Delivering on every child's right to basic skills

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Young Lives
An International Study of Childhood Poverty

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The images throughout our publications are of children living in circumstances and communities similar to the children within our study sample. © Young Lives.

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Introduction

Recognition that education is a basic human right was agreed 70 years ago through the Universal Declaration on Human Rights (UN 1948). Forty years later, the UN Convention on the Rights of the Child Articles 28 and 29 elaborated on the right to education being realised 'progressively and on the basis of equal opportunity', notably by making 'primary education compulsory and available free to all' (UN 1989). These core principles were extended further through the World Declaration on 'Education for All' agreed in Jomtien, Thailand in 1999, and followed up by the World Education Forum in Dakar, Senegal, in 2000, which included the establishment of Education for All Goal 2, that 'all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities have access to free, quality and compulsory primary education by 2015' (Little 2008).

These international declarations have been hugely influential on policy and research agendas and have been a key starting point for Young Lives education research. But the core vision of the Young Lives study has at the same time been firmly grounded in trying to understand the realities of children's lives, in households and in communities as well as in schools.

Researching children's development, learning and experience of schooling has been embedded within an interdisciplinary and multi-sectoral framework which emphasises the intergenerational impacts of poverty, social divisions and exclusion, and the critical function of social protection, health and nutrition and other interventions, alongside education, to improve children's lives. Young Lives' longitudinal design has provided wide-ranging quantitative and qualitative research into the ways poverty shapes children's development and well-being and how this has been influenced by policy reforms during critical periods of infancy, childhood, adolescence and beyond.

Education is at the heart of that agenda, with numerous studies being carried out into the changing role of school in children's lives, including issues around inequalities in access and achievement, within the diverse and changing economic, cultural and policy contexts in Ethiopia, India (United Andhra Pradesh), Peru and Vietnam.[1] The core sample of 12,000 children (across two age cohorts) have been tracked from infancy through early childhood, onwards to primary and secondary school phases, and into adolescence and adulthood. Cohort-based research has been complemented by school surveys to assess the impact of schooling.

The earliest phases of Young Lives education research were directly linked to another major global initiative, the UN Millennium Development Goals (see Vandemoortele 2013) which reaffirmed core Education for All goals. Specifically, Target 2A was to: 'Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling' (UN 2013). By the time the Young Lives Younger Cohort were teenagers, the international policy agenda had shifted again, through the launch of the Agenda for Sustainable Development in 2015 (UN 2015), introducing a universal framework applicable to all countries.

> These are universal goals and targets which involve the entire world, developed and developing countries alike. They are integrated and indivisible and balance the three dimensions of sustainable development [the economic, social and environmental]. (UN 2015: 5)

1 Until 2014, Young Lives sites were in United Andhra Pradesh. The Andhra Pradesh Reorganisation Act 2014 was an Act of Indian Parliament that bifurcated the state of Andhra Pradesh into Telangana and the residual Andhra Pradesh state. Since 2 June 2014, when the two states were formed, Young Lives sites have been split across Telangana and the residual Andhra Pradesh.

The focus of goals related to education also shifted, partly in response to the progress of national and international efforts to deliver universal schooling. Increasingly, growing levels of school attendance have been recognised as an incomplete and inadequate indicator of progress, notably because years spent in the classroom are not necessarily linked to quality learning, nor educational progress. A more comprehensive goal for education recognises that economic growth and social development are closely related to the skills of a population and that a central development goal for education should therefore be that all young people attending school should be competent in at least basic skills (OECD 2015). Countries are called upon to demonstrate that they are delivering quality education, which:

> fosters creativity and knowledge and ensures the acquisition of the foundational skills of literacy and numeracy as well as analytical, problem-solving and other high-level cognitive, interpersonal and social skills. It also develops the skills, values and attitudes that enable citizens to lead healthy and fulfilled lives, make informed decisions, and respond to local and global challenges through education for sustainable development and global citizenship education. (UNESCO 2016: 8)

In short, establishing the 'right to education' (Universal Declaration of Human Rights 1948) was a key historical marker in the subsequent growth in global education through to the current Sustainable Development Goals, and beyond. The implementation of globally shared goals, however, depends on policy developments at the national level. One of the features of modern education systems highlighted by the Young Lives four study countries has been huge variability in what it means for children to attend school, shaped by questions of governance, finance, curriculum, pedagogy, quality and effectiveness.

Our starting point for this report is the key challenge for 21st century education systems, which we summarise as **'delivering on every child's right to basic skills'**. This title is guided by the UN Committee on the Rights of the Child's (UNCRC) 'General Comment 1' which elaborated on UNCRC Articles 28 and 29, affirming that:

> Education must also be aimed at ensuring that essential life skills are learnt by every child and that no child leaves school without being equipped to face the challenges that he or she can expect to be confronted with in life. Basic skills include not only literacy and numeracy but also life skills such as the ability to make well-balanced decisions; to resolve conflicts in a nonviolent manner; and to develop a healthy lifestyle, good social relationships and responsibility, critical thinking, creative talents, and other abilities which give children the tools needed to pursue their options in life. (UN 2001: 4)

This report synthesises Young Lives research into the role of education in the lives of children growing up in diverse contexts and draws on evidence about the effectiveness of school systems in delivering positive outcomes for all children and combatting the effects of child poverty; but also, the respects in which school systems may fail to ensure quality learning for all and may be reinforcing poverty-linked inequalities.

By focusing specifically on the role of schooling, we inevitably give less attention to other key topics in Young Lives research. This report is one of several summaries on key themes; see also *Tracing the consequences of child poverty* (Boyden et al. forthcoming 2018), *Investment in adolescents matters for eradicating poverty and gender equality* (Winter et al. forthcoming 2018), *Early is best but it's not always too late* (Benny, Boyden, and Penny 2018), *Children's experiences of violence* (Pells and Morrow 2018), and *Responding to children's work* (Morrow and Boyden 2018).


