School Survey constitutes a source of information for exploration of this issue. From the preliminary results presented above, it seems to be the case that when faced with students' problems, schools preferred to inform the parents so that the family can deal with the situation, instead of developing strategies within the school to help the students. This however could be contrasted with actual observations at schools.

Figure 2. Responsiveness of teachers to those who are at risk of failing the year



Source: Young Lives School Survey – Peru

Outcomes

In this section we report some results for three different types of outcome: (a) students’ attitudes and feelings towards school; (b) over-age students; and (c) students’ achievement in mathematics and communication (language arts).

Outcomes: attitudes and feelings

The school-satisfaction indexes were constructed on the basis of the information provided by two different groups of questions: students’ attitudes towards school and students’ sense of belonging. Each group of questions contained items which had three options (‘almost never’; ‘sometimes’; and ‘yes, almost always’). To construct the index, we allowed each item to adopt discrete values (1, 2, or 3) depending on the answer and the direction of the question (positive or negative). The final index is the sum of the item values.

To measure the internal consistency of each of these two groups of questions, we performed the Cronbach alpha test. For attitudes towards school, we obtained alpha statistics of 0.47, which is low. For further analysis, options would be transforming the scale (e.g. using a Rasch score of factor analysis), constructing factors from the data, or considering a sub-set of items (see Cueto and Secada 2004 for another study using a similar scale). In the case of a sense of belonging, we obtained an alpha of 0.59, which is barely at an acceptable level, so caution should also be exercised (see Cueto, Guerrero, Sugimaru and Zevallos 2010 for an analysis of sense of belonging for Peru)¹⁵. In both cases reliability is limited mostly by the high responses of students. Indeed, Table 12 presents the two indexes by type of school.

¹⁵ Tables containing the results for the Cronbach’s alpha tests are presented in Annex C.

Indexes are standardised according to the maximum possible score for each group of questions, so that the index adopts positive values ranging from 0 to 1. Overall, these two indexes are very similar across the four types of school, with students showing positive attitudes towards school and a high sense of belonging.

Table 12. *School-satisfaction indexes*

	Urban		Rural	
	Private (N=180)	Public (N=1126)	Public (Spanish) (N=253)	Public EIB (N=190)
Students' attitudes towards school	0.83	0.84	0.81	0.86
Students' sense of belonging	0.84	0.82	0.77	0.80

Standardised values according to the maximum possible score per question.
Source: Young Lives School Survey – Peru

To extend the description of school satisfaction, Table 13 reports the percentage of children who responded the option 'Yes, almost always' in each of the questions listed¹⁶ corresponding to attitudes toward the school. Results show, on the one hand, a greater proportion of students from rural public EIB schools reporting feeling happy, being calm and enjoying being at school. In spite of this, a greater percentage of these students also reported feeling bored and nervous, in contrast with students from the remaining types of school. Overall, results by type of school appear to be mixed.

Table 13. *Students' attitudes towards school**

	Urban		Rural	
	Private (N=180)	Public (N=1126)	Public (Spanish) (N=253)	Public EIB (N=190)
Do you feel happy?	67.2	78.5	74.7	87.8
Do you feel bored?	13.3	13.0	19.8	22.8
Do you feel like having fun?	72.8	75.6	63.5	79.5
Do you feel nervous?	11.7	14.7	22.2	20.1
Do you feel calm?	62.2	67.3	64.0	81.0

Source: Young Lives School Survey – Peru

* Percentage of students who responded 'Yes, almost always' to each of the questions.

Regarding sense of belonging, Table 14 presents the percentage of students who responded 'yes, almost always' to each of the questions listed per type of school.

¹⁶ The remaining options for response were 'almost never' and 'sometimes', obtained from the Likert satisfaction scale. The same criteria are applied in tables that continue hereafter.

Table 14. *Sense of belonging**

	Urban		Rural	
	Private (N=180)	Public (N=1126)	Public (Spanish) (N=253)	Public EIB (N=190)
Do you feel like an outsider (or left out of things)?	8.9	16.1	27.7	40.5
Do you make friends easily?	57.8	56.7	49.8	70.0
Do you feel like at home?	56.2	65.3	59.7	66.3
Do you feel awkward and out of place?	12.2	14.7	28.4	32.3
Do other students seem to like you?	44.4	52.6	54.9	65.3
Do you feel lonely?	8.9	18.2	23.3	29.5
Do you prefer to be absent?	7.2	8.7	12.4	14.2
Do you often feel bored?	5.6	8.0	16.6	14.2

Source: Young Lives School Survey – Peru

* Percentage of students who responded 'Yes, almost always' to each of the questions.

In general terms and as mentioned above, students seem to have a strong sense of belonging. However, when we look at the results disaggregated by items, the picture is not so clear, especially within the EIB schools. A greater percentage of students from EIB schools agreed with the 'positive sense' questions (make friends easily; feel like at home; and other students seem to like you). Yet a greater proportion of the same group of students responded that they felt like outsiders, felt awkward and out of place, felt lonely, preferred to be absent and often felt bored. In this way, preliminary results encompassing sense of belonging seem to be mixed. One of the options for such results is that in spite of the care taken to administer the surveys, many students in EIB schools fell within a response set of agreeing with all questions.

As part of the School Survey, we also collected information on students' academic self-concept (variable definition provided earlier in this document). In this report we present information on students' academic self-concept in two subject areas: Communication (Language Arts) and Mathematics. For each subject, questions include seven different items measuring self-concept about performance, interest and pleasantness, among other concepts. Similar to the school-satisfaction questions, each of the items is scored on the basis of the Likert scale, adopting discrete values 1, 2, or 3.

Table 15 shows the resulting indexes of academic self-concept for Communication (Language Arts) and Mathematics by type of school. Students from rural public EIB schools seem to have the highest self-concept for Language Arts, whereas students from private urban schools appear to have the lowest score across the four types of school. These same results are also valid for self-concept indexes regarding Mathematics.¹⁷

¹⁷ Cronbach's alpha for academic self-concept on Language Arts and Mathematics is 0.74 and 0.84, respectively.

Table 15. *Academic self-concept indexes*

	Urban		Rural	
	Private	Public	Public (Spanish)	Public EIB
	(N=180)	(N=1126)	(N=253)	(N=190)
Language Arts	0.85	0.89	0.89	0.92
Mathematics	0.86	0.89	0.88	0.90

Standardised values according to the maximum possible score per question.
Source: Young Lives School Survey – Peru

Tables 16 and 17 report the percentage of students who responded ‘yes, almost always’ in each of the items for Communication (Language Arts) and Mathematics, respectively.

Table 16. *Academic self-concept – Communication (Language Arts)**

	Urban		Rural	
	Private	Public	Public (Spanish)	Public EIB
	(N=180)	(N=1126)	(N=253)	(N=190)
You like Communication classes	71.7	80.2	85.8	87.9
You are good in Communication classes	45.0	55.6	62.9	78.4
Communication classes are interesting for you	75.0	83.1	81.0	89.0
You enjoy doing work in Communication classes	61.7	76.0	73.0	81.1
Work in Communication class is easy for you	52.2	64.5	62.5	78.4
You look forward to Communication classes	56.1	68.4	73.1	79.5
You learn things quickly in Communication classes	60.0	65.1	67.6	72.6

Source: Young Lives School Survey – Peru
* Percentage of students who responded ‘Yes, almost always’ in each of the questions.

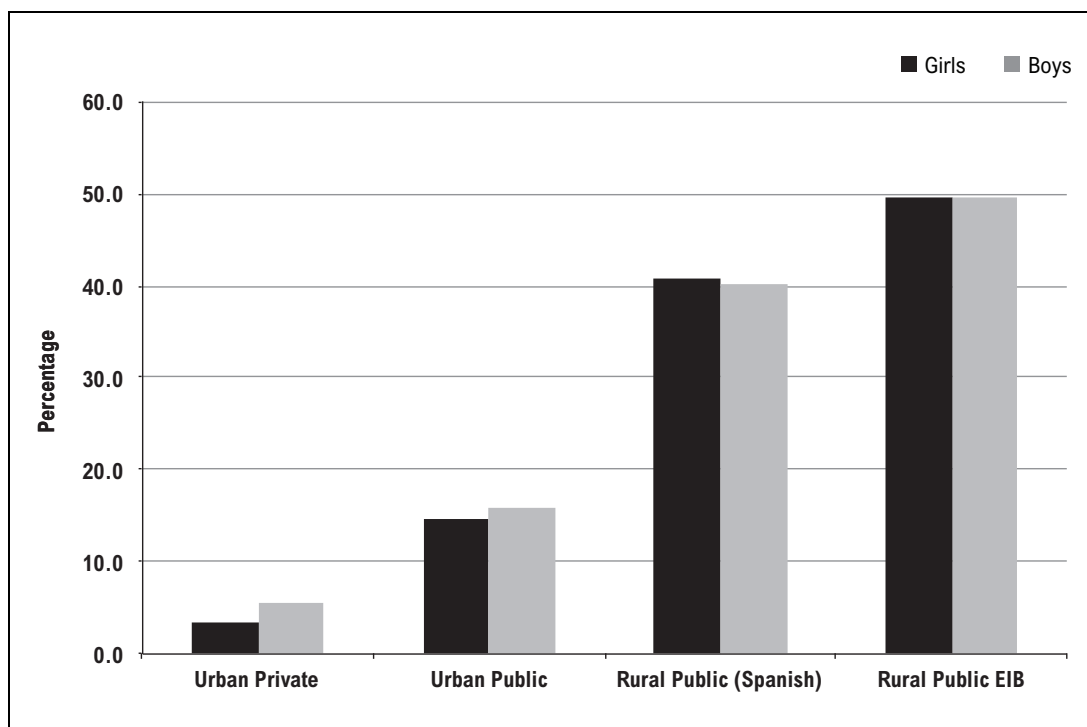
Table 17. *Academic self-concept – Mathematics**

	Urban		Rural	
	Private	Public	Public (Spanish)	Public EIB
	(N=180)	(N=1126)	(N=253)	(N=190)
You like work in Mathematics class	76.7	81.9	76.2	87.9
You are good in Mathematics classes	49.7	59.3	67.2	72.6
Mathematics classes are interesting for you	75.6	83.3	81.0	78.4
You enjoy doing work in Mathematics classes	67.2	76.2	71.9	77.4
Work in Mathematics class is easy for you	57.2	64.3	62.9	66.3
You look forward to Mathematics classes	64.3	75.8	70.4	76.3
You learn things quickly in Mathematics classes	57.8	68.1	63.6	64.2

Source: Young Lives School Survey – Peru
* Percentage of students who responded ‘Yes, almost always’ to each of the questions.

Figure 3 presents the percentage of over-age grade students by sex and type of school. The pattern clearly shows higher over-age rates in rural schools, especially in EIB and lower rates in private schools. There are practically no differences between boys and girls in rural settings and the differences in urban schools are quite small, although boys are more likely to be over-age.

