Country Report

Young Lives School Survey, 2016–17:
Evidence from Vietnam

Padmini Iyer, Obiageri Bridget Azubuike and Caine Rolleston

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Young Lives

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About Young Lives

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

The Young Lives school survey in Vietnam has been funded by Irish Aid and the Norwegian Ministry of Foreign Affairs.

Summary

This report provides an overview of the Young Lives secondary school survey in Vietnam, which was conducted in 2016-17 with 8,740 Grade 10 students in five provinces (Ben Tre, Da Nang, Hung Yen, Lao Cai and Phu Yen). The survey was designed to allow analysis of the factors that shape students' learning and progression over one academic year, and descriptive analyses of the survey data are presented in this report.

The secondary school survey examined school effectiveness using three outcome measures: Grade 10 students' performance in maths, functional English, and transferable skills. Student performance in maths and functional English was assessed using repeated measures, with linked cognitive tests administered at the beginning and end of Grade 10. This allowed students' progress over the first year of upper secondary schooling to be considered in relation to their individual, class, teacher and school factors. Students' problem-solving and critical-thinking skills were additionally assessed at the end of the school year using the transferable skills test. This survey design has generated rich evidence about school and class effectiveness, and the drivers of learning within schools across the Young Lives sites in Vietnam.

1. Introduction and overview

1.1 The Young Lives study

Young Lives is an international study of childhood poverty that has followed 12,000 children in Ethiopia, India (the states of Andhra Pradesh and Telangana), Peru and Vietnam since 2002. Young Lives follows two groups of children in each country; a 'Younger Cohort' born in 2001-2, and an 'Older Cohort' born in 1994-95. This means that we can compare the same children at different ages to see how their lives are changing, as well as comparing different children at the same age, to see how communities have changed over time. In all four countries, a sentinel-site sampling design is employed. The Young Lives sample is not nationally representative; in each country, 20 purposively-selected sites were chosen at the beginning of the study to represent national diversity, with a pro-poor bias.[1]

The household survey has been conducted with Young Lives children and their families every three to four years since 2002, with Round 5 of the household survey conducted in 2016-17. Child questionnaires, household questionnaires and community questionnaires gather data on household composition, livelihood and assets, household expenditure, child health, access to basic services, and education.

In 2010, school surveys were introduced to explore Young Lives children's experiences of schooling and education in more depth. Primary school surveys were conducted in India (2010), Peru (2011), Vietnam (2011-12) and Ethiopia (2012-13), and in 2016-17, a further round of Young Lives school surveys was conducted at upper primary level (in Ethiopia) and secondary level (in India, Peru and Vietnam). This report focuses on the 2016-17 school survey in Vietnam.

1 See section 1.3 for more details.

1.2 School survey in Vietnam

Following the 2011-12 Young Lives Vietnam primary school survey (see Rolleston et al. 2013), Young Lives conducted a secondary school survey in Vietnam in 2016-17. The study examined school effectiveness through multiple outcome measures: Grade 10 students' performance in maths, functional English and transferable skills. Student performance in maths and functional English was assessed using repeated measures, which involved the administration of linked cognitive tests at the beginning and the end of Grade 10. This design allowed students' learning progress over one academic year to be considered in relation to student, class, teacher and school factors. Transferable skills (problem solving and critical thinking) were assessed using a cross-sectional measure at the end of the academic year.

Children from the Young Lives Younger Cohort and their peers who participated in the 2011-12 primary school survey were included in the 2016-17 school survey, which offers a rich longitudinal perspective on the school system in Vietnam.

During the design phase of the survey, priority areas for upper secondary education policy and practice in Vietnam were identified in consultation with key stakeholders, including the Vietnam Ministry of Education and Training (MOET), World Bank, Asian Development Bank and UNICEF. Based on these consultations, the survey was guided by five research questions:

1. What are the key student, teacher, class and school factors associated with learning outcomes in key curriculum subjects in Grade 10?
2. To what extent do schools support the development of transferable skills such as problem solving and critical thinking in Grade 10?
3. What are the factors associated with transition to upper secondary school?
4. How are learning outcomes in, and transition to, Grade 10 affected by ethnic background?
5. To what extent can learning outcomes in, and transition to, Grade 10 be linked to learning outcomes in Grade 5?

These research questions will be explored in forthcoming publications from Young Lives. In this report, we outline key aspects of the survey methodology (Parts 1 and 4), provide descriptive analysis at student, class, teacher and school-level (Part 2), and present findings on student learning outcomes in maths, functional English and transferable skills (Part 3).

1.3 Sample design and site selection

The 20 Young Lives sites in Vietnam are located in five provinces: Ben Tre, Da Nang, Hung Yen, Lao Cai and Phu Yen. Each site is made up of one to three communes, and the sites were selected in 2001 to ensure that the household survey reflected the cultural and geographic diversity of the country, including urban-rural differences, with a pro-poor bias (Nguyen 2008).[2]

In the 2011-12 primary school survey, all primary schools located within the 20 Young Lives sites which were attended by one or more Younger Cohort children were included in the survey sample (Rolleston et al. 2013). However, since upper secondary schools in Vietnam are larger and more dispersed than primary schools, a different sampling approach was adopted for the 2016-17 secondary school survey. If there is no upper secondary school within their commune, students typically travel to the nearest upper secondary school in their district. While there are exceptions (e.g. ethnic minority students who travel beyond their district to enrol in ethnic minority boarding schools), this pattern of upper secondary enrolment led to the decision to sample all upper secondary schools in the 14 districts in which the 20 Young Lives sites are located – a total of 55 schools.

A pre-survey tracking exercise (conducted in February – March 2016) revealed a large number of Grade 10 students enrolled in these 55 schools – 17,344 students in total – indicating that it would not be feasible to adopt a census sampling approach for Grade 10 students in Young Lives districts. It was therefore decided to sample a maximum of five Grade 10 classes per school, as this provides sufficient variation for analytical purposes. In schools with six or more Grade 10 classes, classes were sampled using a random selection process. The final school survey sample consisted of 7,429 students in 220 classes in 52 schools (see section 2.1 for more details).[3]

1.4 Survey instruments

The school survey included three cognitive tests to assess student learning over the course of one school year, along with a range of background instruments designed to contextualise findings on learning outcomes (see Figure 1). All cognitive tests were developed in 2015-16 through a process of item selection, translation and adaptation, alongside qualitative and quantitative piloting.[4] Three background questionnaires were also included in the survey: a student questionnaire; a principal questionnaire; and a teacher questionnaire. All instruments (excluding the English test) were presented in Vietnamese.

2 See Appendix 1 for a description of the Young Lives sites in Vietnam.

3 Three schools refused to participate in the survey.

4 For more details on the design and development of the cognitive tests, see Azubuike et al. (2017), Iyer and Azubuike (2017) and Iyer and Moore (2017).

Figure 1. *Survey instruments administered in 2016-17 Vietnam school survey*

Student outcome measures	Background instruments
Maths test Repeated measures, administered at the beginning and end of Grade 10. Assessed students' curriculum knowledge and ability to apply that knowledge in less familiar contexts. Completed by all students in survey classes.	**Principal questionnaire** Collected background data on the principal and the school. Completed by the principal in each school.
	Teacher questionnaire Collected background data on teachers, including teacher motivation and section-level information. Completed by all maths and English teachers who taught survey classes.
Functional English test Repeated measures, administered at the beginning and end of Grade 10. Assessed students' English reading and comprehension skills relevant to the contexts in which they may use the language. Completed by all students in survey classes.	**Student questionnaire** Collected background data on students (including academic support within and beyond school, psychosocial measures and perceptions of the classroom instructional environment). Completed by all students in survey classes.
Transferable skills test Cross-sectional measure, administered at the end of Grade 10. Assessed problem-solving and critical-thinking skills. Completed by all students in survey classes.	**School facilities observation** Collected data on school infrastructure and facilities. Completed by fieldworkers.

Data collection took place in two waves:

- Wave 1 (September – October 2016): At the beginning of the school year, Grade 10 students' learning levels were assessed using two cognitive tests: maths and functional English. Questionnaires were used to collect data on students' backgrounds, while each principal completed a set of questions about themselves and about their school. Additionally, fieldworkers completed an observation of school facilities and collected administrative data on student attendance.
- Wave 2 (March – April 2017): At the end of the school year, Grade 10 students' learning levels were re-measured using two cognitive tests: mathematics and functional English. Students also completed a questionnaire of psychosocial scales, provided their perceptions of the 'classroom instructional environment' and completed a third cognitive test assessing transferable skills (problem solving and critical thinking). Teachers completed a questionnaire and selected psychosocial scales relating to teacher motivation, while each principal completed a set of questions relating to school management and leadership practices. Fieldworkers also collected administrative data on student and teacher absenteeism, retention and change during the school year.

The following sections provide overviews of the cognitive tests and background questionnaires.

1.4.1 Maths test

In the 2016-17 school survey, learning quality has been conceptualised both in terms of progress on curriculum knowledge and students' ability to apply their knowledge and skills in less familiar contexts.[5] This is to reflect the priorities of the education system at secondary level. We identified the TIMSS (Trends in International Mathematics and Science Study) maths assessment framework as a useful way to assess students' mathematical ability in these terms, as it distinguishes between the following three mathematical cognitive domains:

- *Knowing:* the facts, concepts and procedures students need to know.
- *Applying:* the ability of students to apply knowledge and the conceptual understanding to solve problems or answer questions.
- *Reasoning:* going beyond the solution of routine problems to encompass unfamiliar situations, complex contexts, and multi-step problems. (Grønmo et al. 2015: 24)

In addition to these cognitive domains, the maths test was based around mathematical content domains appropriate for Grade 10 students in Vietnam, with additional consideration for the domains relevant to curricula in India and Ethiopia. Eight common content domains were identified in the maths curricula for the survey grades in Vietnam, India and Ethiopia, and test items were selected from within these domains in order to reflect the curriculum priorities in each country:

- Basic number competency
- Integers, rational numbers, powers and bases
- Fractions, decimals, ratios and percentages
- Area, perimeter, volume and surface area
- Geometry and shapes
- Algebra
- Measurement, charts and graphs
- Reasoning, problem solving, and applications in daily life.

1.4.2 Functional English test

An English language test was included in the 2016-17 school survey as a reflection of the status of English in Vietnam as a 'transferable skill', with relevance for continuing education, labour market opportunities and social mobility (Graddol 2010). While students' exposure to English varies across the five Young Lives provinces in Vietnam (both within and beyond school), the language is seen as increasingly relevant by policymakers and individuals alike.

The construct assessed in the Young Lives English test was 'functional English', which can be defined as the 'application of […] skills in purposeful contexts and scenarios that reflect real-life situations' (OFQUAL 2011: 10). In this sense, the English test diverged somewhat from the school curriculum. Due to practical and logistical considerations of conducting a large-scale survey, the test comprised multiple-choice questions – a limitation which meant

5 See Iyer and Moore (2017) for a more detailed discussion of the way in which quality learning has been conceptualised in the 2016-17 school surveys.

that it only captured one dimension of the functional English construct, that is, language knowledge and reading skills.

Within the functional English construct, the test focused on the types of skills which 15 year olds in Vietnam were most likely to use or to need in the future. Four skills were identified:

- *Word identification:* identifying simple vocabulary which is likely to be familiar to students. With a particular focus on language relating to their everyday environments and to education, questions relating to this skill are particularly suited to learners at a lower level.
- *Word meaning and contextual vocabulary:* identifying the meaning of unfamiliar words from their use in a sentence, or by identifying a synonym/antonym. Questions in this skill domain are of particular relevance for those who are likely to have greater exposure to English out of school, or those who have a higher level of English.
- *Sentence construction and comprehension:* completing sentences correctly, using appropriate grammatical concepts, and combining sentences together. Questions relating to this skill can be at a range of difficulty levels, but require learners to have some ability to understand the meaning of complete sentences.
- *Reading and comprehension:* reading a range of texts (stories, posters, factual passages) and understanding both explicitly stated facts and implicit inferences. Questions relating to this skill can be at a range of levels, but require learners to be able to read and comprehend English texts. Questions relating to implicit inferences rather than explicitly stated facts require a higher level of English language ability.

1.4.3 Transferable skills test

If the development of foundational skills such as numeracy and literacy is central to the 'first phase' of quality education, then the development of transferable skills can be seen as the 'next phase'. Transferable skills, also referred to as 'twenty-first century skills', are widely understood to include a range of cognitive and psychosocial skills that provide young people with 'critically needed tools to be able to succeed in terms of employment, health and personal well-being' (Rankin et al. 2015: 1; see also World Bank 2014; UNESCO 2016). Such skills are seen as essential to prepare young people for 'complex life and work environments in the 21st century' (P21 2015: 6). While the importance of transferable skills at secondary level is emphasised globally and within Young Lives countries, there is still limited evidence on the development of these skills in low- and middle-income countries, including Vietnam (Rankin et al. 2015).

Problem solving and critical thinking are among several 'higher order' cognitive skills which are seen as desirable outcomes for secondary education (World Bank 2014; UNESCO 2016; Iyer and Azubuike 2017). Within an educational context, problem solving and critical thinking can both be considered as domain-specific skills (as required within specific subjects such as maths and the sciences), or as cross-curricular skills (those which can be developed and applied across domains and within 'real-life' situations) (Kuhn 1999; Scherer and Beckman 2014; Greiff et al. 2013). In the 2016-17 school survey, we examined problem solving and critical thinking as cross-curricular skills rather than domain-specific skills. In light of our interest in problem solving and critical thinking as transferable skills, it was more relevant to consider the potential application of such skills within real-life contexts rather than narrowly within school subjects. We examined problem solving and critical thinking as separate constructs, according to the following definitions:

- *Problem solving:* '[a]n individual's capacity to use cognitive processes to resolve real, cross-disciplinary problems where the solution path is not immediately obvious' (Greiff et al. 2013: 74)
- *Critical thinking:* skills such as inference and evaluation which are applied to ill-structured problems, and for which there are no definitive solutions (Kuhn 1999; Thomas and Lok 2015).