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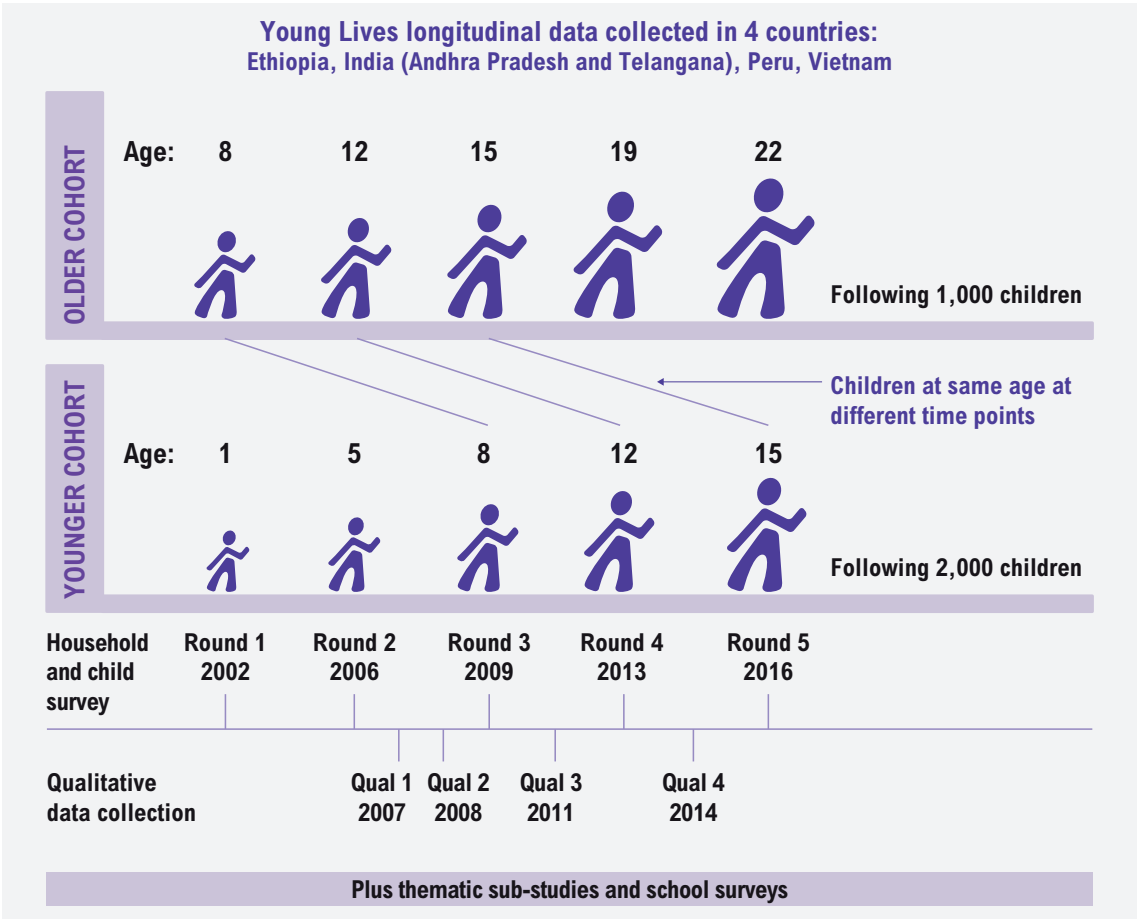
Researching education within the Young Lives longitudinal design

Young Lives longitudinal research captures children's experiences of schooling over 16 years. We draw on five rounds of data for two age cohorts, totalling 12,000 children across four countries (Morrow and Dornan 2017).

Young Lives began tracking children's progress through early childhood and primary schooling in 2002 (Figure 1). At Round 1 (R1, 2002) many of the Older Cohort were attending primary school while the Younger Cohort were still in their infancy. By Round 2 (R2, 2006) we were able to track which Younger Cohort children were able to access an early childhood programme around age 5 while the Older Cohort were coming towards the end of primary school.

Rounds 3 (R3, 2009) and 4 (R4, 2013) continued to track the two cohorts through each phase of school, identifying which type of school they attended (if at all) and how their experiences of learning at school interacted with numerous other child development, health and well-being, family and community variables. By Round 5 (R5, 2016) the Younger Cohort had reached 15 years of age, and were in the later stages of schooling or no longer in school but often with continuing aspirations for education. The Older Cohort were now 22 years old, with issues around work, marriage, and the birth of the next generation of children gaining prominence, and offering new opportunities for intergenerational research (reviewed extensively in Winter et al. forthcoming 2018).

Figure 1. Longitudinal design of Young Lives across five rounds of data collection



Alongside these rounds of longitudinal cohort research, in 2010 Young Lives introduced a series of school surveys across the four countries. These surveys were designed to capture in more detail the roles and effectiveness of schools and school systems in supporting learning at primary and secondary levels (see, for example, Guerrero et al. 2012). Finally, qualitative sub-studies have at all stages played a valuable role in providing depth about the lives, aspirations and experiences of children as they develop and grow older, in ways that has extended and enriched the evidence from quantitative research (Crivello and Morrow 2013).

Outline

Section 1 introduces 'delivering on every child's right to basic skills' as the 'civil rights struggle of our generation' (Education Commission 2017: 2). Perennial questions around inequality, relevance and effectiveness in education are reframed as about prioritising universal basic skills as a social foundation. We highlight the scale of the problem through data from Young Lives as well as other major international studies showing that in recent years most children in low-income countries have been 'off-track' to acquire even the most basic skills. More optimistically, despite low material standards and weak social protection that are common across the Young Lives sample, we propose that all countries have the potential to deliver on a right to basic skills, for all children, given adequate resourcing, effective allocation and suitably managed education systems.