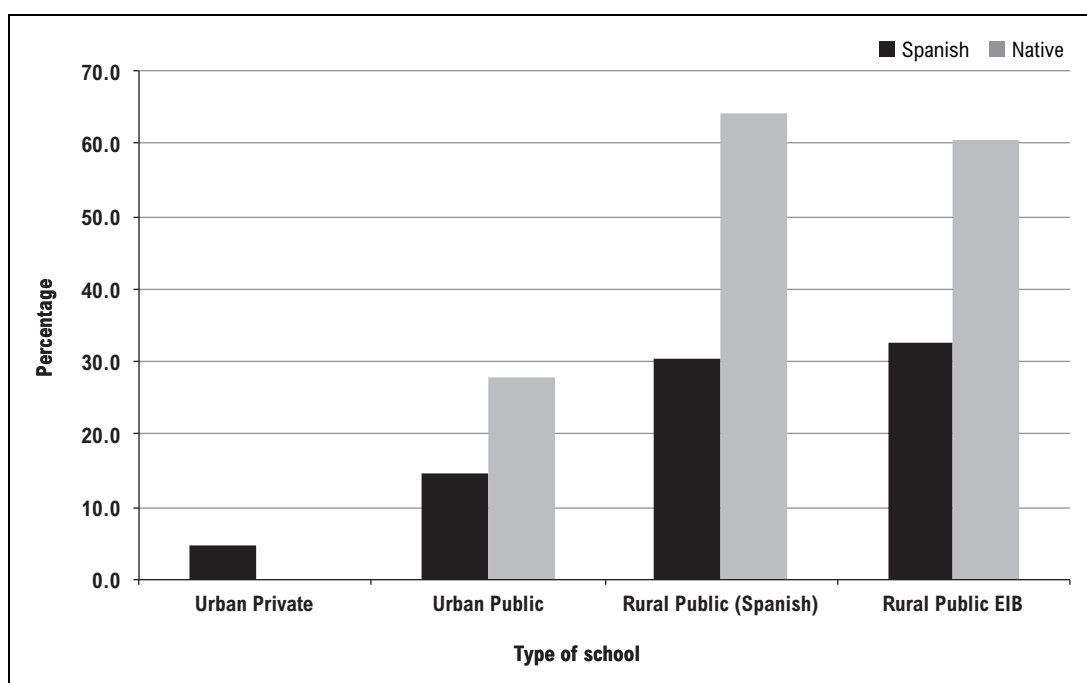
Figure 3. *Percentage of over-age students by gender and type of school*



Source: Young Lives School Survey – Peru

Figure 4 reports the percentage of over-age students by mother tongue and type of school. Students speaking a native language are more likely to be over-age in all types of school, except in private schools where there are almost no indigenous students.

Figure 4. *Percentage of over-age students by mother tongue and type of school*



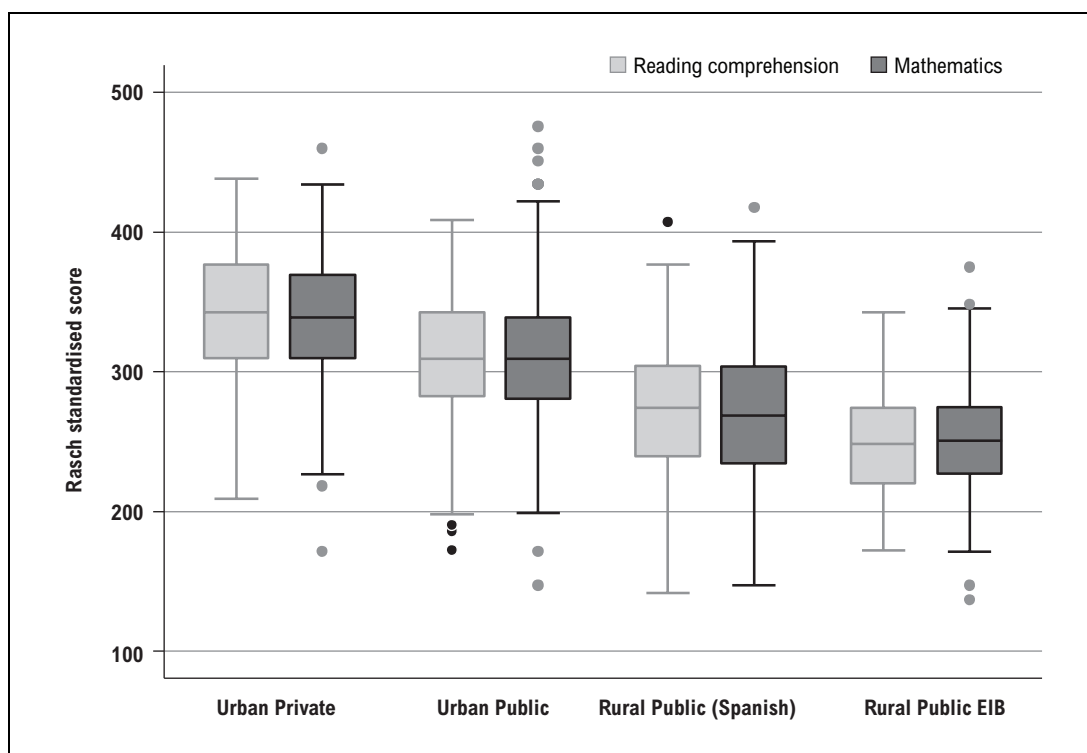
Source: Young Lives School Survey – Peru

In our sample, and nationally, almost no students have dropped out by the age of 10. However, other indicators linked with learning, such as over-age students, show gaps against rural schools, particularly EIB. Within these schools, those students with indigenous mother tongue are at greater risk of being held back. We turn now to more precise measures of achievement.

Figure 5 shows the distribution of the Rasch scores for Reading Comprehension and Mathematics tests by type of school. Tests were standardised with mean 300 and a standard deviation of 50. For Reading Comprehension, the minimum and maximum values were 141.88 and 438.14 respectively, whereas for Mathematics, the lower value was 136.74 and the greater value was 475.36. We were only able to place students in a single scale from third to fifth grade, due to the small number of students who took the examinations in second and sixth grade (there were no children in first grade).

On average, for both Reading Comprehension and Mathematics, students from private schools perform better than students from the remaining types of schools. The average score in Reading Comprehension for private urban schools is 338.37, and for Mathematics it is 339.56. On the other hand, results of students from rural public EIB schools are, on average, lowest. In these schools, the average Reading Comprehension score is 250.87, and for Mathematics it is 251.14.

Figure 5. *Distribution of the Rasch scores for Reading Comprehension and Mathematics Tests by type of school*



Source: Young Lives School Survey - Peru

Table 18 shows the proportion of students for each type of school pertaining to the top quintile of the Reading Comprehension and Mathematics test-score distributions.

Table 18. *Percentage of students in the top quintile of the distribution of tests scores by type of school*

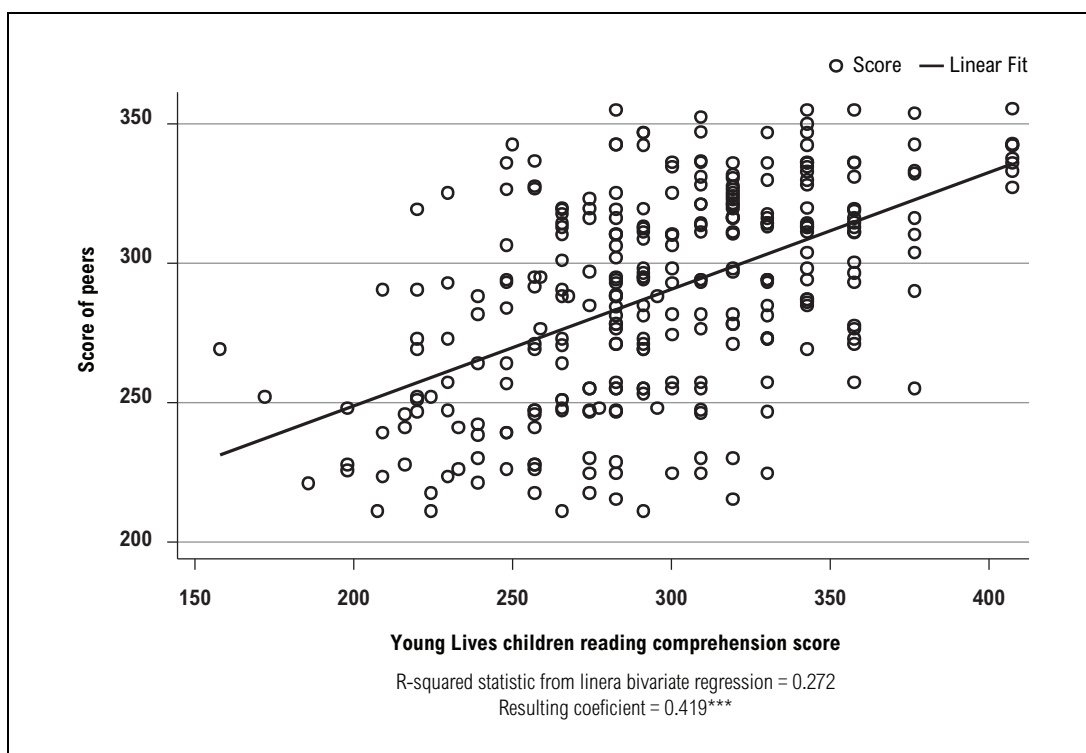
	Urban		Rural	
	Private	Public	Public (Spanish)	Public EIB
	(N=177)	(N=1110)	(N=250)	(N=185)
Reading Comprehension	39.55	16.80	4.36	0.00
Mathematics	41.57	21.57	4.78	1.60

Source: Young Lives School Survey – Peru

As expected, private schools have the highest percentage of students in the top quintile, followed by urban public schools. In contrast, rural schools have much lower percentages, particularly EIB schools, with no students at the top quintile in reading comprehension.

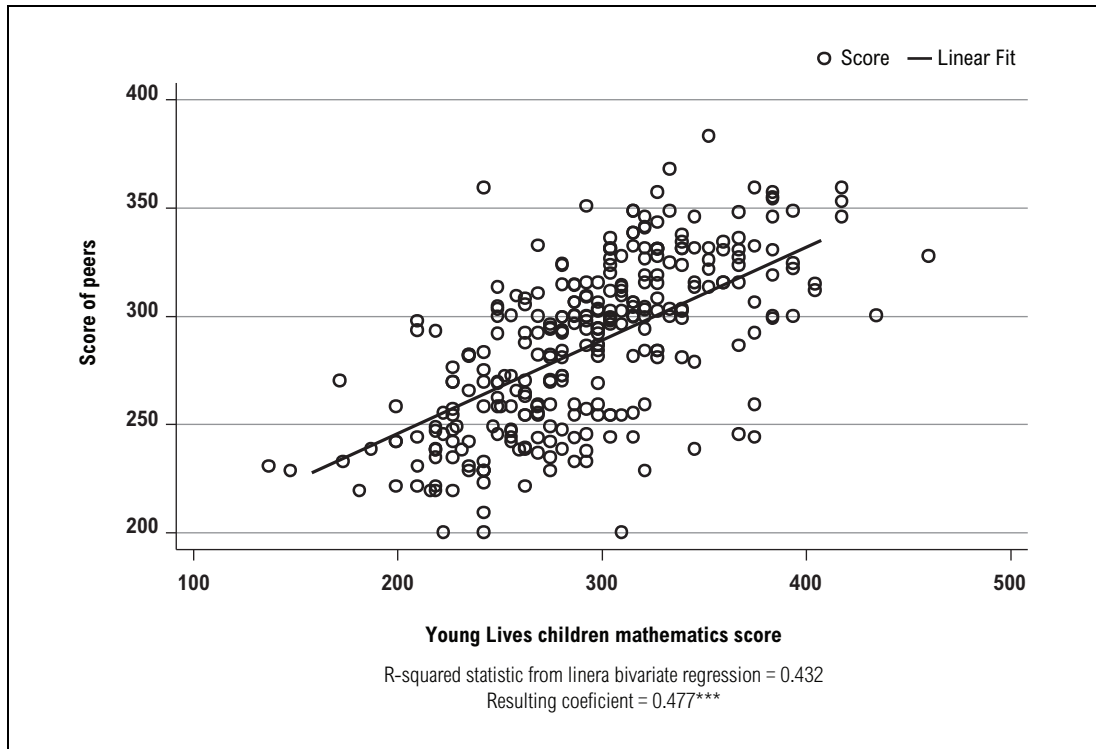
Lastly, we provide some information about Young Lives children and their peers. The issue is whether Young Lives children study with peers who more or less achieve at the same level, or if classrooms are composed of students with wide variations in achievement. There is some indication from previous research that the latter would be better for overall achievement, while the former would in a way set a lower threshold for what students could learn in a given classroom. We tackle this issue in the following two figures.