1.4.4 *Piloting and final cognitive test specification*

A total of 120 maths items, 120 English items and 46 transferable skills items were selected for piloting in Vietnam. Maths and English items were selected in collaboration with Educational Initiatives,[6] using items from their item bank, while transferable skills items were selected and adapted from publically available PISA 2003 items for problem solving, and from the College Work and Readiness Assessment (CWRA+) for critical thinking.[7] Items were mapped according to the assessment frameworks described above, and graded according to complexity, curriculum content, grade level (for the maths tests), approximate Common European Framework of References for Languages (CEFR)[8] level (for the English tests), and type of skills assessed (for the transferable skills tests).[9]

Pilot data were analysed to generate a range of statistics for item selection. Techniques from Classical Test Theory (CTT) and Item Response Theory (IRT)[10] were used, focusing on face validity, construct validity and internal consistency reliability at the test level, and difficulty, discrimination and the quality of distractors at the item level. This process led to the development of five cognitive tests (Table 1).

Table 1. *Cognitive tests administered in 2016-17 Vietnam school survey*

	1	2	3	4	5
Subject	Maths	Maths	English	English	Transferable skills
Wave	Wave 1	Wave 2	Wave 1	Wave 2	Wave 2
Linkage across waves	Linked between Waves 1 and 2		Linked between Waves 1 and 2		n/a
Number of items	40	40	40	40	23
Format	Multiple choice				

6 Educational Initiatives conduct large-scale assessments and education programmes throughout India and internationally, working with state and national governments and NGOs. Young Lives worked in partnership with Educational Initiatives on the development of the maths and English tests in the 2016-17 school surveys in Vietnam, India and Ethiopia.

7 The CWRA+ tests were originally designed by the Council for Education to assess critical thinking in middle schools in the USA. Existing items were adapted and new items developed based on the CWRA+ format for use in Vietnam.

8 The CEFR framework details six levels of English language proficiency. Young Lives English test items were graded according to the types of language skills and proficiency they required.

9 See section 4.5 for more details of the pilot procedures for all instruments.

10 For a more detailed discussion of pilot data analysis and item selection in the maths and English tests and transferable skills test, see Azubuike et al. (2017) and Iyer and Azubuike (2017), respectively.

1.4.5 *Student background questionnaire*

The student background questionnaire was completed by all Grade 10 students in survey classes. It was administered across Waves 1 and 2 and contained three parts:

- Part 1: home and family background, educational history and experiences, academic support and activities outside school.
- Part 2: psychosocial scales covering future orientation, academic self-confidence, effort, personal development, positive self-concept, assessment domination and need for cognition.[11]
- Part 3: student perceptions of the 'classroom instructional environment' in their maths and English lessons.[12]

1.4.6 *Principal background questionnaire*

The principal background questionnaire was completed by the principal at each school. It was administered at Waves 1 and 2, and contained two parts:

- Part 1: principal background information, professional training and experience, duties at the school.
- Part 2: school background information, leadership, management and decision-making.

1.4.7 *Teacher background questionnaire*

The teacher background questionnaire was completed by all Grade 10 maths teachers and English teachers who taught survey classes. It was completed at the end of the school year, and contained two parts:

- Part 1: teacher background information, professional training and experience and duties at the school.
- Part 2: teacher attitudes and beliefs, including psychosocial scales on wellbeing, relationship with others in the school, and efficacy.[13]

Findings on student psychosocial measures, classroom instructional environment and teacher psychosocial measures are not included here, but will be explored in forthcoming analyses.

[11] For more details on student psychosocial skills, see Little and Azubuike (2017).

[12] For more details on the measurement of classroom instructional environment, see Moore and Rossiter (forthcoming).

[13] For more details on teacher psychosocial measures, see Moore and Rossiter (forthcoming).

2. Student, class, teacher and school characteristics

2.1 Description of the final sample

The final survey sample, presented in Table 2, Table 3 and Table 4, included 52 schools and 220 classes. Almost all schools in the survey were government-run schools, with the exception of four private schools (one in Da Nang sites, three in Hung Yen sites). All classes were included in schools with five or fewer Grade 10 classes, while in schools with six or more Grade 10 classes, five classes were randomly sampled. This led to 55 per cent of all possible Grade 10 classes and students being included in the survey. Due to the prevalence of much larger schools in Da Nang sites and Phu Yen sites, selection of classes through random sampling was more common in these provinces (see Table 3).

Table 2. *School sample, by province*

Province	Number of districts	Schools		
		Government	Private	Total
Ben Tre sites	2	9	0	9
Da Nang sites	3	8	1	9
Hung Yen sites	2	6	3	9
Lao Cai sites	3	12	0	12
Phu Yen sites	4	13	0	13
Total	**14**	**48**	**4**	**52**

Table 3. *Class and student sample, by province*

Province	Classes			Students		
	Total number of Grade 10 classes	Total number of survey classes	Classes sampled (%)	Total number of Grade 10 students	Total number of students in survey classes*	Students sampled (%) **
Ben Tre sites	61	41	67	2568	1711	67
Da Nang sites	119	42	35	4743	1639	35
Hung Yen sites	49	32	65	2007	1292	64
Lao Cai sites	58	47	81	1854	1736	94
Phu Yen sites	113	58	51	4784	2362	49
Total	**400**	**220**	**55**	**15956**	**8740**	**55**

Notes: * Total number of Grade 10 students enrolled in survey classes at Wave 1. ** n/N, where N = total number of Grade 10 students and n = total number of Grade 10 students in survey classes at Wave 1.

According to school registers, a total of 8,740 students were enrolled in survey classes at the beginning of the school year (Wave 1), of which 8,556 completed either the maths or English test at Wave 1. At the end of the school year (Wave 2), 8,115 of these survey students were still enrolled in survey classes,[14] and overall, 7,429 students completed all tests (Wave 1 and Wave 2 in maths and English). These 7,429 students constitute the final survey sample (see Table 4).

14 See section 2.4 for data on reasons for non-enrolment at Wave 2.

Table 4. *Student enrolment and final student sample, by province*

Province	Wave 1		Wave 2	
	Students enrolled in survey classes at W1	Students included in the survey at W1*	Students enrolled in survey classes at W2	Students included in the survey at W2**
Ben Tre sites	1711	1697	1600	1539
Da Nang sites	1639	1618	1599	1435
Hung Yen sites	1292	1260	1194	1134
Lao Cai sites	1736	1637	1526	1323
Phu Yen sites	2362	2344	2196	1998
Total	8740	8556	8115	7429

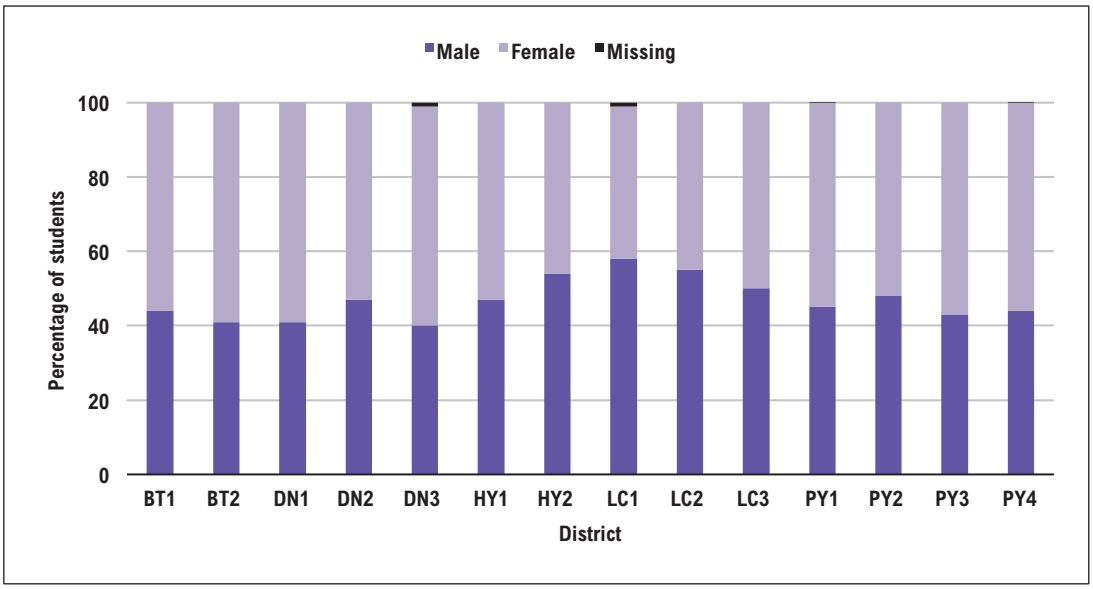
Notes: * Total number of students who completed the Wave 1 maths test or the Wave 1 English test. ** Total number of students who completed Wave 1 and Wave 2 maths tests *and* Wave 1 and Wave 2 English tests.

2.2 Student characteristics[15]

2.2.1 Gender

Overall, there were more female students (54 per cent) than male students (45 per cent) in the survey sample.[16] The gender gap varied considerably by location, with a higher proportion of girls in Ben Tre sites (58 per cent), Da Nang sites (58 per cent) and Phu Yen sites (55 per cent), but a higher proportion of boys in Lao Cai sites (54 per cent). In Hung Yen sites, there was an equal proportion of girls and boys overall, but as shown in Figure 2, this varied slightly by district.

Figure 2. *Student gender, by district*



15 All analysis of student-level data in this section has been weighted to take account of under-sampling in large schools. This means that the student-level data is representative at district level. See section 4.2 for more details on how weights have been developed and applied.

16 These trends are consistent with the 'reverse gender gap' at upper secondary level which has been reported on a national level in Vietnam (GSO and UNICEF 2015).

2.2.2 *Age*

The mean student age in the survey sample was 15.3 years. There was some variation by location, but the mean age in each district only varied from 15.2 years (in Da Nang district 1) to 15.4 years (in Phu Yen district 4).

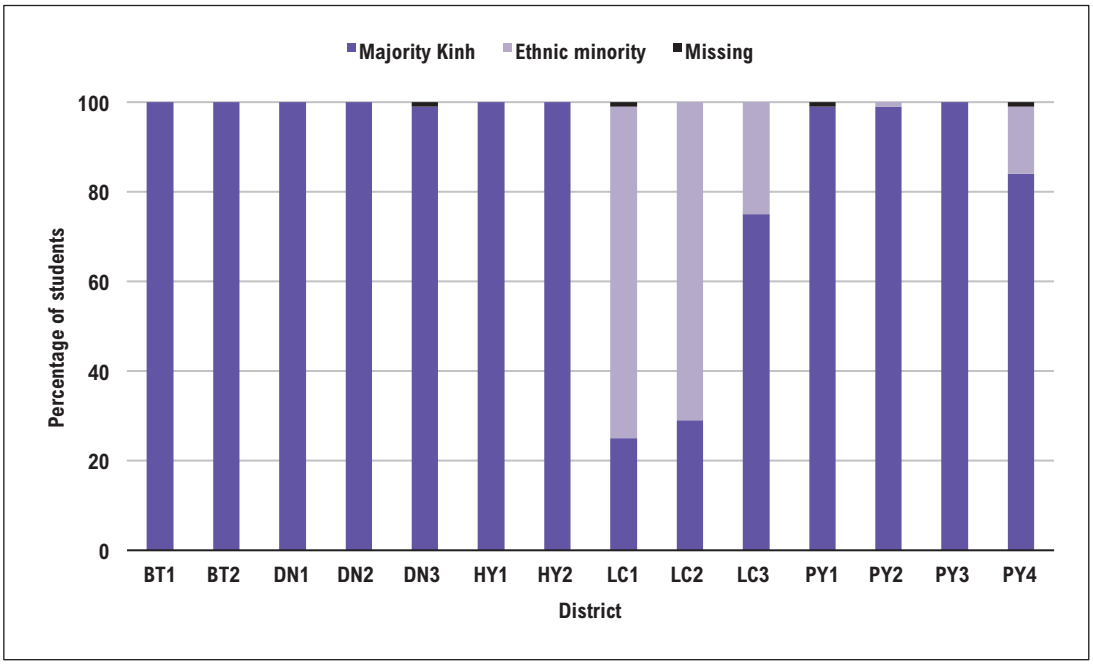
2.2.3 *Ethnicity*

The majority of students in the sample were from ethnic majority Kinh backgrounds (93 per cent), with a small number of students from H'Mong (2 per cent) and Nung, Tay, Dao and Giay backgrounds (1 per cent each); less than 1 per cent of students were from Cham-Hroi and other ethnic minority backgrounds. Over half the students in Lao Cai sites (54 per cent) were from ethnic minority backgrounds, with a small number of students in Phu Yen sites (3 per cent) also from ethnic minority backgrounds (see Table 5). As indicated in Figure 3, the vast majority of students attending schools in Lao Cai districts 1 and 2 were from ethnic minority backgrounds (74 per cent and 71 per cent respectively), with a smaller number of ethnic minority students attending schools in Lao Cai district 3 (25 per cent) and Phu Yen district 4 (15 per cent).