Section 2 looks at how far basic skills in literacy and numeracy were established by the time Young Lives children were 8 years old. There were striking differences in average reading levels among the Older Cohort in 2002, both between and within countries. Equally striking was that reading didn't improve very much for the equivalent (Younger Cohort) group of 8 year olds in 2009. We also summarise Young Lives data on children's achievement through to 12 years old, showing progress for some, but also alarmingly high numbers of children who were still unable to read a simple sentence, despite several years attending school. Finally, we review research carried out within Young Lives communities, into how far Early Childhood Programmes – targeted as a means of increasing readiness to learn in school – shaped the experiences of the youngest children in the study, which drew attention to both quality and inequality issues.

Section 3 elaborates on one of the core challenges emphasised by successive Education for All agendas and now central to the Sustainable Development Goals era – of shifting policy attention from ensuring 'enrolment for all' to also delivering 'learning for all', specifically by reducing to zero the number of children failing to acquire basic skills by the time they are 12-15 years old. This section takes OECD cross-sectional data showing huge national variations as a starting point for introducing the potential of Young Lives research to offer a more detailed dynamic picture of children's changing learning profiles from 5 through to 12 years old. It then draws attention to the marked contrasts between the four countries in progress towards basic skills, as well as differences according to gender alongside other inequalities that constrain children's ability to reach their potential.

Section 4 shifts attention to Young Lives large-scale school surveys across the four countries. Curriculum-linked assessments offer insights into situations where 'curriculum pace' is very quickly out of step with children's learning progress, with a growing gulf between children's difficulties mastering the most basic skills and the often quite rigid expectations of school curricula and teaching. Examples from Peru and Vietnam contrast system-wide efforts in assuring that all children reach a minimum expectation of basic skills, while Ethiopia and India illustrate how low levels of learning even the most basic skills are not necessarily an issue only for the most disadvantaged children, but can be the norm. Finally, evidence from the latest school effectiveness studies shows large disparities – as well as substantial overlaps – in the levels of basic skills competencies achieved by 14-15 year olds in Ethiopia, India and Vietnam.

Section 5 focuses on an increasingly significant (and in some respects controversial) trend. The role of the private versus public sector in providing education varies greatly in the four Young Lives countries, and has been changing since the project began, as revealed through Young Lives research on preschool through to secondary school. How education is financed can have a powerful impact on children's access to and experience of school, as well as school systems' capacity to deliver basic skills with equity. Recent trends in Young Lives countries reveal the increasing reliance on the private sector across contrasting economic, political and educational systems. This section includes brief case studies of India and Vietnam, where the principles of 'socialisation' are applied to the public and private sectors, but in dramatically different ways, with consequences for progress towards – and inequalities in – the achievement of basic skills for all.

Section 6 offers a final reflection on the key themes and evidence summarised in this report. Ensuring quality and effective learning outcomes is an appropriate priority for global education. But the ways in which this priority is delivered to assure basic skills for all requires critical scrutiny, especially the implications of monitoring and assessment systems for curriculum design, teaching methods and ultimately for children's well-being. Finally, while international goals prioritise 'basic skills' as foundational building blocks of modern societies, these priorities are being reassessed as children's lives, education systems, and economies are being rapidly transformed by new pressures and opportunities for education, notably related to digital communications and transferable 21st century skills.

1. Universal basic skills are *the* educational priority for sustainable development

We start by asking a key question: what are basic skills and how can they be measured? Two ways of answering this question are most relevant to the evidence in this report: (i) the definition of basic skills; and (ii) the indicators that can be used to measure basic skills.

There is no single definition of 'basic skills'. International reports refer to 'basic skills like literacy and numeracy' (World Bank 2018), and others include these and 'transferable skills' (DFID 2018). At times basic skills are referenced in economic terms: 'to compete in the economy of the future, workers need strong basic skills and foundations for adaptability, creativity, and lifelong learning' (World Bank 2018: xii), while others remain in the process of establishing basic skills as educational foundations in '[the] building blocks for global reporting of basic education learning outcome indicators' (UNESCO 2017a: 9). The OECD argues that, 'Literacy was once defined in terms of the ability to read simple words. But in today's interconnected societies, it is far more. It is the capacity to understand, use and reflect critically on written information, the capacity to reason mathematically and use mathematical concepts, procedures and tools to explain and predict situations, and the capacity to think scientifically and to draw evidence-based conclusions' (OECD 2015: 21).

Another approach to defining basic skills emphasises the social foundations to participate fully in society (a right, by virtue of being a member). Basic skills open possibilities that otherwise would be closed: a better chance to enjoy the well-established social benefits of lower fertility, better health and greater civic engagement, and to defend and protect rights to survival (UNICEF 2007). Achieving basic skills for all is the 'civil rights struggle of our generation' (Education Commission 2017: 2). A more pragmatic approach to basic skills builds on commonly used methods in educational assessment, for example the acquisition of at least Level 1 skills on the OECD Programme for International Student Assessment (PISA; see examples in Table 1).

Table 1. *PISA proficiency scale descriptions for mathematics and reading*

PISA Mathematics Level 1	PISA Reading Level 1
'At Level 1, students can answer questions involving familiar contexts where all relevant information is present and the questions are clearly defined. They are able to identify information and to carry out routine procedures according to direct instructions in explicit situations. They can perform actions that are almost always obvious and follow immediately from the given stimuli.'	'Tasks at this level require the reader to locate one or more independent pieces of explicitly stated information; to recognise the main theme or author's purpose in a text about a familiar topic, or to make a simple connection between information in the text and common, everyday knowledge. Typically the required information in the text is prominent and there is little, if any, competing information. The reader is explicitly directed to consider relevant factors in the task and in the text.'

Source: OECD 2016a.
Note: PISA Reading Level 1 is split into Level 1a (slightly higher) and Level 1b (slightly lower); Table 1 shows the statement for Level 1a.

This level of skill would be considered by many to correspond to what might be called modern functional numeracy and literacy (OECD 2015). For an individual, this level does not define

'success' (OECD 2015) but at the same time, this level of skill is demanded and is, in principle, useful for all young people – and adults – regardless of, or prior to, any specialisation. For a country, sustainable and inclusive social development is difficult if there are substantial proportions of the population that lack the skills to participate fully in society.