Figure 6. *Correlation between the scores of Young Lives children and the scores of their peers (Reading Comprehension)*



Source: Young Lives School Survey – Peru

Figure 7. *Correlation between the scores of Young Lives children and the scores of their peers (Mathematics)*



Source: Young Lives School Survey – Peru

On the horizontal axis we placed the score of Young Lives children, while on the vertical axis we placed the average of the peers of the Young Lives child (for fourth grade children only). Figure 6 shows the results for Reading Comprehension, while Figure 7 shows the same for Mathematics.

Overall, we find that the achievement of Young Lives children is indeed positively associated with that of their peers in both subjects. This in fact forms a sort of ‘tracking’ of students, which could be a relevant line of research with this data base (e.g. comparing groups with more mixed achievements with more homogeneous groups).

5. Qualitative sub-study on indigenous children and bilingual education¹⁸

As indicated earlier, the design of the School Survey in Peru also includes a qualitative sub-component that is exclusively focused on a sub-sample of Young Lives indigenous students, seeking to know how they experience schooling in different educational contexts. More specifically, the qualitative sub-study analyses (1) how Young Lives indigenous children adapt to school; (2) how schools respond to or accommodate the characteristics and educational needs of indigenous children; (3) what are the educational expectations of Young Lives indigenous children about their education, as well as their families' and teachers' expectations; and (4) how the EIB programme is implemented in school. This section presents the methodology and some preliminary results of this qualitative sub-component.

5.1. Methods

The methodological design of this component supposes a case study that will describe and compare the schooling experience of indigenous children in EIB and non-EIB schools.

5.1.1. *Sample design*

Sample design: selection of schools and locations

The qualitative sub-study was conducted in a sub-sample of the main quantitative component. In order to identify the qualitative sample, we looked for indigenous students within the quantitative sample who met two requirements: (1) the child's mother tongue had to be a native language, and (2) the child's mother had to have a native mother tongue. The selection took into consideration the four main types of school previously defined: Private Urban, Public Urban, Public Rural, and Public Rural EIB. There were no indigenous students in the private schools. In terms of the other survey groups, the regions of Ancash and Ayacucho had instances of all three.

In order to select one of the two regions, additional information about the EIB schools in Ayacucho and Ancash was sought from the Regional Education Board (DRE) of each location. We found that the schools in Ayacucho were not applying the EIB programme, while the schools in Ancash did. In consequence, the region of Ancash was selected. Furthermore, one school per group (types of school mentioned above) was selected intentionally. The selection of sample children within those schools was determined by the desire to obtain a balance between boys and girls.

To collect additional information in those schools, we included some cases of students whose mother tongue was Spanish but whose mothers had Quechua as their mother tongue. We considered that the family context in which those students lived was indigenous.

¹⁸ This qualitative sub-study was led by Elizabeth Rosales under the supervision of Santiago Cueto and Gabriela Guerrero from GRADE. We would like to thank Natalia Streuli and Vanessa Rojas for their help in the design of the study, Mario Ramirez for assistance during the preparation of manuals and data collection, Silvia Velasco and Diana Marchena for data collection, Paola Sarmiento for the data analysis, and Alexandra Cussianovich for assistance in the development of this report.

Moreover, to obtain information from an urban context in a big city, two cases from Lima with this characteristic were included. The final sample was composed of a total of 15 cases. For eight of these children, Quechua was their mother tongue.

Sample design: community and school characteristics

The study was conducted in four different sites. The following is a brief description of each site from the information gathered in the Young Lives community survey in 2009. The information regarding the school was gathered during the School Survey through the Head Teacher Questionnaire.

Huaylas 2

Huaylas 2 is a rural village located in the north of the Andes, in the Ancash region. It is about 90 minutes' walk from the district capital and about 120 minutes to the provincial capital by car. The village has 700 inhabitants and about 102 households. Some are Quechua speakers, while others are bilingual (Spanish and Quechua). The main activities in this village are agriculture, cattle raising and carbon mining in a small local site. Huaylas 2 inhabitants migrate seasonally to a nearby province to work as agricultural labourers.

In terms of educational services, Huaylas 2 has a PRONOEI (non-formal preschool programme), an elementary school and a high school. To pursue higher education, children would need to go to the capital of the province.

The school at Huaylas 2 (School 1) is a public rural school in which the EIB education programme is applied. It is located in the centre of the community, next to the main square. It has both elementary and high-school levels,¹⁹ and it serves boys and girls. The total number of students in the primary level is 77. This is a full-grade school²⁰ with a total of six sections, one for each grade and a total of six teachers. Additionally, the school has one auxiliary teacher and two administrative staff members.

In terms of infrastructure, the school at Huaylas 2 has adobe walls, corrugated metal roofs and concrete floors. It also has three classrooms built of plywood, corrugated metal roofs and earth floors. Regarding basic services, it has electric light and internet connection. Water supply comes from a river or spring, and the lavatories have a non-treated cesspool. This school also has different areas for particular activities, such as a library, a kitchen and a student dining room, as well as an office for the head teacher.

The school implements a student breakfast service provided by the central government, as well as a student lunch service supported by the provincial municipality. In addition, it has access to the 'One Laptop per Child' programme.

Information from this school was gathered from five pupils (two girls and three boys). All of them had Quechua as their mother tongue.

Huaylas 3

Huaylas 3 is a rural village located in the north of the Andes, in the Ancash region. It is about 45 minutes' walk from the district capital and about 90 minutes by car to the provincial

19 Although some of the studied schools have both elementary and high-school levels, the information contained here relates only to elementary provision.

20 The term 'full-grade school' refers to schools where students are taught in separate classes according to grade, with an exclusive teacher in each classroom.

capital. It has 1,500 inhabitants, making up around 400 households. Some are Quechua speakers and some are bilingual (Spanish and Quechua). People are organised as a peasant community and they are dedicated mainly to agriculture and cattle raising. There is a seasonal migrating process; people leave the village to find work elsewhere.

In terms of basic services, piped water and electricity are available in the households. There is no sewerage system, but each family has its latrine outside the house; 85 per cent of the households use simple latrines, while 15 per cent use toilets.

In terms of educational services, the village has a pre-school and elementary school, as well as a PRONOEI (non-formal pre-school programme). Educational services available by 2009 included the literacy programme PRONAMA. To pursue high-school education, children walk 45 minutes to the district capital or to the school at Huaylas 4.

The school at Huaylas 3 (School 2) is a public elementary rural school. It is located at the base of one of the mountains where the community is settled, 200 metres away from the main road. It serves both boys and girls. The total number of students in primary is 78. This school has one section per grade from first to fourth grades, and one classroom for fifth and sixth grade students; this is why it is considered a multi-grade school. It has a total of five teachers, one for each section. There are no administrative personnel, and the third grade teacher is also the head teacher.

In terms of infrastructure, the school is made from adobe and has corrugated metal roofs and concrete floors. It has some basic services, such as electric light, a piped spring-water supply and treated cesspool for the lavatories. The school also has an office and a kitchen.

It benefits from two public programmes provided by the central government: the breakfast service and the One Laptop per Child programme. It is also enrolled in the teacher-mentoring activities of the Learning Outcomes Strategic Programme (PELA) conducted by the Education Ministry. However, teachers have complied with the ruling of SUTEP (the Teachers' Union) that no one can enter the classrooms to make observations, and they have denied access to teacher mentors. In the same connection, it is important to note that School 2 was the one that displayed highest resistance during the data gathering. Only the head teacher collaborated with the study (and very reluctantly). It was not possible to perform either all the planned observations or the focus group.

Three cases were studied at this site, two girls and one boy. One of the girls had Quechua as her mother tongue.

Huaylas 4

Huaylas 4 is an urban village in the north of the Andes, in the Ancash region. It is located 20 minutes' walk from the district capital and about 15 minutes by car to the provincial capital. The village has 299 inhabitants. Some are Spanish and Quechua speakers, while others speak only Spanish. People are mainly dedicated to agriculture and cattle raising. In terms of basic services, the village has electricity and access to the public water network and sewerage system. Also, there are public and private telephones, mobile phone signal and an internet booth.

The village has educational services for the three main levels: pre-school, elementary and high school, and there is also a PRONOEI (non-formal pre-school programme). Higher education is offered in the provincial capital, where technical institutes can be found.

The school at Huaylas 4 (School 3) is a public urban school with elementary and high-school levels serving both boys and girls. It is located in the centre of the community, a block away from the main square. The total number of students in primary is 227, in a total of 11 sections: two sections per year, except for the second grade, which has only one section. Given that it is a full-grade school, it has a total of 11 teachers, one for each section. Additionally, the school has a librarian and five people working as administrative staff.

The school walls are made of brick and it has corrugated metal roofs and concrete floors. In terms of basic services, it has electric light and a landline telephone. Water is supplied from a well and the lavatories have a treated cesspool. The school has some areas for particular activities, such as a library, a laboratory, a sports ground and an auditorium, as well as an office for the head teacher. Students have school breakfasts on a daily basis and this service is managed by them.

Five cases (two girls and three boys) were studied at this school. Two of the boys were Quechua speakers.

Ate

The Self-Managed Urban Community of Ate is a shanty town situated in the eastern part of Lima. It is about 25 minutes from the district capital and about a couple of hours from the city centre and provincial capital, in both cases by public transport. It is organised in zones and the study was conducted in one of them, which has thousands of inhabitants.²¹ One of the main activities is commerce, and some people migrate to other localities for work throughout the year (there is no seasonal migration pattern). Ate was founded in 1984 by migrants from the central Andes, forcibly displaced by political violence, and by some urban inhabitants of slum areas of Lima. It suffered from the strong and violent presence of Shining Path at the end of the 1980s and the beginning of the 1990s.

The households have electricity, home phones and cable TV, as well as access to public water and sewerage services and toilets. The community has public telephones, internet booths and mobile signal. It continues to grow each year with new incursions by migrants, whose houses are the most recently constructed and do not have basic services.

In terms of educational services, there are several schools in the neighbourhood, including public and private pre-schools, public and private elementary and high schools, as well as Wawa Wasi (day care), PRONOEI (non-formal pre-school), technical institutes, a university and a CETPRO (public centre of technical education).