Table 5. Student ethnic groups, by province

Province	Kinh %	H'mong %	Cham-HRoi %	Ede %	Nung %	Tay %	Dao %	Giay %	Other %	Missing %	Total %
Ben Tre sites	100	0	0	0	0	0	0	0	0	0	100
Da Nang sites	99	0	0	0	0	0	0	0	0	1	100
Hung Yen sites	100	0	0	0	0	0	0	0	0	0	100
Lao Cai sites	46	21	0	0	4	6	12	8	3	1	100
Phu Yen sites	97	0	1	1	0	0	0	0	0	1	100
Total	**93**	**2**	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**0**	**100**

Figure 3. *Student ethnic status, by district*



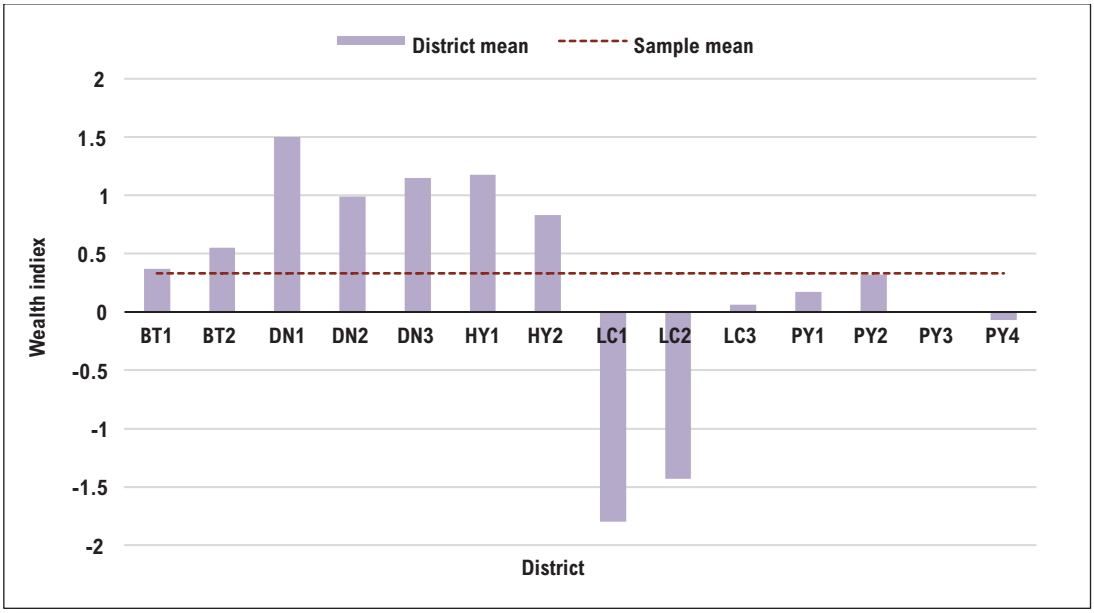
2.2.4 *Background characteristics*

In the student questionnaire, students were asked to report consumer durable assets which they had at home. Using this data, a composite wealth index score was constructed to indicate relative household economic advantage.[17] There was considerable variation in mean household wealth across the districts, with all districts in Da Nang and Hung Yen above the sample mean, and all districts in Phu Yen and Lao Cai below the sample mean. Lao Cai districts 1 and 2 were the poorest districts in the sample, with Da Nang districts 1 and 3 and Hung Yen district 1 the wealthiest (see Figure 4).

Table 6 provides further indicators relating to student advantage within the sample. Perhaps unsurprisingly in light of their relatively low household wealth, over half of the students in Lao Cai sites were the bottom wealth tercile (57 per cent), compared to 11 per cent in Da Nang sites. The vast majority of students in Da Nang sites, Hung Yen sites and Phu Yen sites reported eating three or more meals per day, with a lower proportion of students reporting this in Lao Cai sites (69 per cent) and Ben Tre sites (66 per cent). Just under half the students in Lao Cai sites reported living away from home during term-time (either in a private hostel, a school hostel or with other family members/friends), while almost all students in the other provinces reported living at home during term-time. This is likely to reflect the considerable distances between students' homes in remote, mountainous areas and their upper secondary schools, which are typically located in district centres in Lao Cai.

Students were also asked to report whether they experienced any problems with their health; a higher proportion of students in Da Nang sites (44 per cent) and Phu Yen sites (38 per cent) reported at least one health problem compared to students in the other provinces. Within these provinces, the health problems most commonly reported were sight problems (31 per cent in Da Nang sites) and headaches (18 per cent in Phu Yen sites).

Figure 4. *Student household wealth, by district*



[17] See section 4.4 for more details on how the index was constructed.

Table 6. *Selected indicators of student backgrounds, by province*

Province	Students in the bottom wealth tercile*	Students who report eating three or more meals per day	Students who report living away from home during term-time**	Students who report having any health problems***
	%	%	%	%
Ben Tre sites	28	66	4	30
Da Nang sites	11	86	1	44
Hung Yen sites	16	84	1	34
Lao Cai sites	57	69	47	33
Phu Yen sites	37	86	8	38
Total	**27**	**80**	**9**	**37**

Notes: * According to wealth index. ** Students who live in a private hostel, a school hostel or with other family members/friends. *** Students who report regularly experiencing at least one of the following: sight problems, hearing problems, headaches, fever, stomach problems, other problems.

In terms of household education, almost all students in Ben Tre, Da Nang, Hung Yen and Phu Yen sites reported that both their mother and father could read and write in Vietnamese; by contrast, only two-thirds of the students in Lao Cai sites reported that their mothers could read and write in Vietnamese, with 82 per cent reporting the same for their fathers.

Parental levels of education in Lao Cai sites were also lower compared to the other four provinces. Around half the students in Da Nang and Hung Yen sites and 40 per cent of students in Ben Tre and Phu Yen sites reported that their parents were educated to secondary level, compared to just 30 per cent in Lao Cai sites. Levels of parental education were highest in Da Nang and Hung Yen sites; in Da Nang sites, 20 per cent of students reported that their mothers had undergraduate degrees, with the same proportion reporting this for their fathers; in Hung Yen, these figures were 15 per cent and 20 per cent respectively (see Table 7).

When reporting their educational expectations, over half the students in Ben Tre sites, Da Nang sites and Phu Yen sites (56 per cent in each province) indicated that they expected to gain an undergraduate degree. Slightly less than half the students in Hung Yen sites reported this (47 per cent), with a much lower proportion of students expecting this level of education in Lao Cai sites (34 per cent).

Table 7. *Selected indicators of students' household education, by province*

Province	Parents' literacy		Parents' education				Educational expectations
	Mother can read or write in Vietnamese	Father can read or write in Vietnamese	Mother educated to secondary level	Mother with university degree	Father educated to secondary level	Father with university degree	Students who expect to go to university*
	%	%	%	%	%	%	%
Ben Tre sites	98	97	40	11	41	13	56
Da Nang sites	97	98	49	20	49	20	56
Hung Yen sites	99	99	55	15	47	20	47
Lao Cai sites	67	82	29	7	30	10	34
Phu Yen sites	96	96	40	8	39	13	56
Total	**94**	**95**	**44**	**13**	**43**	**15**	**52**

Note: * Proportion of students who expected to complete an undergraduate degree.

Overall, while students in Da Nang and Hung Yen sites were typically from wealthier backgrounds, students in Ben Tre, Da Nang, Hung Yen and Phu Yen were relatively homogenous in terms of home background; their parents were literate and educated to at least secondary level, they ate at least three meals per day, and they were from ethnic majority Kinh backgrounds (with the exception of a small number of students in Phu Yen district 4). By contrast, students in Lao Cai sites were from much poorer backgrounds, with lower levels of parental literacy and formal education, access to fewer meals per day, and more likely to be from ethnic minority backgrounds. Students in Lao Cai sites were also much more likely to live away from home during term time, and less likely to aspire to university-level education.

2.3 Students' experiences of education[18]

2.3.1 Grade repetition, student absence and dropout

Very few students in the sample had previously repeated a grade, with 1 per cent overall reporting grade repetition at primary level and 1 per cent overall reporting grade repetition at lower secondary level. Two per cent of students in Ben Tre sites and 1 per cent of students in Hung Yen and Phu Yen sites were repeating Grade 10 at the time of the survey (see Table 8). Overall, these patterns are consistent with high levels of correct age-for-grade progression in Vietnam reported elsewhere (Ministry of Education and Training 2015).

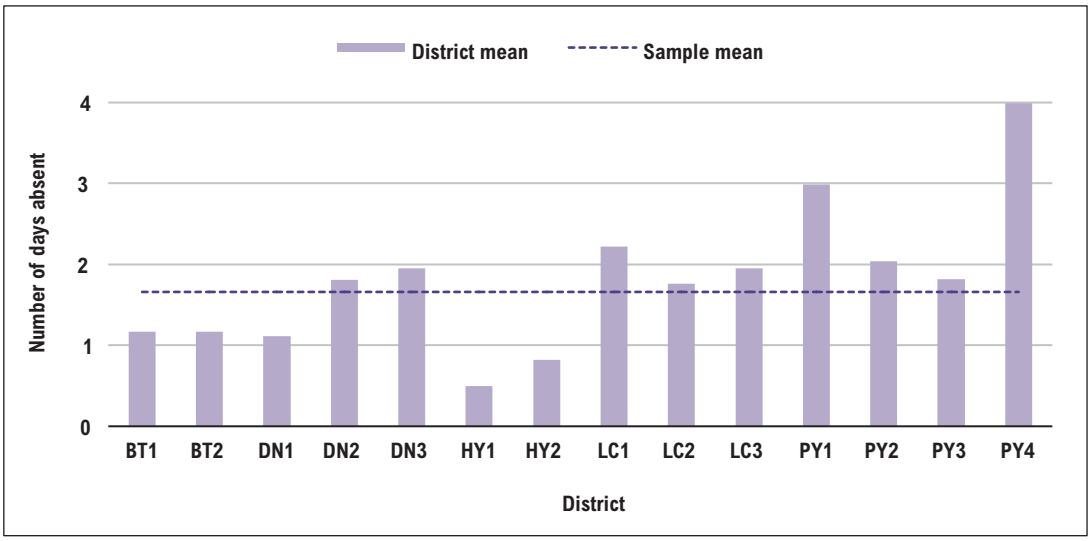
Table 8. *Grade repetition, Grades 1-10*

Province	Students who repeated a grade in primary school (Grades 1-5) %	Students who repeated a grade in lower secondary school (Grades 6-9) %	Students who have repeated Grade 10 %
Ben Tre sites	1	1	2
Da Nang sites	0	1	0
Hung Yen sites	1	1	1
Lao Cai sites	1	1	0
Phu Yen sites	1	1	1
Total	**1**	**1**	**1**

During Wave 2 survey visits, data on student absence since the beginning of the school year were recorded from school registers. As indicated in Figure 5, there were higher-than-average levels of student absence in all Phu Yen and Lao Cai districts, and in two out of three Da Nang districts. However, the mean number of days for which students had been absent across all districts was very low (1.33 days), with the highest mean student absence at only 4 days in Phu Yen district 4.

18 All analysis of student-level data in this section has been weighted to take account of under-sampling in large schools. This means that the student-level data is representative at district level. See section 4.2 for more details on how weights have been developed and applied.

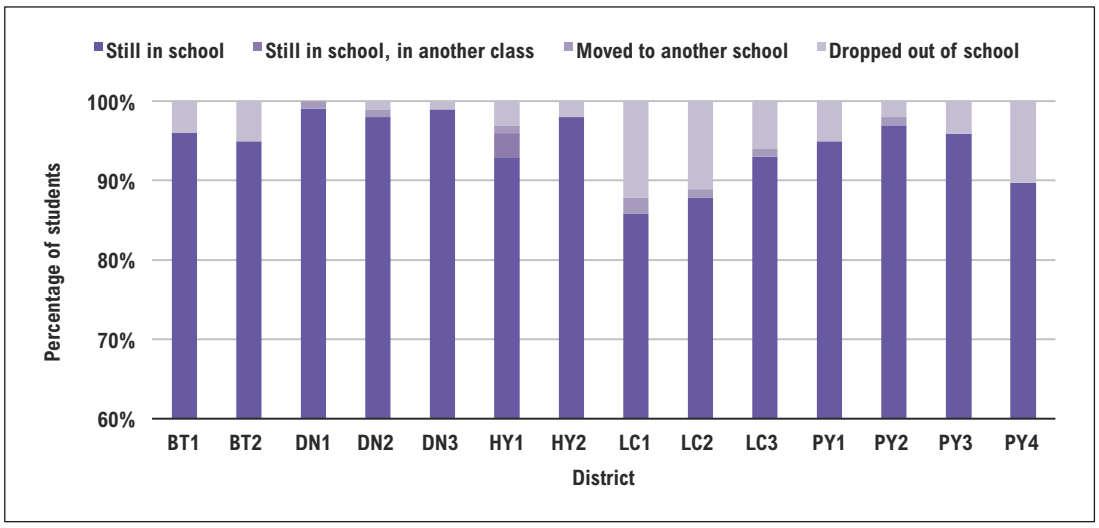
Figure 5. *Student absence in Grade 10, by district*



Note: Figure shows number of days absent from September-October 2016 to March-April 2017, as recorded in school registers.

Patterns of enrolment and dropout over the course of the academic year can be considered by comparing the enrolment status of all students in survey classes at Wave 2 and Wave 1. Figure 6 shows the end-of-year enrolment status of all students enrolled in survey classes at Wave 1, and indicates that almost all students (94 per cent) remained in the same classes within the same schools over the course of the academic year. A small number of students (1 per cent) have moved to a different school, while an even smaller number of students (less than 1 per cent, all in Hung Yen district 1) were in the same schools but had moved to different classes. Four per cent of students had dropped out of school, with clear differences in patterns of dropout between the districts. The highest incidence of dropout was in Lao Cai districts 1 and 2 (12 per cent and 11 per cent respectively), followed by Phu Yen district 4 (10 per cent); the dropout rate in all other districts was much lower, ranging from 1 per cent (Da Nang district 1) to 6 per cent (Lao Cai district 3).

Figure 6. *School enrolment and dropout at Wave 2, by district*



Note: Figure shows enrolment status of all students enrolled in survey classes at Wave 1 (8,740 students) on the first day of Wave 2 data collection.

2.3.2 *Academic support at school*

The student questionnaire asked students to report how frequently their maths and English teachers set homework, and how often these teachers provided follow-up support based on homework (e.g. checking and providing comments on their work). The vast majority of students in Lao Cai sites reported that their maths teachers set homework three or more times per week (80 per cent), with a high proportion of students in Da Nang and Phu Yen sites (64 per cent in each case) reporting the same. By contrast, only around a third of students in Ben Tre sites and less than a quarter of students in Hung Yen sites reported that their maths teachers set homework with the same regularity.

Students in Hung Yen sites also indicated that maths teachers did not often follow up on their homework, with only 3 per cent of students reporting that teachers frequently or always checked homework, and only 7 per cent reporting that teachers frequently or always provided feedback on their homework. By contrast, the majority of students in Lao Cai sites indicated that their maths teachers frequently or always checked their homework (64 per cent), and just under half the reported that their maths teachers frequently or always provided feedback on their homework (48 per cent) (see Figure 7).

English teachers appeared to set students homework less often than their maths teachers; less than half the students in Ben Tre sites (34 per cent), Da Nang sites (46 per cent), Hung Yen sites (36 per cent) and Phu Yen sites (39 per cent) reported that their English teachers set homework three or more times per week, while students in Lao Cai were more likely to report that their English teachers did this (69 per cent). As for maths, students in Hung Yen sites were the least likely to report that their English teachers checked (5 per cent) or provided comments (10 per cent) on their homework frequently or often, with students in Lao Cai sites the most likely to report this (29 per cent and 49 per cent respectively) (see Figure 8).