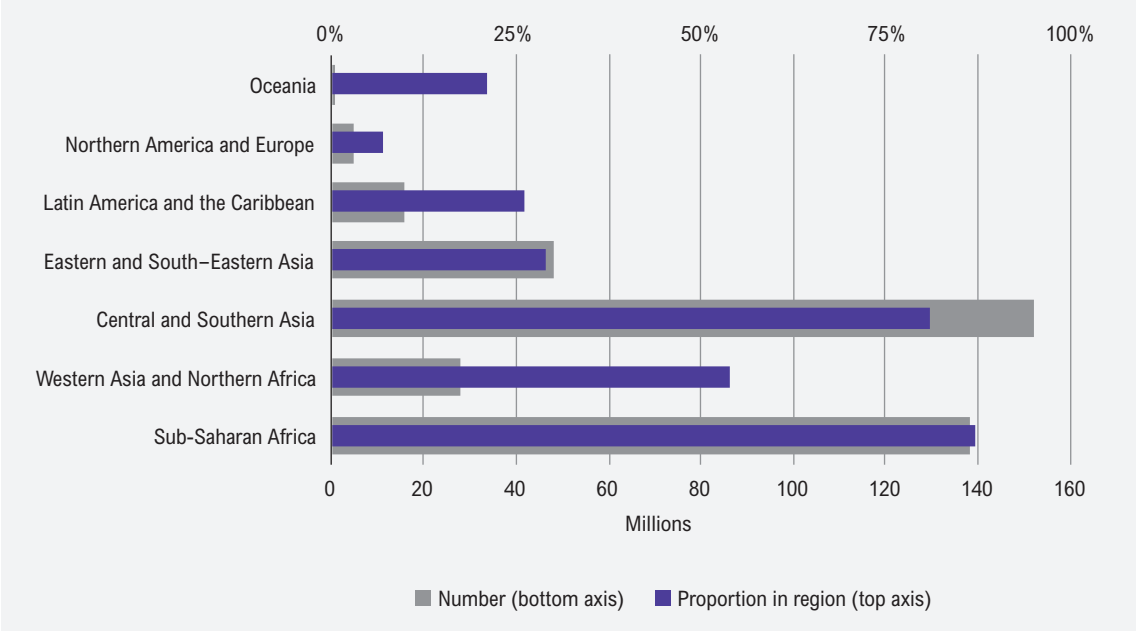
1.1. Most children in low and middle-income countries (LMICs) are off-track to develop basic skills

As policy priorities have shifted from achieving 'access for all' to also ensuring 'quality and learning for all', countries and international bodies have increased attention to using education measurement tools to monitor how far basic skills are being delivered. There is strong evidence that most students in most developing countries have been learning much less than their counterparts in developed countries and very large numbers are a long way off-track to attain basic skills. But there are exceptions and these are instructive about what can be achieved. We look first at a range of global sources of evidence, mainly from cross-sectional studies, as a starting point for reviewing the contribution of Young Lives longitudinal research in Section 2.

Globally, it is estimated that six out of ten children and adolescents are not achieving minimum proficiency levels in reading and mathematics (UIS 2017). The total – 617 million – includes more than 387 million children of primary school age (about 6 to 11 years old, see Figure 2) and 230 million adolescents of lower secondary school age (about 12 to 14 years old). It is estimated that more than one-half – 56 per cent – of all children won't be able to read or handle mathematics with proficiency by the time they are of age to complete primary education (UIS 2017).

Looking ahead, Education Commission projections for school-age children and youth in 2030 estimate that 69 per cent of children in low-income countries will not learn basic primary level skills (Education Commission 2017). The Commission goes on to argue that one in four primary school-aged children who are not learning the basics are not in school, but that three out of four children who are not learning are failing to achieve *despite being in school*.

Figure 2. *Global distribution of primary school-age population not achieving minimum proficiency levels in reading*



Source: UIS 2017.

1.2. Universal basic skills are achievable

Educational inequalities are typically very marked in low-income countries – and they are higher than income inequalities in some cases (Crouch and Rolleston 2017). However, even if differences are inevitable in final learning outcomes and in later labour market opportunities, from a human rights perspective there *need not be any inequality in basic skills.*

In so far as 'basic skills' are recognised as crucial in the delivery of every child's 'human right' to education and not just as one of a set of desirable outcomes or as a means for countries to increase rates of economic growth (see Box 1), then delivering on this right to basic skills is incompatible with 'rationing' by merit, ability to pay or allocation of public resources (Lee 2013; UNESCO 2012). Recognising the universality of the right to basic skills requires a central focus on equity. The key challenge is to move all children from the 'bottom of the pyramid' to a minimum expectation of achievement, while at the same time respecting individual differences in learning capacities and aptitudes, and ensuring high-quality teaching is available to all. Importantly, prioritising basic skills for all does not necessarily reduce or limit the reach of the highest performers (Wagner and Castillo 2014).