The school at Ate (School 4) is a full-grade public urban school. It has elementary and high-school levels and serves boys and girls. It is located in the middle of one of the hills where the community is situated, 300 metres from a main road. The total number of students in primary is 520 and it has a total of 18 classrooms, three per year from first to sixth grades, and 19 teachers. Additionally, it has a librarian and three people serving as administrative staff.

In terms of infrastructure and basic services, the school is entirely built of brick and concrete (walls, roofs and floors), and it has electric light, landline telephone, and access to the public water network and sewerage services. Likewise, it has several areas for particular activities,

²¹ The information about the population of the zone where the study was conducted is imprecise; the variation within the two rounds of data collection in previous Young Lives surveys is large.

such as a library, a technological resources centre, a playground and a vegetable garden, as well as an office for the head teacher. Furthermore, the school manages its own student breakfast service.

Two cases from this site were studied, both girls with Quechua as their mother tongue.

5.1.2. Variable definitions

The four areas of inquiry for this component were developed according to the qualitative research questions stated at the beginning of section 5. One of them, concerning indigenous students' process of adaptation to the school, included topics based on student perceptions and interactions with others. Regarding the responsiveness of the school to the indigenous students' characteristics, the topics of inquiry were focused on the teacher and instruction. The inquiry area of educational expectations included not only ideas about high school, but also the factors promoting or limiting educational transitions. Finally, the area of inquiry about the EIB programme focused on the use of and attitudes towards languages and the implementation of central aspects of the EIB programme, such as traditional knowledge and curriculum diversification. The areas of inquiry and its topics are summarised in Table 19.

Table 19. *Areas of inquiry and methods*

	Interviews with indigenous students	Interviews with main care givers	Focus groups with teachers	Classroom observations
Adaptation to school				
Perceptions about school	X	X		
Relationships between teachers and students	X	X		X
Relationships between students	X	X	X	X
Adapting to school	X	X		
Students' support network	X	X		
Responsiveness of the school to the indigenous students				
Perceptions about teachers	X	X		
Teaching practices	X		X	X
Language of instruction	X	X	X	X
Educational expectations				
Expectations about high school and further education	X	X		
Factors that promote or limit conclusion of primary/ attending high school	X	X		
Implementation of the EIB programme				
Attitudes towards EIB	X	X	X	
Attitudes towards languages (Quechua and Spanish)	X	X	X	
Implementation of the EIB (language, traditional knowledge, and curriculum diversification)	X		X	X

5.1.3. Instruments

In order to obtain a better and deeper understanding of indigenous students' schooling experience, instruments were designed to consider different sources of data, for later triangulation of the information. For this purpose, four instruments were developed: an interview with the caregiver of the indigenous student; an interview with the indigenous student; a focus group with teachers; and a school observation.

Interview with caregiver

The main objective of this instrument was to collect information about the schooling experience of the child from the perspective of the caregiver/mother. The individual administration instrument aimed to explore the following themes:

1. Perceptions of the caregiver about the school.
2. Caregiver's involvement and participation in the school.
3. Child's peer relationships and activities.
4. Perceptions about the teacher and the relationship with the child.
5. Adaptation process of the child to school and support network to deal with difficulties.
6. Educational expectations of caregivers for their children, and factors that promote or limit the educational transitions.

The instrument had two similar versions: for caregivers at non-EIB schools and for caregivers at EIB schools. The first one had 24 questions, while the second had 28, since the EIB version had an additional topic of inquiry. In addition, there were Spanish and Quechua versions, so that the interview could be conducted in the language of preference of the caregiver. Time of administration was approximately one hour.

Interview with students

This instrument had as its main objective to obtain a detailed description of children's individual situation, from their own point of view, in order to understand their schooling experience. Furthermore, this student-focused instrument allowed us to inquire the following:

1. Children's perceptions about school.
2. Peer relationships, activities shared, and language of communication.
3. Children's perceptions about the teacher, teaching language, and inclusion of traditional knowledge in school.
4. Adaptation of the child to the educational context and support sources in case of difficulties.
5. Children's educational expectations and elements promoting or limiting their educational transitions.

This instrument also had two similar versions: one for children at non-EIB schools, with 22 questions, and another for children at EIB schools, with 26 questions. This guide had Spanish and Quechua versions so that the interview could be conducted in the child's language of preference (one of the interviewers was bilingual in Quechua and Spanish, so it was not necessary to have a translator). In addition to the interview, drawing was included as a technique for children to express their perceptions of school. During field work, what

worked best was to conduct interviews simultaneously, while the children drew. Time of administration was approximately of one hour.

Focus group with teachers

The purpose of the teachers' focus group was to obtain a detailed description of the situation of indigenous children, in order to understand how teachers respond to their needs in EIB and non- EIB schools. More specifically, it allowed exploring the following:

1. Teachers' perceptions about students.
2. Children's intergroup relationships.
3. Characterisation of Quechua children.
4. Adaptation of teaching practices to fit the needs of indigenous children.
5. Difficulties, resources and support available to teachers for teaching indigenous children.

The guide for the teachers' focus groups had two similar versions: for teachers at non-EIB schools and for those at EIB schools. Administration time was around one hour and a half.

School-observation guide

In the design of the school-observation guide we took some ideas from the classroom observation method developed by the Young Lives qualitative-research team. Additionally, it included recess time as a time for observation.

This observation aimed to describe the dynamics of interaction of indigenous students, both in the classroom and in the playground, as well as identifying teaching practices oriented to their particular characteristics. Likewise, this instrument enabled to explore what follows:

1. Interaction dynamics between children and teachers.
2. Pedagogical practices.
3. Interaction dynamics between indigenous children and their peers.
4. Physical environment of the school.
5. Children's and teachers' responses to the observation situation.
6. Moods, perceptions and interpretations of teachers and students.

This instrument was planned to be administered in four sessions for each classroom selected. However, the number of observations relied on the collaboration of the class teachers and head teachers. In consequence, we were able to observe between two and three sessions per classroom. Each observation session was conducted during the school day.

5.1.4. Procedures

Pilot study

The pilot study took place in September 2011 at a rural multi-grade school in Ancash, in order to test the adequacy of the instruments. It was administered by a local bilingual fieldworker and two members of the Young Lives team.

The procedures and questions of the interview guides went smoothly in Quechua and Spanish. On the other hand, the focus-group guide did not work as expected, and thus some changes were made and, after that, it was piloted at an urban school in Lima. After the changes were incorporated, the focus-group guide worked fine.

Training of fieldworkers

The training took place from 17 to 19 October and on 21 October 2011 (a total of three days) for two fieldworkers, and was aimed at presenting and practising the administration of the instruments. Both fieldworkers had participated in Young Lives previous qualitative rounds.

During training, we worked with the fieldworkers in order to make them familiar with the instruments and help them to understand their objectives. Also, they practised the administration of the instruments through role playing (for the interviews and focus groups) and video observation (for the class observation). These helped them to become familiar with the equipment before proceeding to field work (digital recording machines, digital cameras and netbooks) and with the coding system and templates used for data management. Training was monitored by GRADE staff.

In order to fulfill the training objectives, we elaborated three manuals (available in Spanish from the authors): (1) presentation of the study and general guidelines for the field work; (2) protocols of instruments; and (3) procedures for the registry of the data.

Field work

The field work lasted for three weeks, from 24 October to 11 November 2011, in Ancash and Lima. The first two weeks of field work were conducted exclusively in Ancash, while the third week of work took place at Ancash and Lima simultaneously. At each site, the collection activities lasted from four to five full days. The schedule proposed per site included class observations in the mornings, and interviews and focus group in the afternoons. Only in the case of Huaylas 4 (Ancash), some interviews with caregivers and students were conducted at the weekend. The field work was supervised by GRADE staff during the first two weeks at Ancash. In the third week, the supervision continued by telephone with the team in Ancash and Lima. The types of data collected during the field work are presented in Table 20.

Table 20. *Data collected in the qualitative component of the School Survey*

	Huaylas 4, Ancash	Huaylas 3, Ancash	Huaylas 2, Ancash	Ate, Lima
School observations	5	2	5	3
Interviews with students	5	3	5	2
Interviews with caregivers	5	3	5	2
Focus groups	1	1	1	1

All the information was collected with the previous authorisation of the participants. No remuneration was offered to them, although a small gift (coloured pens and markers) was presented to the children at the end of the field work; and teachers who participated in the focus group or the observations received a small package with basic school supplies (coloured paper, marker pens and glue) as a token of gratitude.

The field work was conducted as expected, except in the community of Huaylas 3 (Ancash). Of the five families included in the sample, two refused to participate, arguing that it would demand too many hours of their time. In addition, teachers at the school refused to participate in the focus group and the observation; in fact, they rejected the supervision and

the guidance visits from the local government. The head teacher, who was also the third grade class teacher, agreed to take part in an interview regarding the topics of the focus group, and to the observation of two days of classes.

Data management

After the end of the data collection, fieldworkers wrote reports according to the templates discussed in the training and Manual. Between 21 November and 9 December 2011, fieldworkers prepared reports of the administered instruments. All reports were revised by GRADE staff.

To produce transcriptions, audio files were distributed among trained transcribers. The objectives of the study and the guidelines for transcription were explained at individual meetings. Transcribers signed a confidentiality agreement to protect the identity of the interviewees (available in Spanish, Annex E). Eight transcribers were hired simultaneously; six of them worked on the audios in Spanish (between 7 November and 16 December) and the other two transcribed and translated the audios in Quechua (between 14 November and 21 January).

All transcriptions were checked against the audios to verify accuracy, punctuation and orthography. This process of quality control was conducted by GRADE for the audios in Spanish and by the Quechua-speaking fieldworker for the audios in Quechua.

The final reports included reports produced by the fieldworkers and the transcriptions. All audios and final reports were labelled following the coding procedures and stored in the PC of GRADE staff and the central server of GRADE.

Coding and analysis

The interview coding process began in January 2012. GRADE staff developed a coding book with a detailed definition of the categories and codes of analysis, which was piloted with four interviews, one per site. After that, some definitions were adjusted to produce the final version.

The coding was developed in the Atlas-ti program. An educational psychologist with experience of qualitative analysis was hired to assist the coding and analysis procedures, working along with one of the members of GRADE staff on the coding of interviews and focus groups from 16 January to 10 February. Coding guidelines were specified in a document and a coding book was piloted. That way all the people involved in the coding developed it similarly. Also, during that period, both of the encoders held meetings at least twice a week to discuss the codes and any doubts arising during the process.

The final hermeneutic units of Atlas-ti with the coding of interviews and focus groups were completed by 29 February. During March, the analysis of this information was consolidated in 11 matrixes. Each matrix contained the information of a category of analysis (which included several codes). It presented the topics that were mentioned in all the sites (the cross-sectional topics), but also included an analysis of all the cases per site.

5.2. Preliminary results

We report here the emerging findings and the preliminary results of the qualitative data collected for the School Survey. The information comes from analysis of interviews with children and caregivers and focus groups with teachers. The analysis of class observations will be used in future publications to provide evidence to triangulate these preliminary results.

The information provided by the quantitative component regarding the responsiveness of schools shows the scenario of the rural and EIB schools. Results showed that, taking the data of a sub-sample of the teachers surveyed,²² only a small percentage of teachers at rural and EIB schools gave priority to the native language of their students and used the native language in their classes. However, all teachers reported positive attitudes towards teaching in Spanish and the native language.

The qualitative data results complement these quantitative results. The following sections focus on four topics according to the research questions: student adaptation to the school, school response to the student, EIB implementation, and educational expectations.