Figure 7. *Maths homework and teacher support, by province*

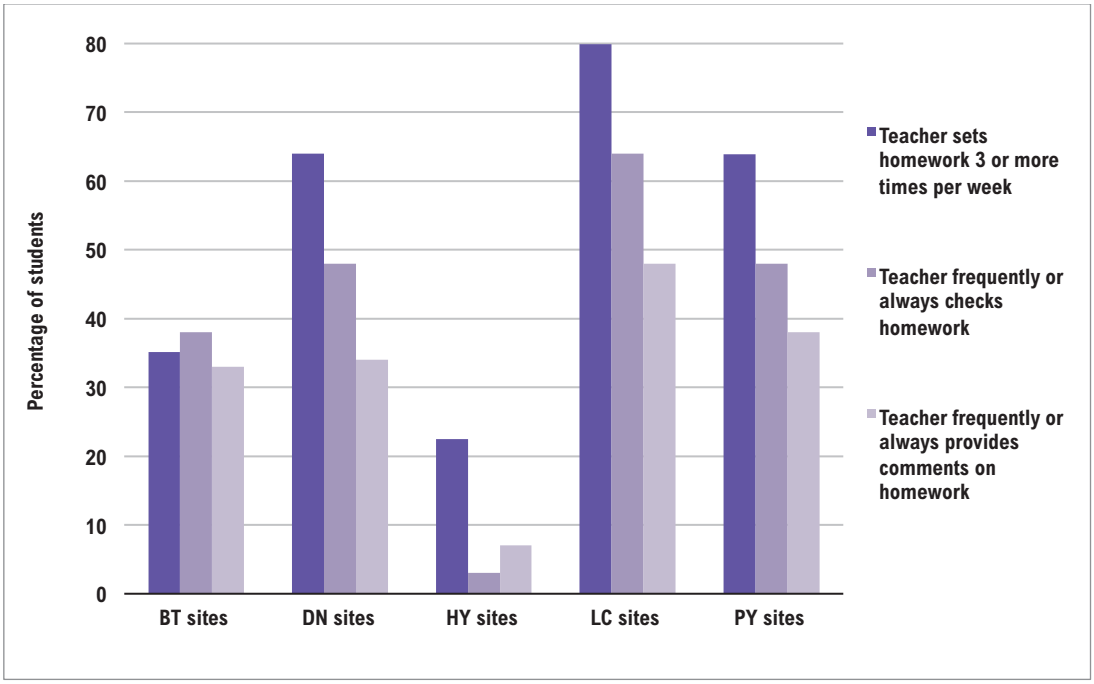
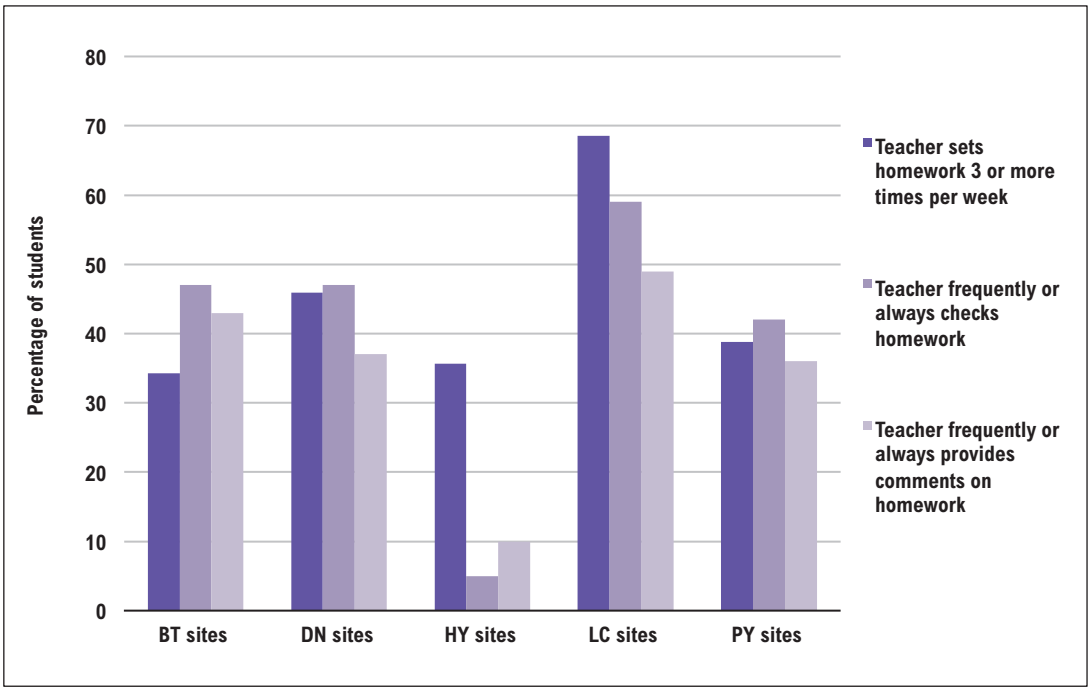


Figure 8. *English homework and teacher support, by province*



2.3.3 *Additional academic activities*

Schools in Vietnam often provide voluntary extra classes for students after formal teaching hours, although the degree to which these extra classes are in fact optional may vary between schools. Participation in private tuition beyond school is also common in Vietnam (World Bank 2014). The student questionnaire collected information on both kinds of additional academic activities, asking whether students attended extra classes and/or private tuition in maths, English or other subjects; the reasons for participating in these activities (whether to excel in the subject or for remedial purposes), and the average amount of time they spent per week on these activities.

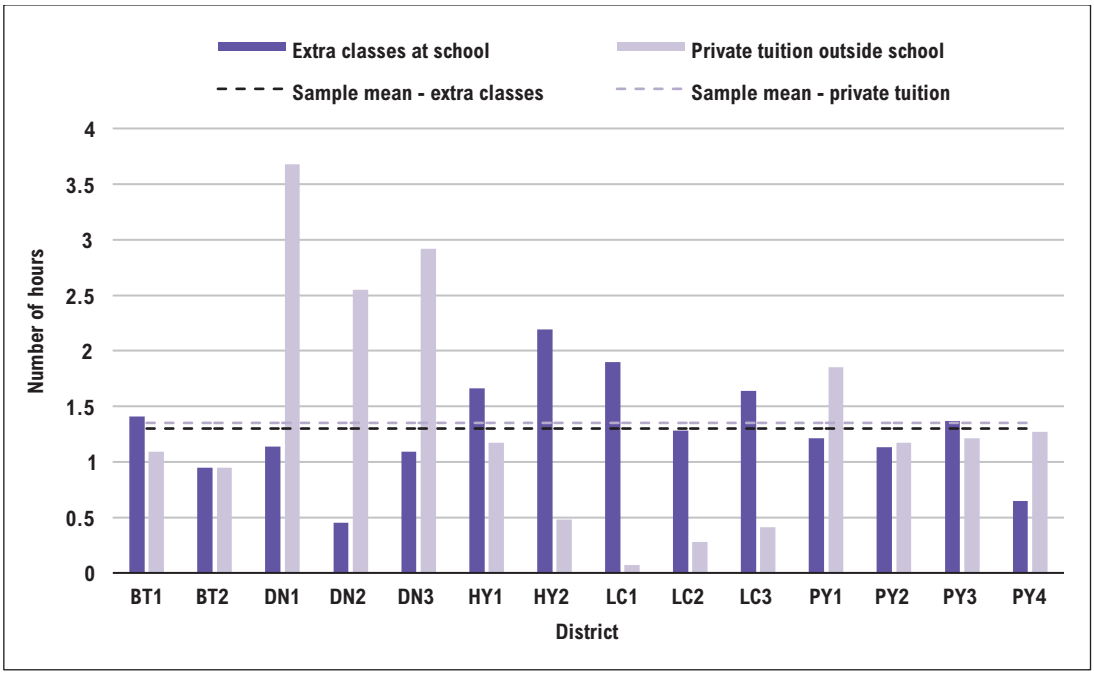
There was considerable variation between provinces in terms of students' participation in extra classes and private tuition (see Table 9). Students in Lao Cai sites were more likely to attend extra classes at school for both maths and English than to attend private tuition in either subject. By contrast, students in Da Nang sites were much more likely to attend private tuition in maths and English than extra classes at school in either subject. Students in Hung Yen sites were more likely to attend extra classes at school than private tuition in both subjects; students in Phu Yen sites were more likely to attend remedial extra classes at school for English, and a fairly low proportion of students in Ben Tre participated in any of these extra academic activities.

Table 9. *Student attendance at extra classes and private tuition, by province*

Province	Maths				English			
	Extra classes at school		Private tuition outside school		Extra classes at school		Private tuition outside school	
	Students who attend to excel	Students who attend for remedial purposes	Students who attend to excel	Students who attend for remedial purposes	Students who attend to excel	Students who attend for remedial purposes	Students who attend to excel	Students who attend for remedial purposes
	%	%	%	%	%	%	%	%
Ben Tre sites	23	29	19	26	16	20	16	20
Da Nang sites	13	16	47	39	11	15	38	32
Hung Yen sites	45	39	24	16	35	36	14	12
Lao Cai sites	43	32	7	6	33	36	5	5
Phu Yen sites	19	20	28	23	12	36	16	14
Total	**24**	**24**	**29**	**25**	**18**	**21**	**21**	**19**

The amount of time spent by students at extra classes as opposed to private tuition varied considerably in maths and English (see Figure 9 and Figure 10). Students in Hung Yen districts 1 and 2 and Lao Cai districts 1 and 3 spent longer than average in extra classes for maths, while students in Da Nang districts 1, 2, and 3 and Phu Yen district 1 spent longer than average in private tuition for maths. Students in Da Nang spent the most time on average participating in these additional academic activities (4.8 hours in total for Da Nang district 1).

Figure 9. *Extra classes and private tuition in maths – mean hours attended per week, by district*

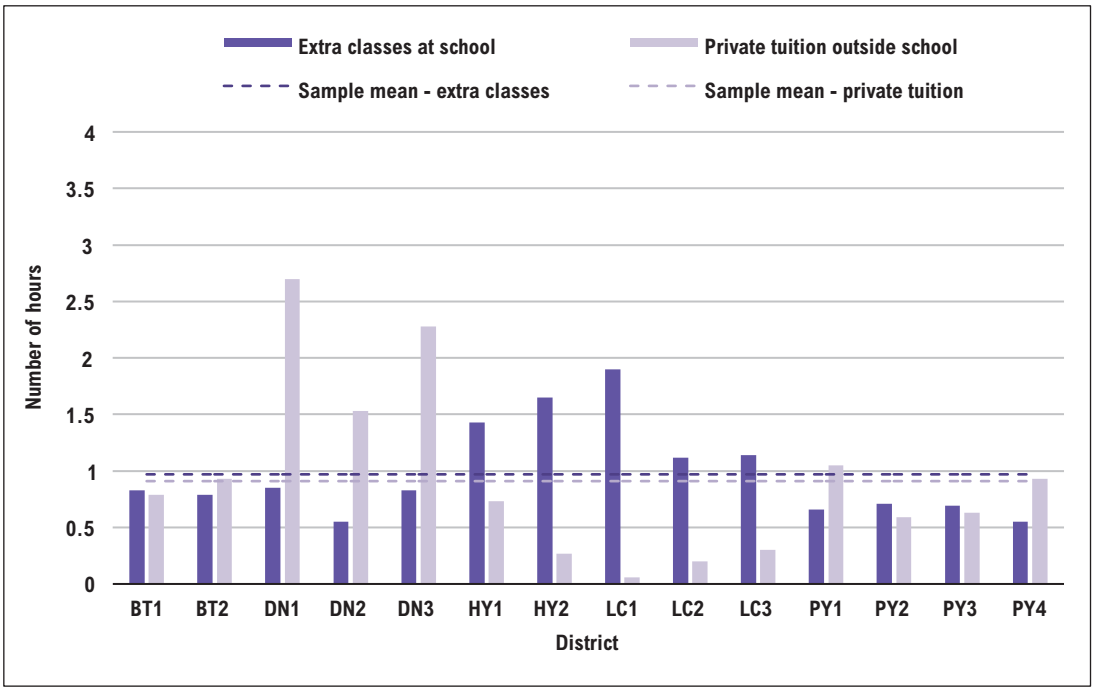


Comparing Figure 9 and Figure 10, it is apparent that on average, students spent slightly less time on additional academic activities in English per week (0.97 hours in extra classes, 0.91 hours in private tuition) than for maths (1.3 hours in extra classes, 1.35 hours in private

tuition). Otherwise, students' participation in additional academic activities for English across the districts is similar to the pattern for maths; students in Da Nang districts spent much longer in private tuition than students in other districts, while students in Lao Cai districts and Hung Yen districts spent longer in extra classes provided at school.

Students across the districts reported spending on average one hour per week per subject in additional academic activities, whether at extra classes provided by their schools, or in private tuition beyond school. Although students in Lao Cai sites and Hung Yen sites were less likely to access private tuition, they were nevertheless accessing additional academic support in the form of extra classes provided at school.

Figure 10. *Extra classes and private tuition in English – mean hours attended per week, by district*



2.3.4 *Academic support and engagement at home*

In addition to questions on participation in additional academic activities, the student questionnaire asked students about the level of academic support and engagement they received from their parents (or someone else) at home. Two-thirds of students reported that their parents discussed their school performance at least once a week, with students in Da Nang sites (72 per cent) and Ben Tre sites (70 per cent) most likely to report this, and students in Lao Cai sites (56 per cent) the least likely to report this. Fewer students reported that their parents engaged with their performance in specific subjects; across the provinces, between 28 per cent (in Lao Cai and Phu Yen sites) and 43 per cent (in Da Nang sites) reported that their parents discussed their performance in maths at least once a week, with a lower proportion of students reporting the same for English (from 17 per cent in Lao Cai sites to 36 per cent in Da Nang sites). Very few students reported that their parents or someone else at home helped them with their homework in these subjects, with only 17 per cent of students reporting this for maths and 11 per cent for English (see Table 10).