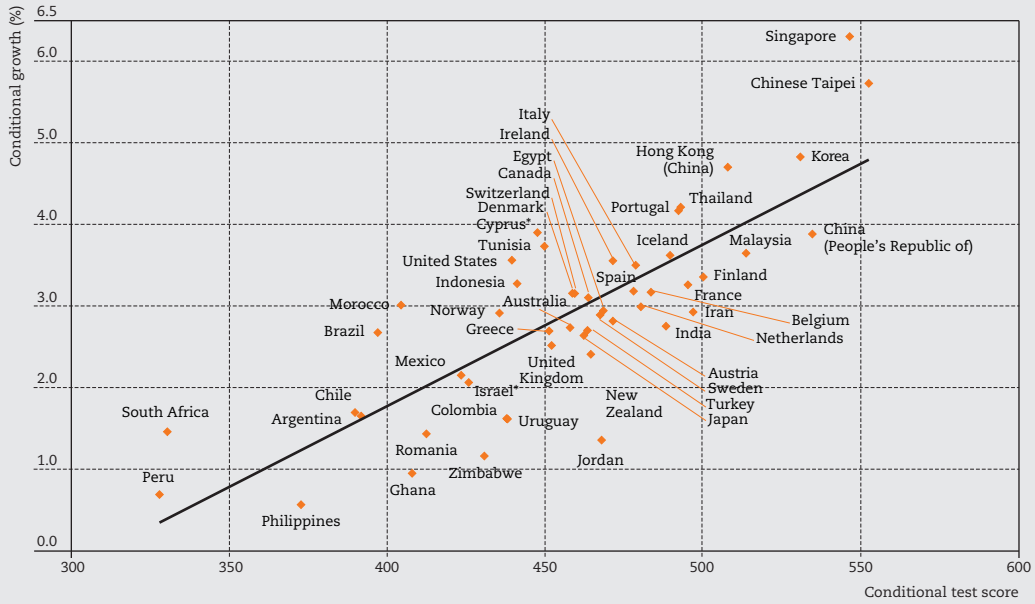
It is perfectly possible for a country to maintain large inequalities in overall student achievement at the same time as delivering, for all children, on a right to *basic skills*. In fact, when countries prioritise the development of a student population with strong foundation skills, they will be most likely to also develop a larger share of high performers (OECD 2015). Moreover, fast-paced social and economic change means that it is not clear exactly which technological skills, higher-order cognitive skills, and socio-emotional skills children will need to thrive in future societies and the future world of work (Brookings Institution 2018). But what is certain is that these skills will complement basic skills and will build on that essential foundation (World Bank 2018). It is also clear from evidence of current trends in education that the huge shortfall in basic skills will stand in the way of the ability of young people in lower- and middle-income countries to fully capture the benefits of globalisation and technological progress.

Education systems in modern societies play a crucial role in the development of basic skills. Part of the justification for free public schooling consists in the equalisation of 'opportunities to learn' and the mitigation of learning inequalities which result from differences in home-advantage (Rolleston et al. 2014). But the organisation and adequacy of school systems shape opportunities to learn and to fulfil potential. Education policies will, therefore, impact the likelihood that all children obtain basic skills and the extent to which inequalities in basic skills persist or may be eliminated.

Box 1. Basic skills and economic growth

Beyond its status as a *right*, and a social foundation, prioritising basic skills for all appears to be a sound investment. The OECD sought to establish a relationship between basic skills and economic growth (OECD 2015). This was a step forward from the more common associations between 'schooling' and growth, which have tended to offer mixed results. The analysis shows that growth is directly and significantly related to the skills of the population – once skills are measured correctly and not just based on years of schooling. Figure 3 illustrates this positive relationship between test score, as an improved indicator of skills (on the horizontal axis) and growth rates (on the vertical axis).

Figure 3. *Collective skills and economic growth rates across countries*



Source: OECD 2015.

The authors of the OECD report went on to investigate whether countries would be better off: (i) ensuring universal access to 'schooling' at the current quality; (ii) improving the quality of schools so that students' collective skills level is equivalent to universal basic skills.

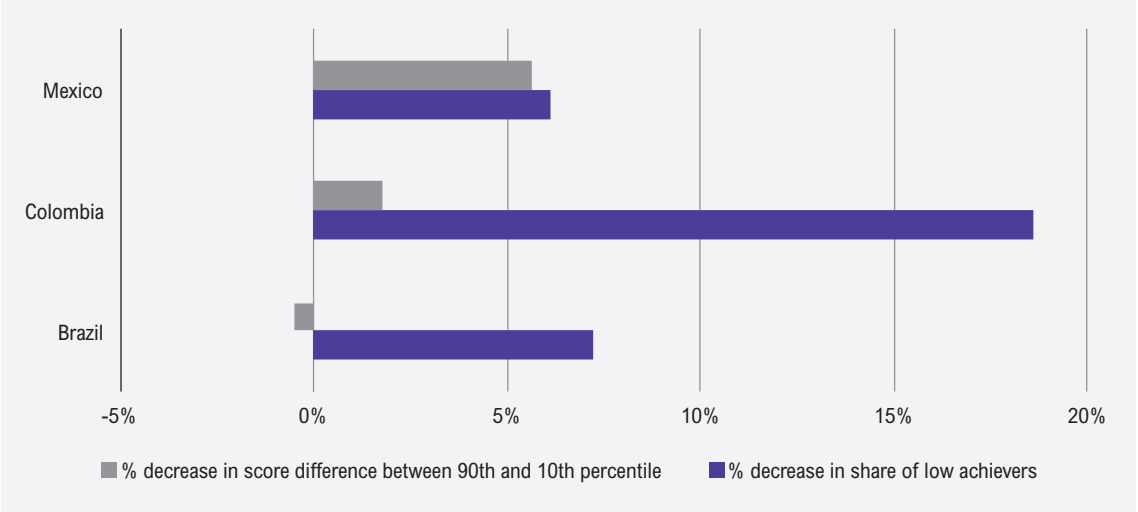
They estimate that improving the transfer of learning, so that universal basic skills are achieved, has a much larger impact on a country's economy than assuring universal access at current quality levels (three-times as effective in lower-middle income countries). A combination of higher quality and full enrolment would provide a further boost.

This analysis suggests that a population's collective skills level is by far the most important determinant of a country's economic growth rate (OECD 2015). In other recent research, it appears that the fastest way of increasing these collective skills is to move 'up from the bottom', prioritising the lowest performers as the fastest path to higher average skills (Crouch and Gustafsson 2018). The prioritisation of basic skills can therefore be justified not only according to rights, but also in order to increase growth rates and the size of future economies.