5.2.1. *Student adaptation*

The adaptation of students to the school comprises two aspects: the sources of support for adaptation to their academic work and the adaptation difficulties that students face at school.

Support sources available to children may vary, depending on the scenario and/or context in which the child performs. In the school context, the actors identified as sources of support are peers and teachers. It should be noted that while the help of peers was mentioned in all sites, teachers' role as a source of support was highlighted only in Ate and Huaylas 2.

Interviewer: Who do you ask when you have any questions or concerns about school?²³

Aide: The teacher.

Interviewer: The teacher, and how does he help you?

Aide: He explains to me.

(Child interview, school of Ate)

Interviewer: And, for example, when you have such a doubt or question about school, who do you ask for help?

Norma: My friends.

Interviewer: Your friends?

Norma: Yes.

Interviewer: And do they know?

Norma: Yes.

(Child interview, school of Huaylas 4)

On the other hand, in the home context, the main source of support identified by both caregivers and children was older siblings. The interviewees noted that children seek help from older brothers who are in higher grades or have already completed schooling when they do not understand something or when they need help with their homework. Mothers and children showed in their testimonies that supporting the academic work of younger siblings is

²² Teachers answering the Socio-linguistic questionnaire.

²³ All quotations reported in this document were translated into English by GRADE staff. Quotations collected in Spanish are reported only in English. Quotations collected in Quechua are presented in the original language plus a translation into English.

a function and responsibility assigned to older siblings. However, there are no details in the information gathered about the characteristics of the support and interaction between brothers and sisters during the academic activity.

- Interviewer: And here in your family, at home, who can help you [with your homework]?
- Marcela: My sister.
- Interviewer: Uhum. And how does she help you, for example, if you do not know how to solve a math problem? How does she help you?
- Marcela: 'You have to do this' she says. And the teacher tells me it is ok.
- Interviewer: But she explains it to you or she does it for you?
- Marcela: She just explains it to me.
- Interviewer: She does not do it for you?
- Marcela: No.

(Child interview, school of Huaylas 3)

Likewise, at home, parents are considered a source of support for children's homework, although to a lesser extent than older siblings.

- Interviewer: Eh... And madam, when Andrés does not understand in school or has homework, who helps him?
- Andrés' mother: His father teaches him sometimes when he does not understand.
- Interviewer: His father?
- Andrés' mother: Yes.

(Care giver interview, school of Huaylas 4)

However, parental support is limited because many of the parents have not attended or finished school and/or have not mastered the topics in which children need help. In this sense, in Huaylas 3, a mother said that due to their low educational level, neither she nor her husband could support their child with homework.

- Interviewer: Y mana entindiptin, este colegiopi... cuando tiene algo que no entiende en la escuela, Pitan yanapán? //
- And when he does not understand at school...when he has something he does not understand at school, who helps him?
- Jaime's mother: Kikin allí mana allitapis rurallan, mamita. Mana kayitsin papanpis, primaria cumplitallam papanimpis //
- He does it by himself, right or wrong he does, madam. His father neither explains it to him; his father has only elementary education.

(Care giver interview, school of Huaylas 3)

Regarding students' school-adaptation difficulties, at all sites it has been observed that the main problem is in the academic field. Thus, the learning of mathematics is one of the most difficult aspects for students. As both mothers and children explain, this curricular area or specific topics (e.g. multiplication, division, solving equations), is the one that they like least and/or the one in which they have a lower academic performance compared with other areas.

- Interviewer: Ya. ¿Y Adrián willashunkiku facillakush yachakun imapis o manaku? //
Ok. And does Adrián tell you he is learning easily or not?
- Adrián's mother: Dificilraqshi wakin, señorita, niman. //
'Some things are still difficult', he tells me.
- Interviewer: ¿Nishunki? //
He tells you that?
- Adrián's mother: Awmi, señorita, wakin difiilmi, ninmi. //
Yes, miss, 'some things are still difficult' he tells me.
- Interviewer: ¿Imakunata difiil? //
What things are difficult?
- Adrián's mother: Kay multiplicación, chay divisionkuna, imaykunatatsi rurakuyan, ari, señorita. //
The multiplication, these divisions, all those things that they do, miss.
(Care giver interview, school of Huaylas 2)

- Interviewer: Ok, and what are the things you find more difficult?
- Aide: Of all things?
- Interviewer: Of all the courses you are taking right now.
- Aide: Maths.
- Interviewer: Mathematics and square root {LAUGHTER}. And the easiest?
- Aide: Everything.
- Interviewer: Everything, everything but maths?
- Aide: I do not like maths.
(Child interview, school of Ate)

On the other hand, in Huaylas 2 and Huaylas 3 it was mentioned that poor diet is a constraint that affects students' academic performance and prevents their successful adaptation to school. In one case in Huaylas 3, the caregiver argued that her daughter's poor diet may be the cause of her illness, and that this hinders her learning and academic performance.

- Interviewer: Ya mamita, entonces este... ¿Wamrayky willashunkichu facillakus este... yachakurn? //
Ok madam, then...Does your child tell you if it is easy...what he is taught?
- Juan's mother: Ari señorita //
Yes miss.
- Interviewer: ¿O difiilchu? //
Or difficult?
- Juan's mother: Dificilaq yachakunanraq señorita //
It might be difficult, that's why he does not learn anything, miss.
- Interviewer: ¿Ymanasqa difiil yachakuran? //
Why is it so difficult?

- Juan's mother: Kaqanchi faltakuyan alimentaciuninshi, ymaynaya señorita //
It might be because he lacks feeding, how would it be miss.
- Interviewer: ¿Falta alimentación? //
Lack of feeding?
- Juan's mother: Yeah.
- Interviewer: Uhum.
- Juan's mother: Chaychiky mana yachanshu riky //
That is why he does not know.

(Care giver interview, school of Huaylas 2)

Likewise, it has also been noted that many Quechua-speaking children have trouble adapting to the classroom, as they are victims of mockery and mistreatments by their peers because of their mother tongue. This situation has even prompted a child to quit school in Huaylas 4. The following testimony from the focus group with teachers is revealing:

- Teacher 01: I would rather...mmm...maybe tell you an episode (...) some time ago a child came, I think from [a town close to Huaylas 4] to this high school ... And in high school students must express correctly...
- Interviewer: In Spanish.
- Teacher 01: ...in Spanish. And although they speak Quechua, they avoid using it here at school because the ones who speak it are seen as ... like if they were in another reality.
- Interviewer: Uhum.
- Teacher 01: And I remember that this boy came, I cannot remember if he was from [a town close to Huaylas 4] or somewhere around (...) and well, the teacher, who is not in this school any more, told me how all his classmates made fun. He used to ask the teachers, he was a participatory student. The problem was that he only expressed in Quechua and could not...
- Teacher 02: Teachers did not answer.
- Teacher 01: And everyone else laughed and mocked the child when he expressed an idea and the teacher, how to say it ... left him with the word in the mouth. So, all the students made jokes and fun, and so what happened? The student did not last and had to quit school.
- Interviewer: Although he was a participating student?
- Teacher 01: Yeah, yeah, yeah, yeah.
- Teacher 02: He had good ideas, but the teacher could not understand him.
- Teacher 01: So...
- Interviewer: The teacher...
- Teacher 03: No ...that is really the problem, that teachers...
- Teacher 01: Not only teachers, but the classmates who made him feel bad, because peers could have supported him. That is, they could have said to the teacher 'no, he means this...'.
Interviewer: Because finally peers also spoke Quechua...

Teacher 01: Of course, yes...

Teacher 02: But far from this, they also made him feel bad.

(Teachers' focus group, school of Huaylas 4)

Finally, in Huaylas 2 as in Ate, mothers suggested that there were certain characteristics that would facilitate or hamper a child's adaptation to school, specifically in terms of their learning and performance. Thus, in Huaylas 2 it was mentioned that learning would depend on the student's abilities, while in Ate it was noted that the lack of interest in or motivation for study would be an obstacle to school adaptation.

Interviewer: Do you think school is difficult or easy for Aide?

Aide's mother: For her, both, is easy, difficult. If it was upon her, she wouldn't study, if it was upon her, she would quit studying.

Interviewer: Why does she say so?

Aide's mother: She is lazy, she wouldn't like it [studying] (...) But she is really smart, learn fast. But she doesn't like to do homework.

(Care giver interview, school of Ate)

5.2.2. *School responsiveness*

The understanding of this topic began with the analysis of teachers' adaptation to Quechua-speaking students, including two aspects: teacher adaptation to difficulties and the sources of support identified by students themselves.

Since in Ate teachers have not had experience working with Quechua-speaking students, their statements and testimonies on this point tended to reflect ideal and hypothetical situations, rather than reflecting their own experience. For this reason, this section has been prepared with the information gathered in the other three sites (at Ancash), where teachers have had some personal experience of working with Quechua-speaking children.

Regarding the difficulties faced by teachers in their adaptation, it has been observed that the main obstacle reported relates to effective communication between teacher (Spanish speaker) and student (Quechua speaker) during the class sessions. The reasons attributed by the teachers to this difficulty are divided among those who believe that the causes of communication barriers are in the child (s/he is shy and inhibited, speaks indistinctly, and/or has no fluency in Spanish), and those who think that the causes are in the teacher (s/he is not trained to teach in Quechua, is not fluent in Quechua). It should be mentioned that the first group comprises teachers from Huaylas 3 and Huaylas 2, while teachers from Huaylas 4 are in the second group.

- Teacher 01: And I may be wrong, but maybe they are afraid because we speak in Spanish and they speak in Quechua, and Spanish also.
- Interviewer: Ok.
- Teacher 01: Of course, they also speak Spanish, but...I do not know if you have noticed it but on recess time, between them...
- Teacher 02: Quechua, Quechua?
- Teacher 01: Even when talking among themselves they use to raise their voice.
- Interviewer: Uhum.
- Teacher 01: So, that they speak much more.
- Teacher 02: Ok.
- Teacher 01: But when you ask them in the classroom something about the class, they answer in Spanish but with a very low voice.
- Interviewer: Very low?
- Teacher 01: Yes, they answer well, but with such a very low voice that it is hard to understand them, it is very difficult.

(Teachers' focus group, school of Huaylas 2)

On the other hand, regarding the support sources, teachers highlighted the important role attributed to the 'translator student'. In this regard, as part of the classroom dynamics, teachers from Huaylas 2 and Huaylas 4 reported having students who contribute to the proper conduct of the class in situations where communication between teacher (Spanish speaker) and student (Quechua speaker) is hampered by the lack of command of either language by these two actors. In this scenario, a student who commands both languages and serves as interpreter or facilitator of dialogue, enabling effective communication, is a key resource for teachers.

- Interviewer: Ok, but regarding your class, have you ever had, let's say, this situation where a child does not understand you and speaks Quechua? How did you manage it? How have you handled...?
- Teacher: Yes, I have consistently supported students who speak Spanish and Quechua.

(Teachers' focus group, school of Huaylas 4)

Likewise, in Huaylas 3 teachers reported as a difficulty for their work with Quechua-speaking children the lack of resources, materials and/or services to complement the teaching-learning processes for these students in the classroom.

- Interviewer: Mmmm, let's say...what kind of support ...what support do you have to face the difficulties of teaching Quechua-speaking children?
- Teacher: No support, not for Quechua.
- Interviewer: Not for Quechua, no support. And in general, not only for Quechua, but for teaching in general?
- Teacher: Yes, from the UGEL, the Education Ministry sent us some didactic materials.