Table 10. *Academic support and engagement at home, by province*

Province	Students who reported that a parent (or someone else at home) does the following at least once a week:					
	Discusses how well they are doing at school	Helps with maths homework	Discusses how they are performing in maths	Discusses how maths can be applied in everyday life	Helps with English homework	Discusses how they are performing in English class
	%	%	%	%	%	%
Ben Tre sites	70	15	35	20	8	21
Da Nang sites	72	21	43	26	17	36
Hung Yen sites	63	19	34	23	10	24
Lao Cai sites	56	13	28	20	7	17
Phu Yen sites	62	14	28	16	8	20
Total	**66**	**17**	**35**	**21**	**11**	**25**

In light of the assessment of functional English in the survey (see sections 1.4 and 3.3), students were also asked about their exposure to English and the activities they engaged in using English. As evident in Table 11, students reported very low levels of exposure to English, with between 2 and 9 per cent of students reporting that they spoke to family and friends regularly in English. The most common activities for which students reported using English were watching television or movies (21 per cent overall) and using the internet (33 per cent); students in Da Nang sites were the most likely to report engaging in these activities (33 per cent and 45 per cent respectively), with students in Lao Cai sites the least likely to report the same (14 per cent and 23 per cent respectively).

Overall, students reported relatively low levels of academic engagement and support at home, and limited exposure to and use of English language. Students in Da Nang sites were the most likely to report academic engagement and support at home, both in general and specifically in maths and English, and were also the most likely to engage with English-language media.

Table 11. *Student exposure to English, by province*

Province	Students who regularly speak in English to the following people:					Students who regularly do the following activities in English:			
	Mother	Father	Siblings	Friends	School mates	Read books, magazines, newspapers	Watch TV or movies	Use the internet (e.g. Facebook)	Write emails or letters
	%	%	%	%	%	%	%	%	%
Ben Tre sites	1	1	4	4	8	5	18	31	3
Da Nang sites	4	3	7	10	10	11	33	45	7
Hung Yen sites	2	2	6	4	9	6	19	31	5
Lao Cai sites	0	1	2	3	7	4	14	23	4
Phu Yen sites	1	1	4	4	9	5	14	28	4
Total	**2**	**2**	**5**	**6**	**9**	**7**	**21**	**33**	**5**

2.4 School, principal, class and teacher characteristics[19]

2.4.1 School and principal characteristics

Selected school and principal characteristics across the provinces are presented in Table 12. Schools in the survey were generally well-established, with the average school in the survey established 26 years ago and not much variation in mean school age across the provinces. The average principal in the survey was male, in their late forties and from an ethnic majority Kinh background; around 40 per cent of principals in Lao Cai were women, as were around one-third of the principals in Da Nang. Only one principal in the survey – at a school in Lao Cai – was from an ethnic minority background. The majority of principals were from the province in which their school is based, with Lao Cai and Da Nang again the exceptions to this trend.

Principals in Ben Tre sites were on average the most experienced (9 years serving as a principal), with principals in Da Nang sites on average the least experienced (3 years serving as a principal). Principals in Da Nang and Hung Yen sites were the most highly qualified, with over half of the principals in those provinces with postgraduate degrees; around 40 per cent of the principals in Lao Cai were similarly qualified, while the vast majority of principals in Ben Tre and Phu Yen had undergraduate degrees. Almost all the principals in the survey had been awarded the title of 'Excellent Teacher' in the past, although fewer principals in Ben Tre sites (67 per cent) had been awarded this title compared to those in other provinces.[20]

Table 12. *Selected school and principal characteristics*

Province	Mean age of school (years)	Mean age (years)	Male (%)	Ethnic majority Kinh (%)	From the same province as the school (%)	Mean years as a principal	Have under-graduate degree (%)	Have post-graduate degree (%)	Ever been awarded the title of 'Excellent Teacher' (%) *
Ben Tre sites	25	52	100	100	100	9	89	0	67
Da Nang sites	29	42	67	100	44	3	44	56	89
Hung Yen sites	27	46	89	100	67	4	44	56	89
Lao Cai sites	27	46	58	92	42	7	42	42	83
Phu Yen sites	24	53	100	100	62	8	85	15	100
Total	**26**	**48**	**83**	**98**	**62**	**7**	**62**	**33**	**87**

Note: *At school, district or province level.

Admission to upper secondary school is typically selective in Vietnam (Nguyen and Nguyen 2007; World Bank 2014). As Table 13 indicates, around two-thirds of the survey schools selected students for entry into Grade 10 based on an examination (65 per cent). Half the schools required only an entrance exam, while a small number of schools (17 per cent) used an exam plus additional criteria in order to select students for entry. Just under one-fifth of the schools had no admission criteria for Grade 10 (i.e. all students who applied gained entry): three schools in Lao Cai sites, two schools in Ben Tre sites, and two schools in Phu Yen sites.

19 Analysis of school, principal, class and teacher data does not include weights. School and principal data remains representative at the district level without weights, but class and teacher data are only representative of the classes and teachers included in our sample. See section 4.2 for more details on how weights have been developed and applied.

20 'Excellent Teacher' is a professional award that is given at school, district and province levels. Teachers are required to formally enter the selection process. If teachers had been awarded the title of Excellent Teacher at more than one level (e.g. district and province), they were asked to record the highest level only.

Table 13. *Criteria for admission to Grade 10, by province*

Province	Selective schools				Non-selective schools			
	Entrance exam		Entrance exam plus other criteria *		All students who apply gain entry		Other criteria for admission **	
	N	%	N	%	N	%	N	%
Ben Tre sites	7	78	0	0	2	22	0	0
Da Nang sites	7	78	1	11	0	0	1	11
Hung Yen sites	5	56	2	22	2	22	0	0
Lao Cai sites	2	17	3	25	3	25	4	33
Phu Yen sites	5	38	2	15	2	15	4	31
Total	**26**	**50**	**8**	**15**	**9**	**17**	**9**	**17**

Notes: * Schools which selected students based on an entrance exam plus other criteria were: Da Nang sites - 1 school for students from a specific area; Hung Yen sites - 1 school for students from a specific area, 1 private school with 'other' (non-specified) criteria for entry; Lao Cai sites - 2 schools for students from remote areas, 1 boarding school for ethnic minority students from remote areas; Phu Yen sites - 1 school for students from remote areas, 1 school for ethnic minority students from remote areas. ** Schools which selected students based on other criteria (no entrance exam) were: Da Nang sites - 1 private school with 'other' (non-specified) criteria for entry; Lao Cai sites - 3 schools for students from remote areas, 1 boarding school; Phu Yen sites - 4 schools for students from remote areas.

Schools in the sample were generally well-equipped, with almost all schools equipped with at least one laboratory (83 per cent), a functional library (94 per cent), functional internet access (96 per cent), a sports or play area (88 per cent), and separate toilet facilities for girls and boys (98 per cent) (see Table 14 and Table 15). The majority of schools in Da Nang also had a gymnasium (78 per cent), but these were not common in the other provinces.

Table 14. *School facilities, by province*

Province	Schools with at least one laboratory		Schools with a functional library*		Schools with functional internet access		Mean number of computers in school available for students**	Schools with separate toilets for girls and boys	
	No.	%	No.	%	No.	%	No.	No.	%
Ben Tre sites	8	89	8	89	8	89	42	9	100
Da Nang sites	9	100	8	89	8	89	75	8	89
Hung Yen sites	5	56	8	89	9	100	36	9	100
Lao Cai sites	11	92	12	100	12	100	32	12	100
Phu Yen sites	10	77	13	100	13	100	52	13	100
Total	**43**	**83**	**49**	**94**	**50**	**96**	**47**	**51**	**98**

Notes: * A 'functional library' was defined as a collection of books (not including textbooks) to which students had regular access. ** This referred specifically to computers available for use by students, and not computers used for administrative work or exclusively by teachers and staff.

Table 15. *School sports facilities, by province*

Province	Schools with a sports or play area		Schools with a swimming pool		Schools with a gymnasium	
	No.	%	No.	%	No.	%
Ben Tre sites	8	89	0	0	0	0
Da Nang sites	7	78	1	11	7	78
Hung Yen sites	8	89	1	11	2	22
Lao Cai sites	11	92	0	0	2	17
Phu Yen sites	12	92	1	8	1	8
Total	**46**	**88**	**3**	**6**	**12**	**23**

2.4.2 Class and teacher characteristics

Table 16 presents selected characteristics of survey classes. The mean class size in the sample was 40 students, with not much variation in class size by location (from 36 students in Lao Cai sites to 42 in Ben Tre sites). Students in survey classes received on average 3 hours of maths teaching per week and 2.6 hours of English teaching per week, and the number of teaching hours in the two subjects was fairly consistent across the provinces. The majority of classes had regular teaching in the morning (67 per cent), and this was particularly common in Lao Cai (93 per cent of classes) and Hung Yen (88 per cent); just under half the classes in Phu Yen (48 per cent), Da Nang (43 per cent) and Ben Tre (42 per cent) had regular teaching in the afternoon.

In around a third of the classes, students were allocated randomly to their class (34 per cent); this was particularly common in Lao Cai (82 per cent of classes), but less common in the rest of the provinces. The most common method of allocating students to classes in Hung Yen was by ability (63 per cent of classes), but streaming exclusively by ability was less common in the other provinces. In Ben Tre (61 per cent of classes), Da Nang (57 per cent) and Phu Yen (62 per cent), a combination of two or methods was more commonly used to allocate students to classes – for example, ability in specific subjects.[21]

Table 16. *Selected class characteristics, by province*

Province	Mean class size	Mean hours of maths teaching per week	Mean hours of English teaching per week	Classes with regular teaching in the morning (%)	Classes with regular teaching in the afternoon (%)	Student allocation to the class		
						Randomly (%)	By ability (%)	A combination of methods (%)
Ben Tre sites	42	3.0	2.3	58	42	29	10	61
Da Nang sites	39	3.0	2.7	52	43	33	5	57
Hung Yen sites	40	3.0	2.5	88	0	6	63	13
Lao Cai sites	36	2.9	2.7	93	0	82	13	2
Phu Yen sites	41	3.1	2.7	52	48	17	9	62
Total	**40**	**3.0**	**2.6**	**67**	**29**	**34**	**17**	**41**

There were 212 maths teachers who taught survey classes in the sample. These teachers were on average in their late 30s, almost all from ethnic majority Kinh backgrounds (99 per cent), mostly from the same province in which they were teaching (69 per cent), and with around 15 years of teaching experience. Maths teachers were slightly more likely to be female, with a ratio of 54:46 female to male maths teachers in the sample. The vast majority of teachers had undergraduate degrees (79 per cent), with one-fifth of teachers holding post-graduate degrees; around two-thirds of the teachers had previously been awarded the title of 'Excellent Teacher'. All but one of the teachers (who taught in a school in Phu Yen) reported that they had specialised in maths during their teacher training (see Table 17).

21 The options for selecting students into a class were: randomly, alphabetically, by ability, according to the level of fees they pay, by choice of subject, other method, 'a combination of two or more of the above'.

Table 17. *Selected maths teacher characteristics, by province*

Province	Mean age	Male (%)	Ethnic majority Kinh (%)	From same province as the school (%)	Mean years as a teacher	Have under-graduate degree (%)	Have post-graduate degree (%)	Ever been awarded the title of 'Excellent Teacher' (%)	Specialised in maths during teacher training (%)
Ben Tre sites	44	70	100	79	21	94	3	64	100
Da Nang sites	40	45	100	55	16	74	26	48	100
Hung Yen sites	35	34	100	84	12	81	19	56	100
Lao Cai sites	38	38	96	49	13	85	11	68	100
Phu Yen sites	35	45	98	83	13	67	33	74	98
Total	**38**	**46**	**99**	**69**	**15**	**79**	**20**	**63**	**100**

The typical English teacher in the sample (of the 211 who taught survey classes) was in their late 30s, from an ethnic majority Kinh background (96 per cent), from the same province as the school in which they taught (74 per cent), and female (80 per cent). English teachers had similar levels of experience (13 years teaching) and qualifications (81 per cent with undergraduate degrees, 18 per cent with postgraduate degrees) as maths teachers. Seventy per cent of teachers reported that they had previously been awarded the title of 'Excellent Teacher', and all but one of the English teachers (who taught in a Lao Cai school) had specialised in English during their teacher training (see Table 18).

Table 18. *Selected English teacher characteristics, by province*

Province	Mean age	Male (%)	Ethnic majority Kinh (%)	From same province as the school (%)	Mean years as a teacher	Have under-graduate degree (%)	Have post-graduate degree (%)	Ever been awarded the title of 'Excellent Teacher' (%)	Specialised in English during teacher training (%)
Ben Tre sites	41	46	100	70	17	82	18	79	100
Da Nang sites	39	2	100	62	15	69	31	48	100
Hung Yen sites	37	19	100	81	13	94	6	63	100
Lao Cai sites	33	24	83	72	9	94	0	59	98
Phu Yen sites	36	17	100	85	13	72	28	91	100
Total	**37**	**20**	**96**	**74**	**13**	**81**	**18**	**69**	**100**

3. Student learning outcomes[22]

3.1 Scaling and reporting of results using Item Response Theory

Student performance in maths and functional English was assessed using tests administered at the beginning and end of the school year (Waves 1 and 2 respectively), while student performance in transferable skills (problem solving and critical thinking) was assessed using a test administered at the end of the school year. This section presents findings relating to student performance in these tests. Test scores have been transformed using two-parameter IRT,[23] and scaled to have a mean of 500 and a standard deviation of 100 (see Box 1). Maths and English test scores from Wave 1 and Wave 2 have been put onto a common scale, which enables the measurement of learning gain over the course of one academic year.[24]

Box 1. *Item Response Theory*

Results from tests in maths, English and transferable skills are presented as 'interval scaled scores'. These scores are computed using methods based on Item Response Theory (IRT), and are intended to provide a more precise measure of the underlying skill domains which are being assessed. The approach conceptualises the skill domains as 'latent traits' (for example, mathematics proficiency), which are observed indirectly through response patterns to a set of question items.