Evidence of improvements in achievement since 2000 shows that many countries have the potential to reach the goal of universal basic skills by 2030, if they can replicate what has been achieved by the best performers (OECD 2015). Figure 4 uses PISA Science data for Mexico,

Colombia and Brazil to illustrate this; three countries that had comparable PISA average performance in 2006 yet demonstrate quite different patterns of change from 2006 to 2015. It shows: (1) the change in the share of lowest achievers in each country, which serves as an indication of changing 'inequality in basic skills' (the purple bar); and (2) the change in the achievement difference between high and low achievers, which serves as an indication of 'overall education inequalities' (the grey bar).[2]

Figure 4. *Comparing decreases in 'inequalities in basic skills' versus 'overall education inequalities', PISA Science data for 2006-15*



Sources: OECD 2006, OECD 2016b.

Mexico shows moderate to large decreases in both overall education inequalities and inequality in basic skills, suggesting that progress among the lowest achievers might be reducing overall educational inequalities among children. Brazil, on the other hand, shows similar decreases in inequality in basic skills at the same time as a slight increase in overall education inequalities, implying that even though the share of low achievers has declined over this period, the achievement gap between highest and lowest achievers continues to grow.

Yet it is in Colombia where the most noticeable change is seen: a huge decline in inequality in basic skills, which reduces the share of students not acquiring basic skills by almost one-fifth, along with a small decrease in overall education inequalities. This suggests that – albeit for the children that continue to attend school at age 15 – Colombia has managed to substantially reduce inequalities in basic skills, without necessarily limiting the progress of higher achievers.

1.3. Resources are not all that matters, but they are part of the answer

One of the biggest challenges facing low and middle-income countries is, and will continue to be, the need to mobilise resources from both the public and private sectors to increase from the current US$1.2 trillion to the US$3 trillion level estimated to be needed globally to deliver on the right to basic skills by 2030 (Education Commission 2017). Today's question is not *whether* to allow private finance to play a role in the delivery of education services, but *how* to do so equitably (see Section 5).

2 Low achievers in PISA reports are shown as students below Level 2 and the share of students in that category is used to define 'inequality in basic skills'. The difference between high and low achievers, the indicator for 'overall education inequalities', is calculated based on scores for the 10th and 90th percentiles for each country, at each testing occasion.

Countries vary significantly in the governance and financing of schooling, including marked variations between the four Young Lives countries. Increased finance may come from larger shares of government spending directed to education; from household investments in private schools or private tuition; and it can also include household contributions to teaching and learning materials in public schools and/or investments from voluntary, charitable or philanthropic organisations. Ultimately, however countries go about increasing total available finance, education at some level will always be rationed. The key for equity is to ensure that all pupils have a fair chance to develop basic skills when any rationing in the education system is applied.

From a human rights perspective, the State – as principal duty bearer in each country – is responsible for ensuring that funding is spent efficiently and equitably in the early grades so that the average adult of the world, who today has spent close to eight years in school (Barro and Lee 2013), is enabled to develop basic skills and attitudes rather than simply serving time (UN 2015). How systems are organised to deliver education services, how they ration and how they distribute financial and human resources within these services, will influence system efficiency and equity – and will therefore impact fairness and the progressive realisation of rights and talents.

1.4. To deliver 'basic skills for all' requires, in most circumstances, considerable system reorientation towards mass learning

The education systems that have done a remarkable job in providing mass access over the past couple of decades now require reorientation to ensure an adequate learning experience is provided, such that all children achieve basic skills. There is no single formula or framework for how governments should deliver the high-quality education required to transfer basic skills for all (UNESCO 2017a). Nevertheless, country decisions influence opportunities to learn and attention to the right to basic skills suggests a focus on minimum achievement standards and a narrow breadth of coverage in the early years.

This reorientation towards basic skills will encourage a dramatic increase in attention to questions around which children do not attain these skills and why. Information on the distribution of skills may allow governments to target opportunities to learn for low-achieving children – through improved systems for quality assurance, better teacher preparation and support, and so on. This can provide an additional justification for programmes supporting educationally marginalised and disadvantaged groups, to advance the achievement of basic skills.

Educational outcomes including basic skills may be harder to measure than counting children enrolled in school, but breaking broad objectives into a series of specific time-bound learning goals such as reading fluently by age 8 makes such measurement possible (Pritchett 2013). While global estimates of enrolment have been a policy priority, much less systematic evidence is available on children's development and learning in many of the world's low- and middle-income countries; and international assessments, to date, offer low coverage in LMICs (UIS 2018; Best et al. 2013). Of the 223 'countries' that UNESCO monitors against Sustainable Development Goal 4 targets, in the period since 2010, only 1 in 6 has reported the proportion of students at the end of primary education achieving at least a minimum proficiency level in reading – and similarly for mathematics.[3] Finally, by prioritising basic skills – and paying attention to their measurement – attention can be drawn to a wider range of cognitive, social and emotional dimensions that are relevant to the future of individuals and societies, but about which we know little so far (OECD 2015).