Interviewer: But not in Quechua, right?

Teacher: No, no.

(Teachers' focus group, school of Huaylas 3)

Even though this difficulty is not limited to Quechua-speaking children, in Huaylas 2 and Huaylas 4 teachers mentioned parents' lack of participation and involvement in their children's learning process. Teachers claimed that parents show a lack of interest or time to contribute to the consolidation of children's learning, as they do not help them with homework, review the lessons, show interest in how they do in school, etc.)

And speaking at the institution level, almost 80% or 90% of parents are completely indifferent about their children's education (...) then, there is no requirement from them about the homework and homework comprises simple tasks...

(Teachers' focus group, school of Huaylas 2)

5.2.3. *EIB implementation*

In order to analyse the implementation of the EIB programme, the data collection focused on the use of and attitudes towards Spanish and Quechua. We collected information about these in all the sites. Additionally, in the EIB school we included a topic related to the inclusion of traditional knowledge in the curriculum.

In terms of the use of Quechua and Spanish – except for the Lima school – most of the children use Quechua when playing or hanging out with other children, either during school recess or on their way to the school or home. Spanish is used at the school and for learning activities; thus, inside the classroom the language of communication is Spanish, both with the teacher and, most of the times, among peers.

Interviewer: Which language do you use in the school?

Adrián: Quechua, Spanish.

Interviewer: Quechua and Spanish?

Adrián: Yes.

Interviewer: Which language your teacher teaches? Which language does your teacher use in the class?

Adrián: [Sigh]

Interviewer: Which one does he speak? Quechua or Spanish?

Adrián: Spanish.

Interviewer: Doesn't he speak to you in Quechua?

Adrián: A little bit.

(Child interview, school of Huaylas 2)

Specifically, according to teachers and students Quechua is used only when the teacher has to translate an instruction or explanation because the student does not understand it in Spanish.

- Interviewer: And, with your teacher?
- Marcela: Maybe we speak Spanish, maybe Quechua.
- Interviewer: Does your teacher speak Quechua?
- Marcela: Yes.
- Interviewer: (...) And when she teaches you, what language does she use? Spanish or Quechua?
- Marcela: Maybe in Quechua, maybe in Spanish.
- Interviewer: She uses both.
- Marcela: Yes.
- Interviewer: In which situations does she use Quechua?
- Marcela: Maybe she uses Quechua, maybe not.
- Interviewer: Why does she sometimes speak in Quechua?
- Marcela: Maybe you don't understand, she says.
- Interviewer: Ah, she says that maybe you don't understand and then she speaks in Quechua.
- Marcela: Yes.

(Child interview, school of Huaylas 3)

Mainly at Huaylas 2 and Huaylas 4, it is important to note that the quality and the quantity of children's communication differ according to three variables: the context (inside/outside the classroom), the actors involved (teacher/peers), and the language of communication (Spanish/Quechua). When children communicate inside the classroom with their teachers in Spanish, they are less communicative and their tone of voice is low. In contrast, when they are in the playground or doing some group activities inside the classroom with their peers, children are very communicative in Quechua, and their tone of voice is louder.

From the discourse of teachers and the care givers, it could be inferred that the aim of the school is that students prioritise Spanish when they finish school, since it is more valued. Spanish is considered a resource for adaptation in the city; this is to find a job, but mostly 'to have a voice' and 'to be respected' in that space. The importance of speaking Quechua is limited to interactions with friends and family from the community. It is interesting to note that in contrast to the communities at Ancash, at Ate (Lima) the knowledge of Quechua was considered an advantage, because of its value in interactions with the family.

- Juan's mother: Castellanyshi mas allinta yashakunman señorita, ñuqa castellanutaqa yachananta munanqa //
He will learn better in Spanish. I want him to learn to speak Spanish.
- Interviewer: Ajá ¿Ymanir qam munanky? //
Why do you want that?
- Juan's mother: Ari, maytapas aywaptyn palanampaqshi señorita, ñuqa kayna huk puebluta aywany yashatshu castellanutaqa ni piwan palatshu mudum, kakun //
Well, when he goes to anywhere, to speak, when I go to other town, I don't know Spanish, I can't speak to anybody, I'm mute.

- Interviewer: ¿Qam? //
Do you?
- Juan's mother: Yes.
- Interviewer: Ok.
- Juan's mother: Ñuqa chayta munany, maytapas aywaptyn palayta yachanman, llapanwampas palanky amigukunawan //
I want that, so he can speak in other places, to speak with his friends too.
- Interviewer: Ok.
- Juan's mother: Y mana yacharqa, ni piwan palankichu //
If he doesn't know [Spanish], he couldn't speak with anybody.
(Care giver interview, school of Huaylas 2)
- Interviewer: ¿Y qeshuataqa allinchi palanaya o manachu? //
And Quechua? Is it good that he speaks Quechua?
- Andrés' mother: Allilla palanaqa kaypy, pero castellanuqa mas allin ya señorita //
It is good for speaking here, but Spanish is better.
- Interviewer: ¿Y qeshuataqa rimanampaq kayllapy? //
Is Quechua just for speaking here?
- Andrés' mother: Yes.
(Care giver interview, school of Huaylas 4)

On the other hand, in terms of the inclusion of traditional knowledge in the curriculum, it seems from the expressions of children and caregivers that schools rarely include those topics in classrooms. Children report some experiences in which teachers talk about agricultural activities and, exceptionally, a child reported a practical activity of cultivating. It would seem that the inclusion of themes like myths of the community and agricultural activities was valued positively by the caregivers and children.

According to the teachers, they were not including traditional knowledge from the community in the classes, except for some traditional games. Teachers consider it important, but they explain that they don't have enough time to plan the class with those topics. Moreover, they consider that members of the community would not be interested in collaborating with activities such as visits to the class by community elders, and they have difficulties when communicating with them, since teachers are not fluent in Quechua.

- Interviewer: Does your teacher tell you about what your father or mother do?
- Ester: Yes.
- Interviewer: What does he tell you?
- Ester: Mmm. Your father works in the field, he says.
- Interviewer: What?
- Ester: Your father works in the field, he says, but...
- Interviewer: Does he ask you if your father works in the field?
- Ester: Yes.

- Interviewer: And does he tell you about cultivating and harvesting? Does he teach you how to cultivate and harvest?
- Ester: Yes.
- Interviewer: Where does he teach you? How does he teach you?
- Ester: He teaches us how to plant, he tells us.
- Interviewer: Does he?
- Ester: Yes.
- Interviewer: Is there any place where he takes you to cultivate?
- Ester: No.
- Interviewer: ¿No?
- Ester: No.
- Interviewer: Does he just tell you how to do it?
- Ester: Yes.
- Interviewer: Do you like your teacher talk about it in school?
- Ester: Yes.

(Child interview, school of Ate)

- Interviewer: How is the work with the community elders? Do you work with them or do you just tell students about them? Do you mention them?
- Teacher 01: I don't mention them
- Teacher 02: In paper (...) It is in the curriculum
- Teacher 01: Yes, it is in the curriculum, but I don't work with it because of the time or because they [the community elders] don't have time either. They should be included in the teaching and learning process.

(Teachers' focus group, school of Huaylas 2)

5.2.4. Educational expectations

An important finding is that all of the children and caregivers interviewed expect that students will attend high school. Most children and caregivers from Huaylas 2, Huaylas 4 and Ate reported that the students will attend a high school located in their community. In contrast, children from Huaylas 3 must commute around an hour or more to get to high school.

- Interviewer: (...) where are you going to study in high school?
- Elsa: In Huaylas 4.
- Interviewer: In Huaylas 4 (...) and is it near?
- Elsa: Mmm. Long.
- Interviewer: How long do you walk?
- (...)
- Elsa: They go at 6:00 a.m.
- Interviewer: At 6:00 a.m. they go. And, do you know the school?
- Elsa: Yes.

- Interviewer: Have you been there?
 Elsa: Yes.
 Interviewer: And, how is it?
 Elsa: It's big
 Interviewer: Do you like it?
 Elsa: Yes.

(Child interview, school of Huaylas 3)

Children also have expectations related to the difficulty of secondary education. Most of the children and caregivers from Huaylas 2 and Huaylas 4 consider that high school will be more difficult and demanding than primary school; their expectations are based on what they have heard from their relatives and their own visits to high-school classrooms. For some children from Huaylas 3, the difficulty of high school is related with the language of instruction. It is important to note that although all children and caregivers expect that teaching will be in Spanish in secondary education, only some children from Huaylas 3 consider it as a difficulty that they will have to face. On the other hand, some caregivers and children from Huaylas 2 and Huaylas 4 expect that additionally English will be taught.

- Interviewer: (...). The [high] school will be easy or difficult?
 Ester: Difficult.
 Interviewer: Difficult?
 Ester: Yes.
 Interviewer: Why it will be difficult?
 Ester: Uhm... [Silence]
 Interviewer: Uhm?
 Ester: Because I won't know.
 Interviewer: You won't know?
 Ester: Yes.
 Interviewer: What things you won't know?
 Ester: Uhm... homework.
 Interviewer: The homework.
 Ester: Yes.
 Interviewer: Who told you that high school will be difficult?
 Ester: My brother.

(Child interview, school of Huaylas 2)

Another important topic explored in the expectations was the factors that could limit the transitions to secondary education. Mainly two aspects were mentioned: health issues and children's lack of interest. Accordingly to caregivers and children, students will not be able to finish primary school or attend high school if they are sick or if one of the parents dies or get seriously sick. If the latter occurs, children will have to assume other responsibilities at home, such as working, and consequently they will not have time to go to school.

- Interviewer: Uhm. Y pay este... qué cosa pasaría para que Elsa no vaya a la secundaria? //
- What would have to happen so Elsa won't be going to high school?
- Elsa's mother: Tal vez qishartsi, mamita, mana munankatsu: noqa mana istudiatsu, niptinqa, mana munapinqa, pueditsu, mamita. //
- Maybe getting sick, madam; [or] she won't want it, won't want: 'I don't study', if she says. If she don't want [study], I can't do anything.
- (Care giver interview, school of Huaylas 3)

The second issue is suggested by the previous quotation: the caregiver mentioned that the child's own lack of interest in continuing her studies could limit the transition to high school. Mainly, mothers from the sites in Ancash report that if their children are not interested or motivated to attend to high school, children interrupt their education. Their lack of interest in the school is connected with the increasing opportunities to work that are open to older children. According to mothers and children, students prefer earning money rather than attending school.

- Interviewer: Why they don't go to the school?
- Adrián: They have fulfilled.
(...)
- Interviewer: How they have fulfilled?
- Adrián: They have finished.
- Interviewer: But, the ones that have not finished.
- Adrián: I don't want.
- Interviewer: Why don't they want?
- Adrián: Yes.
- Interviewer: What do they do instead of going to school?
- Adrián: Play, work.
- Interviewer: But, you want to go to school?
- Adrián: Yes.
- Interviewer: Why do you want to go to the school?
- Adrián: I like it.
- Interviewer: Ok. And those children that work?
- Adrián: They earn money.
- Interviewer: What do they do with that money?
- Adrián: Eat.