In brief, IRT models are employed to simultaneously estimate both 'item' and 'person' parameters, where the first describe the characteristics of the test items (including 'item difficulty') and the second describe the 'ability' of test-takers. 'Item difficulty' describes the probability that the item is answered correctly based on the responses among the sample, while 'person ability' depends on how many and which questions a student answers correctly. Using IRT modelling, we generate interval scaled scores which reflect not only the number of questions answered correctly by a student but the difficulty levels of the questions answered correctly. Interval scaled scores may be considered directly comparable estimates of students' levels of the relevant underlying skill (latent trait).

The 'person ability' parameter (latent trait) estimate is transformed onto a scale with mean fixed at 500 and standard deviation fixed at 100. This convention, followed by international assessment studies including PISA and TIMSS, renders the scaled scores readily comparable in standard deviation terms. For example, in respect of two students scoring 500 and 575, it can be immediately appreciated that the difference in scores is 0.75 standard deviations (since one standard deviation is defined as 100 points on the test-score scale). More details on the technical procedures are provided in Part 4.

22 All analysis of test data in this section has been weighted to take account of under-sampling in large schools. This means that this data is representative at district level. See section 4.2 for more details on how weights have been developed and applied.

23 A two-parameter IRT model was used for maths, functional English and the critical thinking section on the transferable skills test; a partial credit IRT model was used for the problem-solving section of the transferable skills test. See Iyer and Azubuike (2017) for more details on the scaling of problem-solving and critical-thinking scores.

24 See Part 4 for more details of this scaling process.

3.2 Maths

The mean maths score increased from 500 at the beginning of the school year to 527 at the end of the school year, a statistically significant learning gain of 27 points (0.27 standard deviations). Figure 11 shows the distribution of students' maths scores at Waves 1 and 2.

As presented in Table 19, students' maths performance and learning progress over the year varied by province. Students in Da Nang sites made the most progress on average (35 points), followed closely by students in Phu Yen sites (33 points); students in Ben Tre sites made just below mean progress (20 points), while students in Hung Yen and Lao Cai sites made the least progress (14 and 15 points, respectively). Figure 12 presents students' maths performance at district level, which shows similar trends as Table 19, but also reveals within-province variation. For example, students in Da Nang district 3 performed below the mean level at both waves, while students in Da Nang district 1 were the highest performers at the beginning and end of the year. Phu Yen district 1 is also particularly notably for higher-than-average learning gains over the year, with a mean score of 505 at Wave 1 and 556 at Wave 2 (51 points of progress).

Figure 11. *Maths performance, Waves 1 and 2*

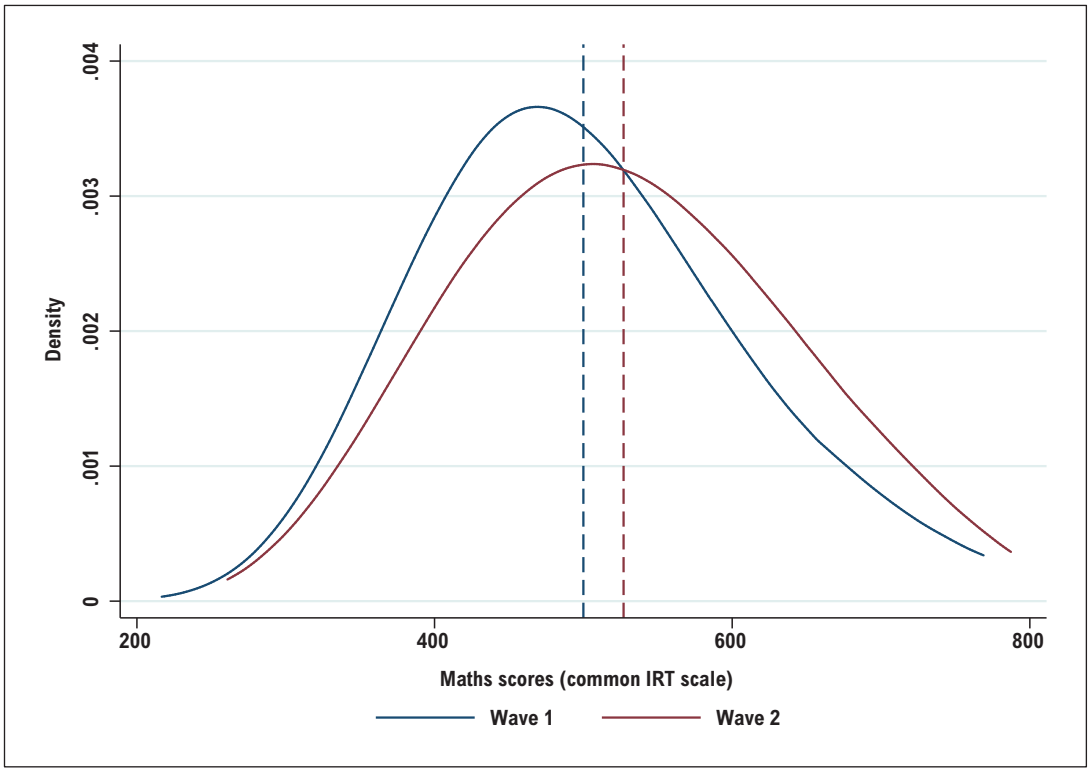
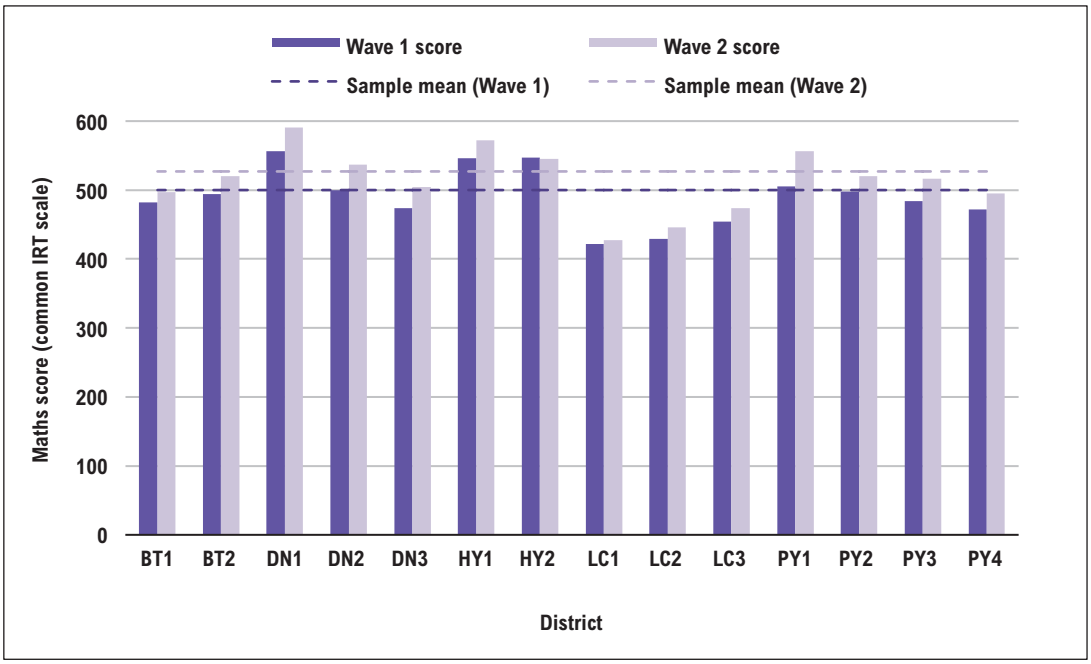


Table 19. *Maths performance at Waves 1 and 2, by province*

	Ben Tre sites	Da Nang sites	Hung Yen sites	Lao Cai sites	Phu Yen sites	Total
Wave 1 score	488	523	547	437	492	500
Wave 2 score	508	558	561	452	525	527
Mean learning gain	20***	35***	14***	15***	33***	27***

Notes: t-test (of difference in Wave 1 and 2 means) significance: ***p<0.01, **p<0.05, *p<0.1.

Figure 12. *Maths performance at Waves 1 and 2, by district*



Students' maths performance and learning progress also varied by gender, ethnic status and locality (see Table 20). There was a large gap between ethnic minority and majority Kinh students at the beginning of the year (100 points), which widened over the course of the year as ethnic minority students made only 14 points of progress compared to Kinh students, who made 27 points of progress. There was a slim gender gap at Wave 1 (with girls' mean score 7 points higher than boys' mean score) which widened slightly over the end of the year, with girls making 28 points of progress compared to 26 points of progress made by boys. Rural students outperformed urban students at the beginning of the year by 8 points, but this gap closed by Wave 2 as urban students made more progress (30 points) than students in rural areas (23 points) over the course of the school year.

Table 20. *Maths performance at Waves 1 and 2, by gender, ethnic status and locality*

	Female	Male	Ethnic minority	Ethnic majority Kinh	Rural	Urban	Total
Wave 1 score	504	497	409	509	505	497	500
Wave 2 score	532	523	423	536	528	527	527
Mean learning gain	28***	26***	14***	27***	23***	30***	27***

Notes: t-test (of difference in Wave 1 and 2 means) significance: ***p<0.01, **p<0.05, *p<0.1.

3.3 English

The mean English score increased from 500 at the beginning of the school year to 509 at the end of the school year, a statistically significant learning gain of 9 points (0.09 standard deviations). Figure 13 shows the distribution of students' English scores at Waves 1 and 2.

Students' English performance and learning progress over the year varied by province (see Table 21). Students in Hung Yen sites made the most progress on average (17 points), followed by schools in Ben Tre (10 points) and Phu Yen (10 points). At the end of year

scores in Ben Tre and Hung Yen sites were similar, and just below the mean in Phu Yen sites; by contrast, while students in Da Nang sites only made 6 points of progress, they performed well above the mean level at both Waves 1 and 2. Students in Lao Cai sites were the lowest performers at both the beginning and end of the school year, and did not make statistically significant progress in the English test. Figure 14 presents students' English performance at district level, and reveals that students in Ben Tre district 1, all three Lao Cai districts and Phu Yen district 4 performed below the mean level in both tests, while students in Da Nang district 1 scored around 100 points higher than students in all other districts at both the beginning and end of year.

Figure 13. *English performance, Waves 1 and 2*

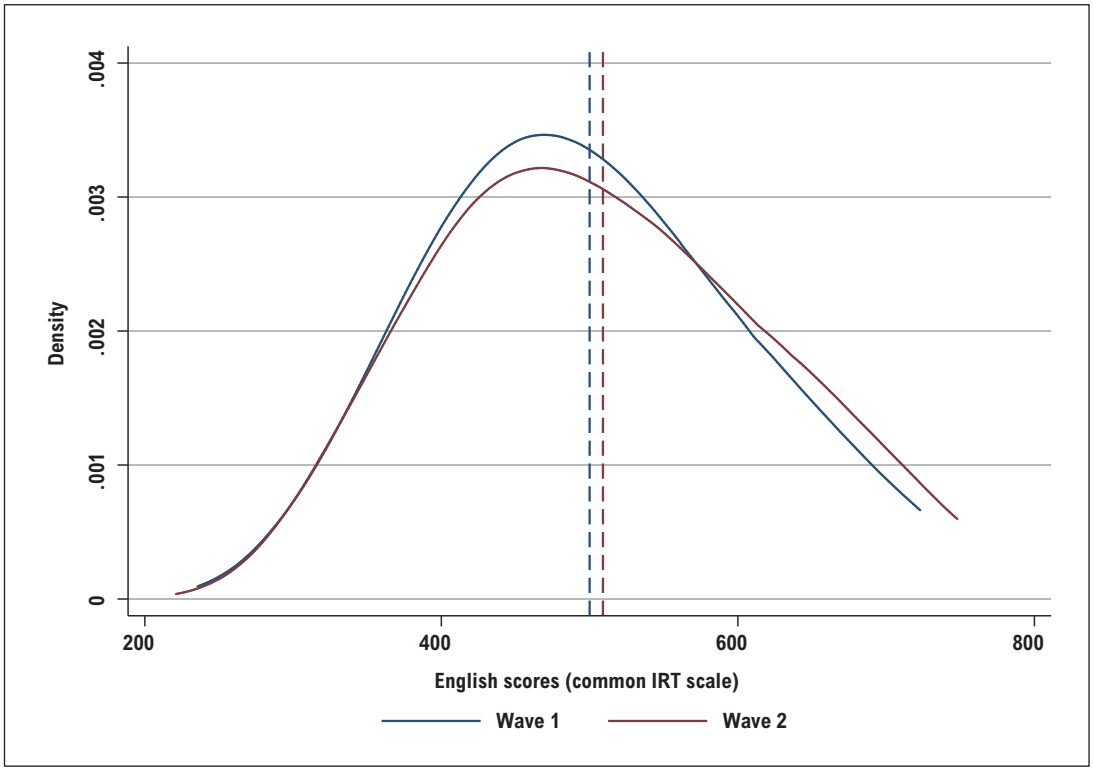
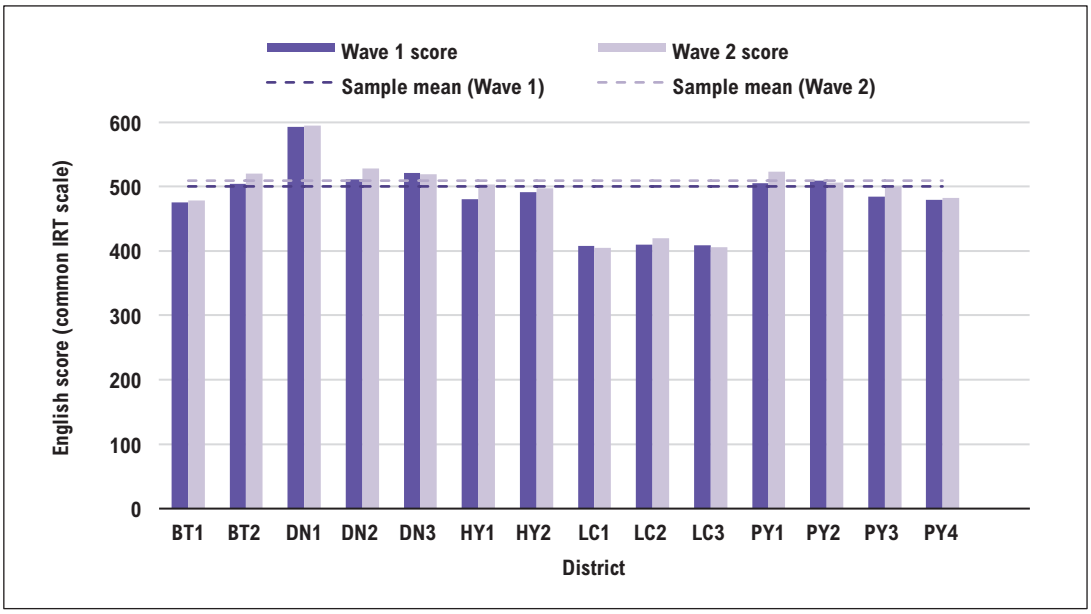


Table 21. *English performance at Waves 1 and 2, by province*

	Ben Tre sites	Da Nang sites	Hung Yen sites	Lao Cai sites	Phu Yen sites	Total
Wave 1 score	489	556	484	409	496	500
Wave 2 score	499	562	501	410	506	509
Mean learning gain	10***	6***	17***	1	10***	9***

Notes: t-test (of difference in Wave 1 and 2 means) significance: ***p<0.01, **p<0.05, *p<0.1.