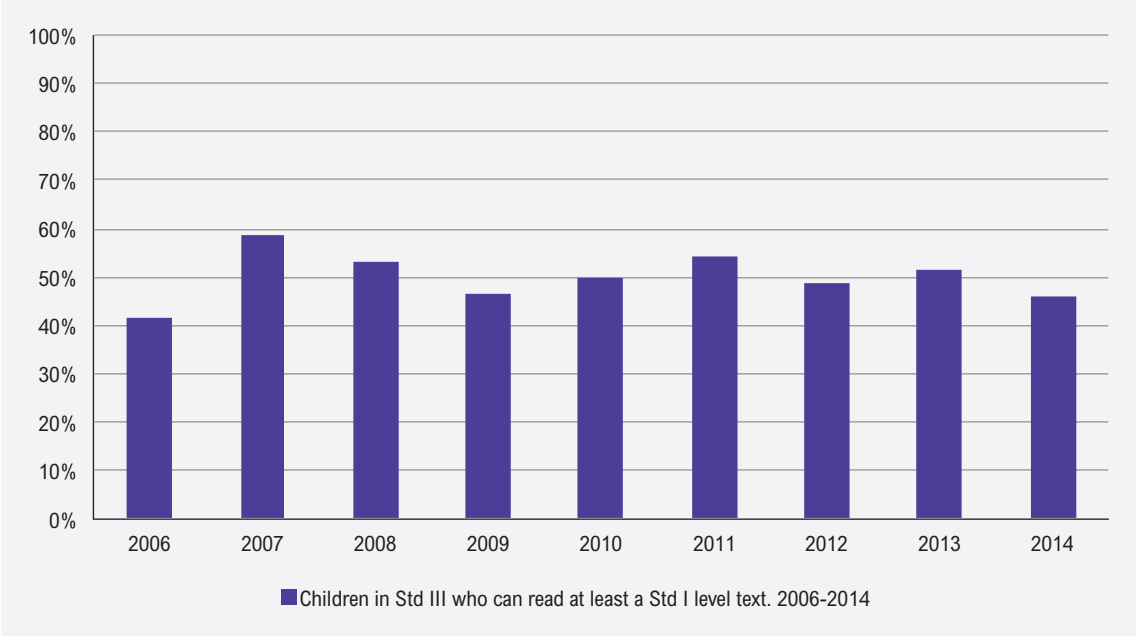
3 There are officially 195 countries in the world in 2018. For reporting against Sustainable Development Goal 4, UNESCO lists 224 countries (one of which is pre-secession Sudan, so the number falls to 223), which are perhaps better interpreted as geographical units with distinct education 'systems'.

2. All children reading?

Foundation literacy and numeracy provide the basis for 'tackling the learning crisis at its root' (DFID 2018: 3). These skills are fundamental for participation in modern global society (Room to Read 2014) and open the door to lifelong learning (USAID 2017).

Low levels of literacy are common and remain stubbornly low in many countries, with most children in some countries failing to acquire foundation literacy by Grade 3 (approximately age 8). For example, India's Annual Status of Education (ASER) survey has collected data for a representative sample of children from almost every rural district in India and captures a picture of basic literacy in rural United Andhra Pradesh between 2006 and 2014 (Figure 5). This snapshot shows that each year since 2006, only around half of children in Grade 3 had acquired the foundation literacy skills required to read a text prepared for children in Grade 1.

Figure 5. *Low literacy levels in United Andhra Pradesh, 2006-14*



Source: ASER 2014.

2.1. Measuring basic skills within a longitudinal design

This section illustrates how Young Lives longitudinal design has been able to track changes over time and across countries. The focus is mainly on literacy as a major indicator of basic skills. Note that Young Lives has tracked a broad range of children's skills and competencies, using a common core of cognitive development, literacy and numeracy assessments since the first round of data collection in 2002.

Any measure of basic skills is inevitably selective, sampling from a wide range of potential indicators of students' capacities and learning progress, and final decisions about assessments built on extensive work to ensure comparability across cohorts and across study rounds (Cueto and Leon 2012; Leon and Singh 2017). Table 2 summarises cognitive, reading and maths assessments most relevant to the research summary of this report. Young Lives has also extended assessments to include, for example, executive function, problem solving and critical thinking (Iyer and Azubuike 2017).

Table 2. *Summary of cognitive and achievement assessments used at each Young Lives round*

	Round 1		Round 2		Round 3		Round 4		Round 5	
	OC	YC	OC	YC	OC	YC	OC	YC	OC	YC
Ravens Coloured Progressive Matrices (CPM)	✓									
Short numeracy and literacy assessment	✓		✓			✓				
Peabody Picture Vocabulary Test (PPVT)			✓	✓	✓	✓		✓		✓
Cognitive Development Assessment (CDA-Q)				✓						
Mathematics Achievement Test			✓		✓	✓	✓	✓		✓
Early Grade Reading Assessment (EGRA)						✓				
Sentence Comprehension (Cloze)					✓					
Reading Comprehension Test							✓	✓		✓

Notes: The PPVT assessment was adapted for each country in R4 and R5. See Leon et al. 2015 for a technical example of PPVT equating across earlier rounds.

This section builds mainly on literacy tests which asked 8-year-old children to read a sentence from a card and to write a simple sentence which was read to them by a trained fieldworker (in English, for example, the sentence to read might have been 'the road is long'). These simple indicator tests are widely employed in large-scale surveys (see UIS 2004), including the Demographic and Health Surveys and the Living Standards Measurement Study and provide reliable summary measures in the context of large-scale data collection.

Using these assessments, it was possible to look at basic literacy rates for the Older Cohort at age 8 in 2002 and how levels change for the Younger Cohort seven years later in 2009 when they were also aged 8.[4] In all survey countries 8-year-old children are normally in Grade 2 or 3 of school – generally a level at which education foundations are established, before moving onto the mainstream curriculum (Cueto 2016).

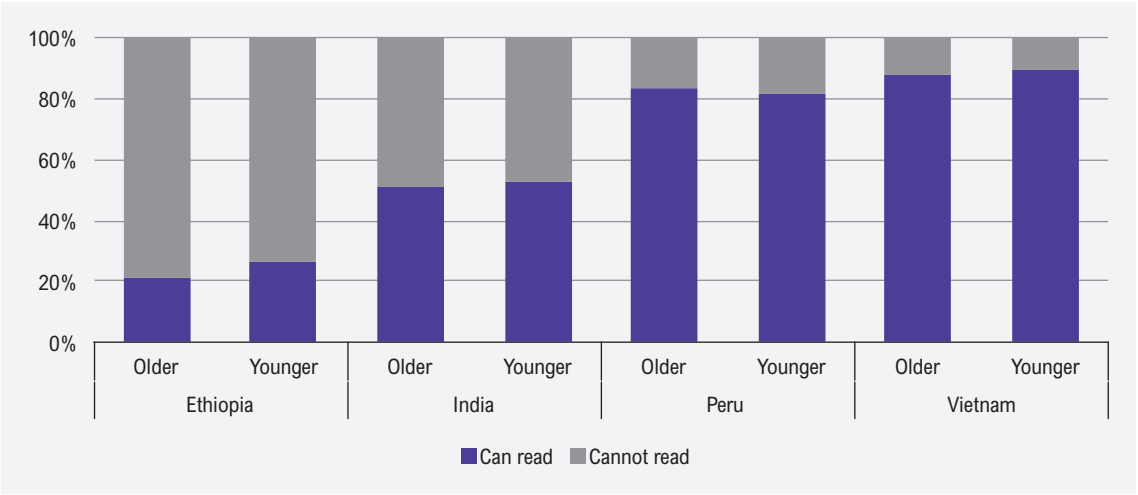
2.2. Basic literacy rates across the four countries are very variable and, in some cases, very low