(Child interview, school of Huaylas 2)

6. Conclusions and perspectives for future research and the next round of the School Survey

Previous studies in Peru, and other developing countries, suggest that the educational system is set up in an unfair way, so that it tends to reinforce inequality. For example, students from wealthier families tend to attend private schools, which on average have better infrastructure than public schools, and better performance in standardised tests. However, very little empirical data are available for simultaneous analysis of the links between students' individual and family characteristics, educational learning processes at school and performance.

The data base of the School Survey provides rich information to continue research along these lines: data on schools' infrastructure and access to basic services, and on the educational processes implemented in pedagogical interactions in the classroom. Variables such as school and classroom conditions, students' opportunities to learn, and teachers' pedagogical content knowledge of mathematics, which are often not collected in large surveys such as this one, are available in the School Survey data base and constitute an excellent resource for further research on the topic of educational inequality. We have not included most of these data in this working paper as they are still being processed by the researchers. We trust, however, that this paper will help to provide researchers aiming to use the data base with relevant information on the design of the survey and the characteristics of the instruments and procedures to collect data.

In general terms, the quantitative data presented suggest that there are important differences in the background of students attending different types of school. Private schools tend to enrol children with better-educated parents (which is not a surprise, given that they have to pay for their schooling). Among the public-school students, indigenous children and their families seem to have worse infrastructure at school and worse educational outcomes. This is in spite of the fact that the Young Lives sample does not by design include the richest 5 per cent of districts (and hence schools) in the country. Briefly, the above pattern suggests that the educational system would be reinforcing social inequalities. The specific pedagogical paths through which this occurs will be subject of analysis for the Young Lives team, and we hope for other interested researchers, in years to come.

Similarly, the qualitative sub-study produced some evidence to show that the schooling experience of indigenous children does not respond to their linguistic and cultural characteristics; hence, indigenous students face difficulties related to their mother tongue at schools where Spanish is prioritised. Even when the EIB programme is implemented, it does not adopt its main characteristics: Spanish is mainly used for pedagogical activities, and the inclusion of traditional knowledge rarely occurs.

Finally, regarding the next round of data collection, we believe that transition to secondary education seems to be the most important issue to consider in Round 2 of the School Survey, for both the quantitative and the qualitative components. This is important, because there are about three times more primary schools than secondary establishments, which are more likely to be urban. Hence who passes on to secondary education, how they experience

the transition, and what their achievement is at the beginning of secondary school are important issues in a country where the first year of secondary is marked by the lowest indicators of its level (i.e. the highest repetition and drop-out rates compared with other secondary years). Given the preliminary results shown above, it is expected that rural students, and especially indigenous students, will experience more severe challenges in attending and adjusting to secondary schools.

7. References

Boscardin, C.K., Z. Aguirre-Muñoz, G. Stoker, J. Kim, M. Kim and J. Lee (2005) 'Relationship between Opportunity to Learn and Student Performance on English and Algebra Assessments', *Educational Assessment* 10 (4): 307–32.

Cuglievan, G. and V. Rojas (2008) 'La gestión escolar en el marco de la autonomía: una mirada desde el cotidiano a cinco instituciones educativas estatales de Lima' [School Management in the Context of Autonomy: A Day-to-day Look in Five Public Educational Institutions of Lima] in M. Benavides (ed.) *Análisis de programas, procesos y resultados educativos en el Perú: contribuciones empíricas para el debate* (pp. 297-342), Lima: GRADE.

Cueto, S. (2007) 'Las evaluaciones nacionales e internacionales de rendimiento escolar en el Perú: Balance y perspectivas' [National and International Assessments of Student Achievement in Peru: Results and Prospects] in GRADE, *Investigación, políticas y desarrollo en el Perú* (pp. 405–55), Lima: GRADE.

Cueto, S. and W. Secada (2004) *Eficacia escolar en escuelas bilingües en Puno, Perú* [School Effectiveness in Bilingual Schools in Puno, Peru], Lima: GRADE.

Cueto, S., J. Escobal, M. Penny and P. Ames (2011) *Tracking Disparities: Who Gets Left Behind? Initial Findings from Peru*, Round 3 Survey Report, Oxford: Young Lives.

Cueto, S., G. Guerrero, J. León, E. Seguí and I. Muñoz (2012) 'Explaining and Overcoming Marginalization in Education: Ethnic and Language Minorities in Peru', in J. Boyden and M. Bourdillon (eds) *Childhood Poverty. Multidisciplinary Approaches* (pp. 261–82), Basingstoke: Palgrave Macmillan.

Cueto, S., G. Guerrero, C. Sugimaru and A. Zevallos (2010) 'Sense of Belonging and Transition to High Schools in Peru', *International Journal of Educational Development* 30: 277–87.

Cueto, S., C. Ramírez, J. León and S. Azañedo (2006) 'Oportunidades de aprendizaje y rendimiento en comunicación integral de estudiantes en tercer y cuarto grado de primaria en Lima y Ayacucho' [Opportunities to Learn and Language Arts Achievement of Students in Third and Fourth Grade in Lima and Ayacucho] in M. Benavides (ed.) *Los desafíos de la escolaridad en el Perú: estudios sobre los procesos pedagógicos, los saberes previos y el rol de las familias* (pp. 13–77). Lima: GRADE.

Cueto, S., C. Ramírez, J. León and G. Guerrero (2004) 'Oportunidades de aprendizaje y rendimiento en matemática de los estudiantes de tercer y cuarto grados de primaria en Lima y Ayacucho' [Opportunities to Learn and Mathematics Achievement of Students in Third and Fourth Grade in Lima and Ayacucho] in M. Benavides (ed.) *Educación, Procesos Pedagógicos y Equidad* (pp.15–68), Lima: GRADE.

Cueto, S., C. Ramírez, J. León and O. Pain (2003) *Oportunidades de aprendizaje y rendimiento en matemáticas en una muestra de estudiantes del sexto grado de primaria de Lima* [Opportunities to Learn and Mathematics Achievement of a Sample of Students in Sixth Grade], Work Document 43. Lima: GRADE.

Education Law N° 28044 (2003, 17th July), Lima, Peru: Republic Congress. Retrieved from <http://www.unife.edu.pe/evaluacion/normatividad/leyeducacion.pdf>

- Escobal, J. and E. Flores (2008) *An Assessment of the Young Lives Sampling Approach in Peru*, Technical Note 3, Oxford: Young Lives.
- Herman, J.L., D.C.D. Klein and J. Abedi (2000) 'Assessing Students' Opportunity to Learn: Teacher and Student Perspectives', *Educational Measurement: Issues and Practice*, 16–24.
- Hill, H.C. and D.L. Ball (2004) 'Learning Mathematics for Teaching: Results from California's Mathematics Professional Development Institutes', *Journal for Research in Mathematics Education* 35 (5): 330–51.
- Hill, H.C., D. Loewenberg Ball and S.G. Schilling (2008) 'Unpacking Pedagogical Content Knowledge: Conceptualizing and Measuring Teachers' Topic-specific Knowledge of Students', *Journal for Research in Mathematics Education* 39 (4): 372–400.
- IEA (2003) *TIMSS Assessment Frameworks and Specifications 2003* (2nd edition), Boston: International Study Center.
- IEA (2009) *TIMSS 2011 Assessment Frameworks*, Boston: International Study Center.
- Koirala, H., M. Davis and P. Johnson (2008) 'Development of a Performance Assessment Task and Rubric to Measure Prospective Secondary School Mathematics Teachers' Pedagogical Content Knowledge and Skills', *Journal of Mathematics Teacher Education* 11 (2): 127–38.
- Kudó, I. (2004) 'La educación indígena en el Perú. Cuando la educación habla una sola lengua' [Indigenous Education in Peru. When Education Speaks Only One Language] in D.Winkler and S. Cueto (eds) *Etnicidad, raza y género en América Latina* (pp. 93–132), PREAL.
- Lim-Teo, S., K. Chua, W. Cheang and J. Yeo (2007) 'The Development of Diploma in Education Student Teachers' Mathematics Pedagogical Content Knowledge', *International Journal of Science and Mathematics Education* 5 (2): 237–61.
- López, L. (2002) 'A ver, a ver... ¿quién quiere salir a la pizarra? ¿jumasti? ¿jupasti?'. *Cambios iniciales en la escuela rural bilingüe peruana* [Let's See, Let's See ... Who Wants to Come to the Board? ¿Jumasti? ¿Jupasti?]. Initial Changes in Peruvian Bilingual Rural School], Lima: Ministerio de Educación.
- Marsh, H.W. (1990) 'The Structure of Academic Self-concept: The Marsh/Shavelson Model', *American Psychological Association* 82 (4): 623–36.
- McDonnell, L.M. (1995) 'Opportunity to Learn as a Research Concept and a Policy Instrument', *Educational Evaluation and Policy Analysis* 17(3): 305–22.
- Ministerio de Educación (2008). *Reglamento de organización y funciones* [Rules of Organisation and Functions], retrieved from <http://www.minedu.gob.pe/normatividad/reglamentos/ROF-MED2006.php>
- Ministerio de Educación (2009) *Diseño Curricular Nacional* [National Curriculum Design], Lima: Ministerio de Educación.
- Ministerio de Educación (2011) *Directiva para el desarrollo del año escolar 2011 en las instituciones educativas de educación básica y técnico productivo* [Directives for Development of the Year 2011 in the Educational Institutions of Basic Education and Technical Productive], retrieved from http://www.minedu.gob.pe/DelInteres/xtras/download.php?link=directiva_2011.doc

- Ministerio de Educación (2012) 'Resultados de la Evaluación Censal de Estudiantes 2011 (ECE 2011)' [Results of the 2011 Census Evaluation of Students] (unpublished document).
- Miranda, L. (2008) 'Factores asociados al rendimiento escolar y sus implicancias para la política educativa del Perú' [Factors Associated with School Achievement and its Implications for Educational Policy in Peru] in M. Benavides (ed.) *Análisis de programas, procesos y resultados educativos en el Perú: contribuciones empíricas para el debate* (pp. 11–39), Lima: GRADE.
- Park, S. and J. Oliver (2007) 'Revisiting the Conceptualization of PCK', *Research in Science Education* 38 (3): 261–84.
- Shulman, L. (1986) 'Those Who Understand: Knowledge Growth in Teaching', *Educational Researcher* 15 (2): 4–14.
- Thompson, D.R. and S.L. Senk (2006) 'Methods for Controlling for Opportunity-to-Learn', Conference Papers, Psychology of Mathematics & Education of North America, 2006 annual meeting, 1–7.
- UNICEF (n.d.) *Educación Intercultural Bilingüe* [Intercultural Bilingual Education], retrieved from http://www.unicef.org/peru/spanish/education_3215.htm
- UNICEF (2010) *Estado de la niñez indígena en el Perú* [State of Indigenous Children in Peru], Lima: INEI and UNICEF.
- Vasquez, T. and P. Oliart (2003) *Actores y tensiones en el proceso de descentralización educativa. Estudio de tres experiencias en un contexto cultural similar* [Actors and Tensions in the Process of Educational Decentralization. Study of Three Experiences in a Similar Cultural Context], Lima: IEP, retrieved from <http://cies.org.pe/investigaciones/educacion/actores-descentralizacion/actores-y-tenciones-en-el-proceso-de-descentralizacion-educativa>
- Willms, J.D. (2003) *Student Engagement at School. A Sense of Belonging and Participation. Results from PISA 2000, OECD*, retrieved from <http://www.oecd.org/dataoecd/42/35/33689437.pdf>
- Zuñiga, M. (2008) *La educación intercultural bilingüe: el caso peruano* [Intercultural Bilingual Education: The Peruvian Case], Lima: Foro Latinoamericano de Políticas Educativas [FLAPE].