Figure 14. *English performance at Waves 1 and 2, by district*



There was also some variation in students' English performance and learning progress by gender, ethnic status and locality (see Table 22). As for maths, there was a large gap between ethnic minority and majority Kinh students at the beginning of the year (109 points), which widened slightly over the year as Kinh students made 9 points of progress, and ethnic minority students only made 2 points of progress (which was not a statistically significant learning gain). Girls outperformed boys at Wave 1 (by 39 points), and this gap widened slightly as girls also made more progress by Wave 2 (11 points, compared to 6 points of progress for boys). There was a gap of 21 points between students in rural and urban areas, which narrowed slightly over the year as students in rural areas made more progress (12 points) than those in urban areas (7 points).

Table 22. *English performance at Waves 1 and 2, by gender, ethnic status and locality*

	Female	Male	Ethnic minority	Ethnic majority Kinh	Rural	Urban	Total
Wave 1 score	518	479	400	509	487	508	500
Wave 2 score	529	485	402	518	499	515	509
Mean learning gain	11***	6**	2	9***	12***	7***	9***

Notes: t-test (of difference in Wave 1 and 2 means) significance: ***p<0.01, **p<0.05, *p<0.1.

3.4 Transferable skills

Since the transferable skills test was administered only at Wave 2, it is not possible to consider students' problem-solving and critical-thinking performance in terms of progress over the course of Grade 10. Instead, we can use students' problem-solving and critical-thinking scores as a snapshot of their skill levels at the end of the school year.[25]

25 IRT analysis of the problem-solving and critical-thinking items was conducted separately, in order to give students a problem-solving score (scaled to a mean of 500 and standard deviation of 100) and a critical-thinking score (also scaled to mean of 500 and standard deviation of 100). See section 4.3 and Iyer and Azubuike (2017) for more details.

As Figure 15 and Figure 16 indicate, there was some variation in problem-solving and critical-thinking performance across the districts. Students in all four districts in Phu Yen scored above the mean in both problem solving (from 520 in district 1 to 534 in district 3) and critical thinking (from 513 in district 2 to 537 in district 1). Students in Hung Yen districts were also above-average performers on problem solving (512 in district 1, 507 in district 2) and critical thinking (533 in district 1, 505 in district 2), as were students in Da Nang district 1 (514 in problem solving, 510 in critical thinking). Students in Da Nang district 3 were on average the lowest performers in both problem solving (452) and critical thinking (444), while students in all Lao Cai districts performed below the mean level in both problem solving and critical thinking.

Students' performance on problem solving and critical thinking also varied according to gender, ethnic status and location. Girls performed significantly better on problem solving and critical thinking than boys (by 18 and 22 points on the respective tests), while Kinh students significantly outperformed ethnic minority students, by 42 points on problem solving and 36 points on critical thinking. Students in rural areas performed significantly better than students in urban areas on both problem solving (by 12 points) and critical thinking (by 10 points) (see Table 23).

Figure 15. *Problem-solving performance, by district*

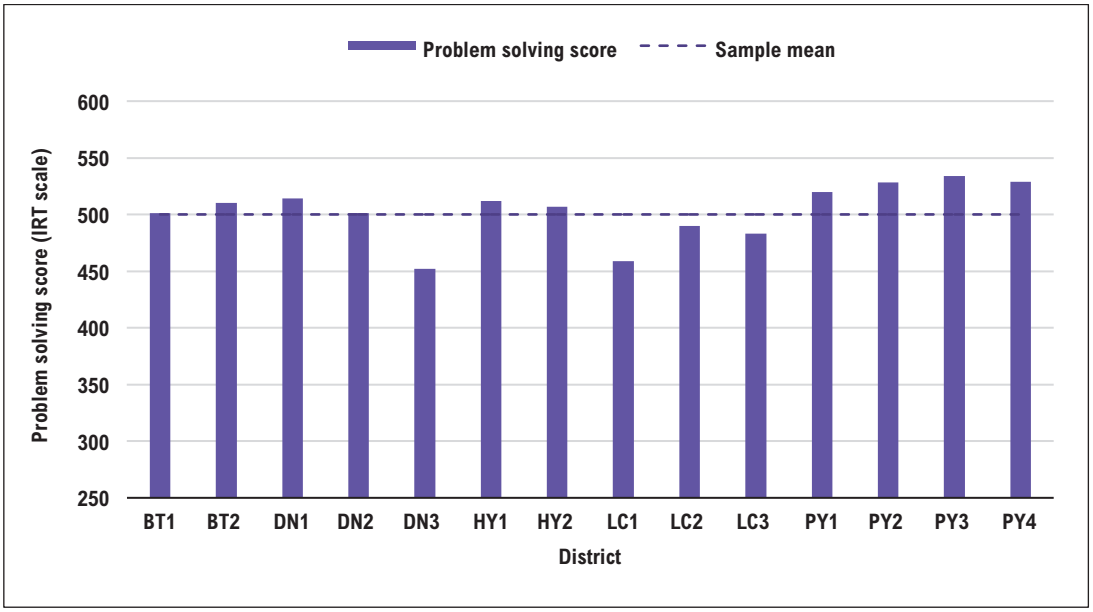


Figure 16. *Critical-thinking performance, by district*

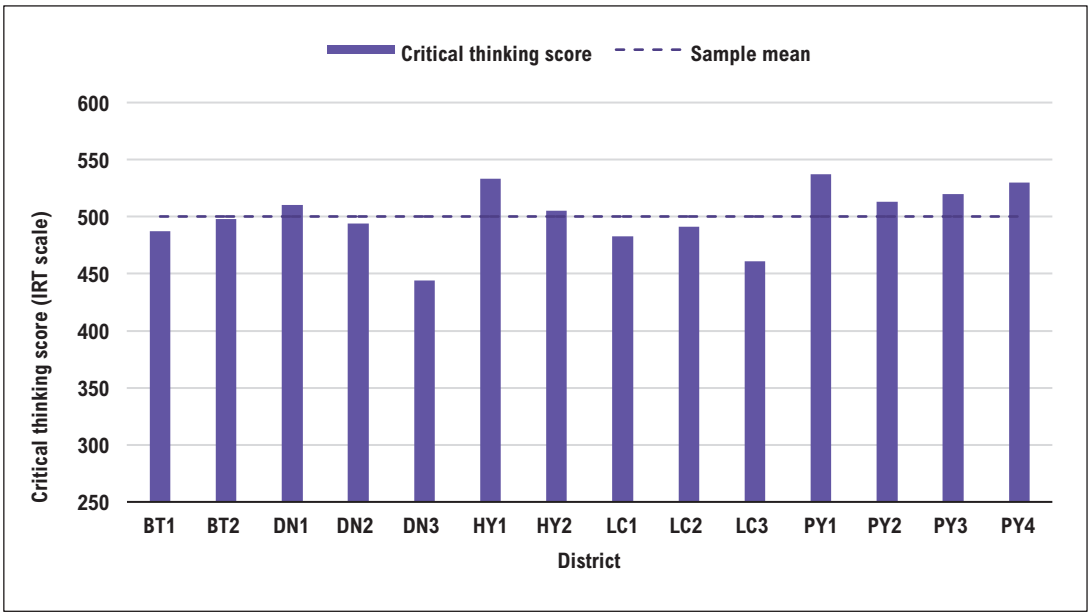


Table 23. *Transferable skills performance, by gender, ethnic status and locality*

	Female	Male	Sig.	Ethnic minority	Ethnic majority Kinh	Sig.	Rural	Urban	Sig.	Total
Problem-solving score	515	497	***	468	510	***	514	502	***	500
Critical-thinking score	513	491	***	470	506	***	509	499	***	500

Notes: t-test (of difference in group means) significance: ***p<0.01, **p<0.05, *p<0.1.

4. Technical information

4.1 Mass scale assistance analysis

When conducting large-scale assessments, it is not always possible to guarantee that 'ideal' test conditions have been met. On occasion, this can sometimes result in problematic situations such as whole classes copying each other or receiving help externally, for example from a teacher. This is referred to as 'mass scale assistance'. It is therefore important to identify any data collected from the field which may give an inaccurate representation of student performance. In order to do this, Educational Initiatives ran internal checks on assessment data to identify any schools or classes where there is a high possibility that mass scale assistance may have taken place. Such classes or schools can then be excluded from analysis. The focus of such checks is on mass scale assistance at the class level; it is not intended to identify individuals or pairs of students who are copying.

The basic assumption underlying the analyses is that test data from a class where mass scale assistance has occurred will have statistical anomalies which would generally not be observed in a regular dataset. The mass scale assistance analysis captures these anomalies using two different mathematical metrics:

1. The first metric quantifies the similarity in questions answered incorrectly by a pair of students and the similarity of responses on those incorrect questions. This metric is calculated for all the pairs of students in the class and then averaged for all the pairs. Values for this index range between 0 and 1, where 0 indicates no similarity on the wrong questions or the options chosen on wrong questions, and 1 indicates having exactly the same wrong questions and same wrong option for every wrong question for each pair.
2. The second metric benchmarks the class performance on individual questions to the overall performance and captures large deviations. This metric works on the principle that the question-wise performance pattern for a class should be similar to the question-wise performance pattern of the overall system of which school is a part. This assumes that questions that are easy at the overall system level will also be relatively easy for any specific school. Similarly, those questions which students across the system find difficult should be relatively difficult for any specific school in that system. When mass scale assistance happens, we see that this pattern is disturbed. Such deviations in question-wise performance pattern are found to be a reliable indicator of mass scale assistance.

Educational Initiatives used mass scale assistance analyses to identify any unusual patterns in test data at the class level. Two classes with potentially suspicious test data were highlighted for the English tests, and one class for the maths tests. These classes have been excluded from all analysis of the student learning outcomes data within this report.

Table 24. *Schools, classes and students identified in mass assistance scale analysis*

Schools with at least one class identified in mass scale assistance analysis	Classes identified in mass scale assistance analysis in Wave 1 and/or Wave 2		Students identified in mass scale assistance analysis in Wave 1 and/or Wave 2	
	English test	Maths test	English test	Maths test
3	2	1	80	40

It is important to note that this analysis only indicates that there is a high probability of copying in any given section or school, rather than confirming it definitively. In addition, it is worth noting that although these analyses are intended to identify all sections and schools where mass copying may have happened, it is still possible that some instances may have escaped notice. However, to our knowledge, the instance of such cases is generally low.

4.2 Weighting procedures

Due to the sampling strategy used during data collection,[26] sampling weights are required for the data to be representative of students all schools at the Young Lives district level. Weights have been calculated as *N*/*n*, where *N* (population) equals the total number of Grade 10 students enrolled in a school and *n* (sample) equals the number of children in our Grade 10 survey classes in a school.

For this report, weights have been applied to the data whenever it is analysed at student level. This allows us to consider the data as representative of all Grade 10 students attending

26 See sections 1.3 and 2.1.

schools in the 14 Young Lives districts. Weights were required in schools which had six or more Grade 10 classes (as these are the schools in which a random sample of five Grade 10 classes were selected for the survey); in schools with five or fewer Grade 10 classes (i.e. in which all Grade 10 students were sampled), the weight for each student is equal to 1.

Weights were not applied for school-level analysis, or for class or teacher-level analysis. School-level analysis remains representative at the district level without weights, but class and teacher-level analysis represents only the classes and teachers included in the survey.

As classes which were suspected of mass scale assistance were dropped from all analysis of test data (see section 4.1), these classes were also excluded from the calculation of the sample weights, that is, from the calculation of the total number of Grade 10 students in each school. Since only three classes (120 students) were suspected of mass scale assistance, students from these classes were excluded for both subjects. This means that the same weights could be applied to both maths and English test data.