8. Annexes

Annex A. Additional information on the Peruvian educational system

Table A1 reports the coverage rate by relevant age groups according to sex, geographic area, and mother tongue of children. For children aged 6 to 11, coverage rate is almost total (97.9 per cent). Differences by sex are negligible in this age range, as well as comparisons between geographic areas. In terms of mother tongue, differences are slightly favourable to native-language speakers within this group. In contrast, coverage rates are lower for children aged 12–16 years. In 2010, this figure was about 91.5 per cent, slightly favouring males and urban populations. Yet no significant differences were found when differentiating by mother tongue.

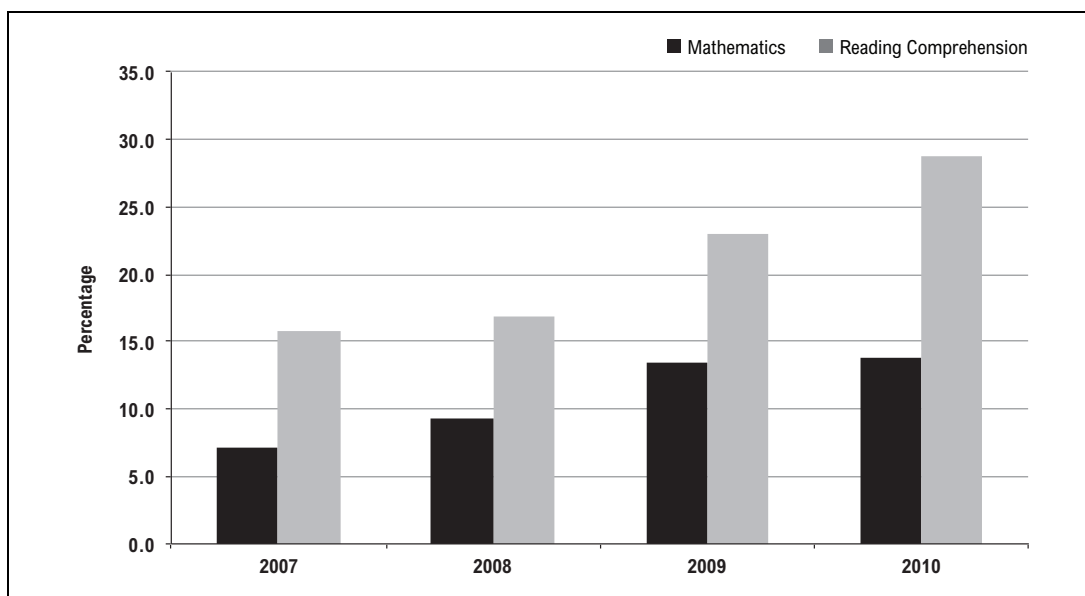
Table A1: Coverage rate by sex, geographic area, and mother tongue (% of relevant age group 2005 and 2010)

	6–11 years		12–16 years	
	2005	2010	2005	2010
Total	96.0	97.9	86.6	91.5
Gender				
Female	95.7	98.1	85.5	91.1
Male	96.4	97.8	87.7	91.9
Geographic area and sex				
Urban	96.8	98.1	91.3	93.4
Female	96.4	98.3	92.2	93.6
Male	97.3	98.0	90.4	93.2
Rural	94.7	97.5	78.5	87.5
Female	94.4	97.6	73.8	85.9
Male	95.0	97.5	83.0	89.1
Mother tongue				
Spanish	96.5	97.9	87.7	91.4
Indigenous	94.4	98.4	81.6	92.9

Source: ESCALE data base- Ministerio de Educación – Peru

Figure A1 presents the proportion of second grade students who reach level 2 ('deemed acceptable') in the mathematics and reading comprehension annual examinations. By 2007, almost 7.2 per cent of second grade children reached this level. By 2010, this figure was about 13.8 per cent. The proportion of students who reach level 2 in reading comprehension tests was greater than that in mathematics. In 2007, 15.9 per cent of second grade children reached the expected score, whereas in 2010 this figure was about 28.7 per cent. Results for 2011 were presented in the text above.

Figure A1. *Percentage of students who have a performance level expected for their grade in mathematics and reading comprehension*



Source: Unidad de Medición de la Calidad Educativa – Ministerio de Educación – Peru
http://sistemas02.minedu.gob.pe/consulta_ece/publico/index.php

Annex B. Sampling strategy: preliminaries

Young Lives questionnaires include questions relating to basic information about schools where children are enrolled (name of the educational institution, address, and other geographical references). Using this information, we proceeded to match the school names with the school unique identifier codes obtained from the 2008 School Census, conducted by the Ministry of Education.

Because the matching key variable was the name of the educational institution within the town of residence (the most specific geo-referenced unit available in the Young Lives survey), we found several shortcomings in the process of obtaining the unique identifier codes. First, some of the school names were provided incomplete or inaccurately during data collection. To solve this problem, we searched lists of schools by hand and matched the schools with the name as closely as possible in the School Census Dataset. Second, for some towns, there were several schools with very similar names. In these cases, we could not recover the unique identification codes because school names were indistinguishable. Third, for children who reported being in the school but with missing information of the educational institution, the identification process was based on pictures. Given that examiners were asked to take some pictures of the town, for very small towns it was possible to recover the school name, since it was the only school placed in the zone. Thus we matched the school name recovered from the pictures with the School Census Dataset and kept the unique identification code.

We successfully identified 618 of 638 schools initially listed (96.8 per cent of the school sample). From these 618 schools, we obtained information on public or private funding, whether the school was part of an Educational Bilingual Institution (EIB) programme, whether the school was located in an urban or rural area, and other information of interest for the Young Lives School Survey.

Annex C. Tests for internal consistency

Attitudes toward school (Cronbach's alpha)

Item	Observations	Sign	Item-test correlation	Item-rest correlation	Average inter-item correlation	Alpha
Happy	1747	+	0.58	0.27	0.14	0.40
Bored	1747	-	0.58	0.26	0.14	0.40
Having fun	1747	+	0.57	0.25	0.15	0.41
Nervous	1747	-	0.54	0.21	0.16	0.44
Calm	1747	+	0.55	0.23	0.15	0.42
Test scale					0.15	0.47

Sense of belonging (Cronbach's alpha)

Item	Observations	Sign	Item-test correlation	Item-rest correlation	Average inter-item correlation	Alpha
Stranger	1747	-	0.56	0.35	0.15	0.55
Make friends easily	1747	+	0.37	0.13	0.18	0.61
Feel like at home	1747	+	0.42	0.18	0.17	0.60
Awkward	1747	-	0.59	0.40	0.14	0.53
Others seem to like you	1747	+	0.47	0.25	0.16	0.58
Alone	1747	-	0.60	0.40	0.14	0.53
Absent	1747	-	0.52	0.31	0.15	0.56
Bored	1747	-	0.57	0.36	0.14	0.54
Test scale					0.16	0.59

Academic self-concept: Language Arts (Cronbach's alpha)

Item	Observations	Sign	Item-test correlation	Item-rest correlation	Average inter-item correlation	Alpha
You like Communication (Language Arts) classes	1747	+	0.66	0.50	0.28	0.70
You are good in Communication (Language Arts) classes	1747	+	0.64	0.47	0.29	0.71
Communication (Language Arts) classes are interesting for you	1747	+	0.63	0.46	0.29	0.71
You enjoy doing work in Communication (Language Arts) classes	1747	+	0.61	0.43	0.30	0.72
Work in Communication (Language Arts) class is easy for you	1747	+	0.60	0.42	0.30	0.72
You look forward to Communication (Language Arts) classes	1747	+	0.66	0.50	0.28	0.70
You learn things quickly in Communication (Language Arts) classes	1747	+	0.59	0.41	0.30	0.72
Test scale					0.29	0.74

Academic self-concept: mathematics (Cronbach's alpha)

Item	Observations	Sign	Item–test correlation	Item–rest correlation	Average inter-item correlation	Alpha
You like work in Mathematics class	1747	+	0.74	0.62	0.37	0.78
You are good in Mathematics classes	1747	+	0.66	0.51	0.40	0.80
Mathematics classes are interesting for you	1747	+	0.66	0.52	0.40	0.80
You enjoy doing work in Mathematics classes	1747	+	0.68	0.55	0.39	0.79
Work in Mathematics class its easy for you	1747	+	0.66	0.52	0.40	0.80
You look forward to Mathematics classes	1747	+	0.75	0.63	0.37	0.78
You learn things quickly in Mathematics classes	1747	+	0.68	0.54	0.39	0.79
Test scale					0.39	0.82

Young Lives School Survey in Peru: Design and Initial Findings

This paper presents the methodology and initial findings from the Young Lives School Survey in Peru, which looked at inequality in educational opportunities and outcomes of children from the Young Lives study. Information was collected in 132 schools in nine regions of Peru, covering school quality (inputs available at school such as its infrastructure, and educational processes within classrooms such as the social and pedagogical interactions that constitute the classroom climate), responsiveness to students' needs and potential (e.g. instruction in their mother tongue, support for students at risk of dropping out), as well as achievement and socio-emotional outcomes.

A wide range of instruments was used to collect the data, including questionnaires which were completed by students, teachers, and head teachers; sociolinguistic questionnaires for children living in bilingual areas; achievement tests in maths and reading comprehension; teacher attendance; and an assessment of mathematics teachers' pedagogical content knowledge.

The survey also included a qualitative sub-study of how indigenous students experience schooling in different educational contexts. Data were collected from a sub-sample of students, teachers, and caregivers through interviews, focus groups, and school observations.

Overall, preliminary results show that there are important differences in the background of students attending different types of school, which suggests that the Peruvian educational system may be reinforcing social inequalities. The qualitative sub-study showed similar results, with indigenous children's schooling experience often not aligned with their linguistic and cultural backgrounds.

About Young Lives

Young Lives is an international study of childhood poverty, involving 12,000 children in 4 countries over 15 years. It is led by a team in the Department of International Development at the University of Oxford in association with research and policy partners in the 4 study countries: Ethiopia, India, Peru and Vietnam.

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

Young Lives Partners

Young Lives is coordinated by a small team based at the University of Oxford, led by Professor Jo Boyden.

- *Ethiopian Development Research Institute, Ethiopia*
- *Centre for Economic and Social Sciences, Andhra Pradesh, India*
- *Sri Padmavathi Mahila Visvavidyalayam (Women's University), Andhra Pradesh, India*
- *Grupo de Análisis para el Desarrollo (Group for the Analysis of Development), Peru*
- *Instituto de Investigación Nutricional (Institute for Nutrition Research), Peru*
- *Center for Analysis and Forecasting, Vietnamese Academy of Social Sciences, Vietnam*
- *General Statistics Office, Vietnam*
- *Child and Youth Studies Group (CREET), The Open University, UK*
- *Oxford Department of International Development (ODID), University of Oxford, UK*
- *Save the Children*

Contact:

Young Lives

Oxford Department of
International Development (ODID),
University of Oxford, Queen Elizabeth
House, 3 Mansfield Road,
Oxford OX1 3TB, UK
Tel: +44 (0)1865 281751
Email: younglives@younglives.org.uk
Website: www.younglives.org.uk