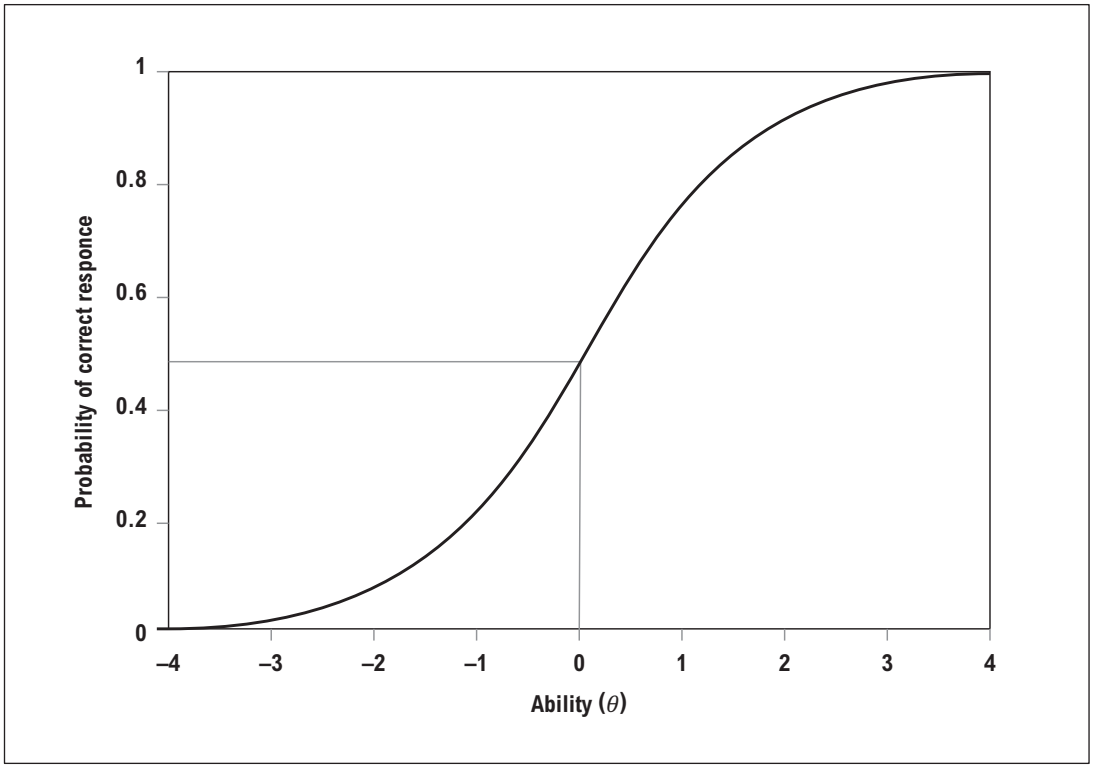
4.3 IRT scaling procedures (maths, English, transferable skills)

As described briefly in section 3.1, data from tests in maths, English and transferable skills presented in this report have been scaled using psychometric procedures based on Item Response Theory (IRT) in order to provide interval-scaled measures of the relevant latent traits – the underlying skill proficiencies being examined by each test. We do not describe these procedures in detail here, but see Van der Linden et al. (2013) for a full discussion. Below we provide a non-technical summary of the approach taken to IRT scaling of the data.

In the case of the maths and English tests, each item follows a multiple choice format with a single correct answer, so that each item score is dichotomous, being either correct or incorrect. In the transferable skills test, some questions permit ‘partial credit’ scoring so that answers may be scored 0 (incorrect) 1 (partially correct) or 2 (correct). The latent trait modelling approach employed in all cases is the two-parameter IRT model, usually for dichotomous responses, extended in the case of the transferable skills test for polytomous responses by use of a ‘generalised partial credit’ IRT model. These models were implemented using the IRT suite of commands in STATA 14.

The two-parameter model simultaneously estimates two item parameters (difficulty and discrimination) and a single person parameter (ability). The difficulty parameter simply describes the probability that an item is answered correctly based on the response pattern among the sample of test-takers, while the discrimination parameter describes the rate at which the probability of answering an item correctly changes with student ability. Accordingly, the discrimination parameter is given by the slope of the item characteristic curve in Figure 17. An item characteristic curve represents the relationship between a latent trait (ability) and performance on an individual test item. In this example, a student with the mean level of ability (a value of zero on the mean-centred scale below) has a 50 per cent probability of answering this item correctly. In turn, the difficulty parameter is zero (the item is at the mean level of difficulty). The ability axis scale measures both ‘item difficulty’ and ‘student ability’ in logits (log odds units), a log-transformed probability measure whereby one logit is the distance along the axis (increase in the value of the latent trait) which increases the odds of a correct answer by a factor of 2.718 (the base value of the natural logarithm).

Figure 17. *An example item characteristic curve*



In maths and English, two sets of tests were administered, with a sub-set of items being common to both tests (anchor or link items). As a result, we are able to employ 'concurrent calibration' across items from both tests to estimate latent trait values for each student separately at the earlier and later time points during the school year, on a common interval scale (known as vertical scaling). This method includes all items administered across both tests and effectively includes each individual twice – first as a 'Wave 1' test-taker and second as a 'Wave 2' test-taker. This approach provides two ability estimates for each student, which allows calculation of 'progress made' between the two tests by simple subtraction of the earlier score from the later score.

As seen above, estimates of latent traits (proficiencies) from IRT models are outputted in the form of variables centred on zero reported in logits. Since the logit scale is an interval scale these values may be transformed onto any other interval scale while retaining the same properties. They are re-scaled for this report in order to aid interpretation, specifically to avoid negative proficiency scores and to ensure that all scores may be readily compared in standard deviation terms. In common with the approach of international studies such as PISA and TIMSS, we choose to rescale these variables to have a mean of 500 and a standard deviation of 100 for the Wave 1 data, and for all data from the transferable skills tests, which are administered only once. Data from Wave 2 tests are transformed specifically onto the Wave 1 scale. Accordingly, the Wave 2 scores can be readily interpreted by comparison with Wave 1 scores (in terms of progress). The formulae used are shown in Box 2.

Box 2. *Formulae to transform Wave 1 and Wave 2 test scores to a comparable scale*

Scaled Test Score Wave 1 =

$$\left(\left(\frac{100}{SD_1}\right)\times T_1\right)-\left(\left(\frac{100}{SD_1}\right)\times M_1\right)+500$$

Scaled Test Score Wave 2 =

$$\left(\left(\frac{100}{SD_1}\right)\times T_2\right)-\left(\left(\frac{100}{SD_1}\right)\times M_1\right)+500$$

T_1: Ability parameter (logit scale) Wave 1

T_2: Ability parameter (logit scale) Wave 2

M_1: Mean of T_1

SD_1: Standard Deviation of T_1

The design of multiple choice items included attention to the selection of 'distractor' options, or alternatives to the correct answer which are designed to reflect common misunderstandings of the concept in question or weak understanding of the concept. According to this approach, it is expected that students with weaker understanding will select distractor options more often than adopting an approach of random 'guessing'. For this reason we chose not include a third parameter, known as the 'pseudo-guessing parameter' which is employed in some other studies (the three-parameter IRT model). This parameter is intended to account for the non-zero probability that a very low proficiency student will select the correct answer to a multiple choice question 'by guessing' and is defined as the lower asymptote of the item response function.

4.4 Development of composite variables

In order to estimate the socio-economic status of the students in the sample, data on assets and household consumer durables were collected from each respondent.[27] A composite score using Principal Component Analysis (PCA) was employed to estimate a proxy to measure background/wealth advantage of students. PCA is a technique used to reduce the number of variables in a dataset into a smaller number of dimensions. It creates indices or components from a dataset, where each component is a linear weighted combination of the initial variables. The asset variables in PCA are weighted by how much variation exists between variables. The assets that are more unequally distributed between households are given more weight in a PCA (Vyas and Kumaranayake 2006). After estimating the principal components of the assets data, a score is predicted that gives the wealth index for each child based on the variables included in the PCA, with higher values of the wealth index indicating more wealth advantage.

27 The following consumer durables were included in the questionnaire: mobile telephone, radio, television, bicycle, motorcycle, study desk, study chair, electric fan, air conditioning, car, computer/laptop, internet, fridge, microwave, DVD player, cable TV box.

4.5 Pilot procedures

Test items and background questionnaires were pre-piloted and piloted in March – May 2016 (for Wave 1 instruments) and December 2016 (for Wave 2 instruments). Qualitative pre-piloting aimed to check the suitability of test items and questionnaire content, and to identify any issues with translation. Instruments were revised based on student and teacher feedback after the pre-pilot, and then a larger scale pilot was conducted.

The pilot sample was drawn from different provinces and urban/rural locations. The aim was not for the pilot sample to be representative of the full sample, but rather for selected schools and students to reach the extremes of expected performance in each subject to identify potential 'floor' and ceiling' effects of the tests. The Wave 1 pilot sample consisted of 715 students attending three schools in Lao Cai and two schools in Da Nang. The Wave 2 pilot sample consisted of 355 students attending two schools in Hung Yen and two schools in Ben Tre, as well as 24 teachers at the same schools who completed teacher psychosocial scales.

Based on pilot data analysis and qualitative feedback, items on the tests, background questionnaires and psychosocial scales were reviewed before inclusion in final instruments; where necessary, items were revised or removed. Vietnamese translations were also checked and revised if required.[28]

4.6 Survey administration

Both waves of the school survey were conducted by trained fieldworkers working in province teams, overseen by supervisors from the General Statistics Office (GSO). Before each wave of data collection, fieldworkers received five days of training on the instruments to be used in the survey, including one day which was spent practising the administration of instruments in local schools. The fieldworker training was delivered jointly by Young Lives team members from the University of Oxford, GSO, and the Centre for Analysis and Forecasting, Vietnamese Academy of Social Sciences (CAF-VASS).

In Wave 1 of the survey, each fieldwork team spent 2.5 days in each school. Fieldwork began in September 2016, and was completed by October 2016. In Wave 2, each fieldwork team spent three days in each school. Additional time was required at the end of the school year as four student instruments (three cognitive tests and the student questionnaire) were administered, and in order to avoid fatigue, a maximum of two tests was administered in one day. Fieldwork began in March 2017, and was completed by April 2017.

Test data were entered by the Mekong Development and Research Institute (MDRI) using optical mark recognition (OMR) scanners, while questionnaire data were entered manually at GSO. Quality control checks of test and questionnaire data were completed manually once data had been entered. Survey administration, including securing permission to visit schools, making training arrangements, and dealing with fieldwork logistics was overseen by GSO. Coordination of test development, piloting and data entry was overseen jointly by CAF-VASS and GSO.

28 Further information on piloting procedures for the different instruments can be found in Azubuike et al. (2017), Iyer and Azubuike (2017) and Moore and Rossiter (forthcoming).

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Appendices

Appendix 1. Description of Young Lives districts in Vietnam

The school survey took place in all upper secondary schools located in the 14 districts in which the Young Lives sites are located. Table 25 provides details of which Young Lives sites are located in each district, and provides a brief description of each district.

Table 25. *Description of the Young Lives districts in Vietnam*

Province	District	Young Lives sites within the district	Brief description of the district
Ben Tre	BT1	5, 6	Includes two areas in the Mekong Delta: a poor, flood-prone coastal area with difficult transportation; and an inland area with slightly above-average poverty rate.
	BT2	7, 8	Includes two areas in the Mekong Delta: an inland flood-prone area with difficult transportation but a relatively low poverty rate; and an inland, relatively prosperous area with good transportation.
Da Nang	DN1	18	A mostly prosperous urban area in Da Nang with very good access to services.
	DN2	19	A relatively poor suburb in Da Nang, with quite poor environmental conditions and transportation.
	DN3	17, 20	Includes an urban neighbourhood with mostly blue-collar labour and average infrastructure, and a newly developed urban and fishing community with average infrastructure and poor environmental conditions.
Hung Yen	HY1	13, 14	Includes two areas in the Red River Delta: a prosperous rural area with a high population density and good infrastructure; and a poor rural area near a major city and with good infrastructure.
	HY2	15, 16	A rural rice-producing community in the Red River Delta, with good infrastructure and high population density.
Lao Cai	LC1	9	Among the poorest mountainous communities in the province, with mostly ethnic minority groups, very difficult transportation and little infrastructure.
	LC2	10	A very poor mountainous area, with mostly ethnic minority groups and underdeveloped infrastructure.
	LC3	11, 12	A poor mountainous area with mixed ethnic groups and underdeveloped infrastructure.
Phu Yen	PY1	4	A relatively prosperous coastal community with shrimp farming.
	PY2	1	An inland flood-prone rural community with a high rate of poverty.
	PY3	2	A coastal community with an average rate of poverty.
	PY4	3	A very poor mountainous community with mostly ethnic minority groups.

Appendix 2. Attrition between rounds

The final survey sample included 52 schools and 220 classes. The survey sample at Wave 1 consisted of 8,556 students in survey classes who completed either the Wave 1 maths or the Wave 1 English test. The survey sample at Wave 2 consisted of the 7,429 students who completed both the Wave 2 maths and English tests, and who had completed both the Wave 1 maths and English tests. The final school survey sample includes only these 7,429 students. Overall, the average rate of attrition between Wave 1 and Wave 2 was 13 per cent, and ranged from 9 per cent in Ben Tre sites to 19 per cent in Lao Cai sites.

Table 26. *Attrition between Waves 1 and 2*

Province	Wave 1		Wave 2		Rate of attrition between W1 and W2 (%)
	Students enrolled in survey classes at W1	Students included in the survey at W1*	Students enrolled in survey classes at W2	Students included in the survey at W2**	
Ben Tre sites	1711	1697	1600	1539	9
Da Nang sites	1639	1618	1599	1435	11
Hung Yen sites	1292	1260	1194	1134	10
Lao Cai sites	1736	1637	1526	1323	19
Phu Yen sites	2362	2344	2196	1998	15
Total	**8740**	**8556**	**8115**	**7429**	**13**

Notes: * Total number of students who completed the Wave 1 maths test or the Wave 1 English test. ** Total number of students who completed Wave 1 and Wave 2 maths tests and Wave 1 and Wave 2 English tests.

Young Lives School Survey, 2016-17: Evidence from Vietnam

This report provides an overview of the Young Lives secondary school survey in Vietnam, which was conducted in 2016-17 with 8,740 Grade 10 students in five provinces (Ben Tre, Da Nang, Hung Yen, Lao Cai and Phu Yen). The survey was designed to allow analysis of the factors that shape students' learning and progression over one academic year, and descriptive analyses of the survey data are presented in this report.

The secondary school survey examined school effectiveness using three outcome measures: Grade 10 students' performance in maths, functional English, and transferable skills. Student performance in maths and functional English was assessed using repeated measures, with linked cognitive tests administered at the beginning and end of Grade 10. This allowed students' progress over the first year of upper secondary schooling to be considered in relation to their individual, class, teacher and school factors. Students' problem-solving and critical-thinking skills were additionally assessed at the end of the school year using the transferable skills test. This survey design has generated rich evidence about school and class effectiveness, and the drivers of learning within schools across the Young Lives sites in Vietnam.

Young Lives

An International Study of Childhood Poverty

About Young Lives

Young Lives is an international study of childhood poverty, involving 12,000 children in four 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 four 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*
- *Pankhurst Development Research and Consulting plc, Ethiopia*
- *Centre for Economic and Social Studies, Hyderabad, India*
- *Save the Children India*
- *Sri Padmavathi Mahila Visvavidyalayam (Women's University), Andhra Pradesh, India*
- *Grupo de Análisis para el Desarollo (GRADE), Peru*
- *Instituto de Investigación Nutricional, Peru*
- *Centre for Analysis and Forecasting, Vietnamese Academy of Social Sciences, Vietnam*
- *General Statistics Office, Vietnam*
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