The most striking finding is the size of differences in reading rates between Young Lives countries (Figure 6). In Ethiopia, 4 in 5 Older Cohort children could not read a simple sentence by age 8. The findings for Ethiopia can be understood in the context of historically limited access to formal education, adult literacy rates as low as 27 per cent[5] in 1994 (the year that many of the Older Cohort were born), and a school system going through a phase of rapid transition to provide education for all. At the time of our Round 1 survey, access to early learning programmes among the Older Cohort was restricted to a few urban centres (Orkin et al. 2012), school started at age 7 and many children had joined school late (Woldehanna and Araya 2016). It is not unexpected, therefore, that few children were able to read by age 8.

4 See Figure 1 for details of the longitudinal two cohort design.

5 World Bank World Development Indicators Database, 'Literacy rate, adult total (% of people ages 15 and above)', available at: https://data.worldbank.org/indicator/SE.ADT.LITR.ZS

Figure 6. *Comparing reading levels at age 8 (the Older Cohort in 2002, the Younger Cohort in 2009)*



Source: Calculated from Young Lives Round 1 and Round 3 data.

The data for India at that time were more surprising, given that children had access to an extra year of schooling and there is the potential for greater household support for learning in Young Lives sites, with the literacy rate closer to 50 per cent in United Andhra Pradesh in 1994.[6] However, although this rate is far higher than in Ethiopia, still large shares of the population struggle to support their children's learning, as illustrated by a parent in rural Andhra Pradesh:

> "Here people are illiterate … parents of those children are ignorant … they know only that their children are going to school … they don't know about what his child has learnt, what is he studying … they will be knowing that his child has gone to school in the morning and has come back in the evening … they don't have the knowledge of how much he has studied and what he has studied." (Parent, quoted in Morrow and Wilson 2014: 15).

In Vietnam and Peru, on the other hand, most children – more than 4 in 5 – could read sentences by age 8. In these countries, school officially starts at age 6 (as for India and one year before Ethiopia) and population literacy rates at that time, therefore opportunities for support outside school, were approaching 90 per cent in both countries.[7] Parents of children in the Peru sample talk positively about the joint roles of school and home in establishing educational foundations in the first grades. But although they can often contribute, they also acknowledge some limitations, particularly in the extent to which they can support learning progress:

> "Oh, yes. I know my girl needs good foundations in first and second grade, after that they go on their own, but first and second grade are very important … it is the foundation to learn well later. The teacher always advises us, and asks us to make her study a couple of hours at home." (Mother in urban site, Peru, quoted in Ames et al. 2010: 41).

> "Yes I agree. First and second grade are important because if they don't do them well, they don't do well later. But parents have to help at home too; we should not leave everything to the school." (Mother in urban site, Peru, quoted in Ames et al. 2010: 41).

6 There is no year for which comparable literacy data are available. For Ethiopia the literacy rate is included for 1994, which coincides with Older Cohort birth dates. Andhra Pradesh's literacy rate in 1991 was 44 per cent and rose to 60 per cent in 2001, suggesting a 1994 literacy rate of around 50 per cent (Office of the Registrar General, India State-Wise Literacy Rates for 1951-2001). Note also that literacy rates are calculated for different populations in India and Ethiopia which will have a small impact on interpretation.

7 World Bank World Development Indicators Database, 'Literacy rate, adult total (% of people ages 15 and above)', available at: https://data.worldbank.org/indicator/SE.ADT.LITR.ZS

> "[They may suffer when starting school] because they get homework they don't understand … but I will support him: 'You know, son, you do it like this' … The homework we know, don't we? Up to a point I understand it, sometimes we don't understand … [Also] in sending him early to school, clean, dressed, because they check the children … He will need to be fed properly too, won't he?" (Mother in rural site, Peru, quoted in Ames et al. 2010: 41).

Tracking progress from 2002 (Older Cohort) to 2009 (Younger Cohort) there is little evidence of improvements between the two cohorts in terms of the proportion of 8-year-old children achieving this very basic reading indicator. It is important to note, however, that this does not necessarily mean that there was no improvement in average reading skill over time. It could well be that those who could read sentences in 2002 had demonstrated their highest skill, but that their 2009 equivalents could both read short sentences as well as paragraphs.[8] This possible 'ceiling effect' in the way data are being used restricts the scope for representing the full range of children's competencies. However, the main goal of these analyses is to assess whether children were reaching (or failing to reach) a level of foundation literacy that indicates they are on a pathway towards mastery of basic reading skills.

In the well-established systems of Peru, India and Vietnam, minimal progress on this reading indicator had been made between 2002 and 2009, meaning that a very similar share of our Younger Cohort was unable to read sentences in 2009. The only noticeable change was in Ethiopia where, starting from a much lower baseline, the share of children reading increased from 21 to 27 per cent. Ethiopia's capacity to make this, albeit slight, improvement is most likely due to the expansion of schools, which meant that on-age enrolment in Grade 1 (at age 7) increased from 45 per cent to 58 per cent between cohorts, affording more opportunities to learn, particularly in rural areas.[9]

The strikingly different literacy rates across countries and relatively limited evidence of improvements between cohorts over time raise questions about what kinds of policy intervention would be most likely to amplify the rate of progress towards foundation literacy skills for all, in a way that is efficient in terms of education investment.

2.3. Experimental interventions to improve reading have demonstrated significant improvements in some contexts

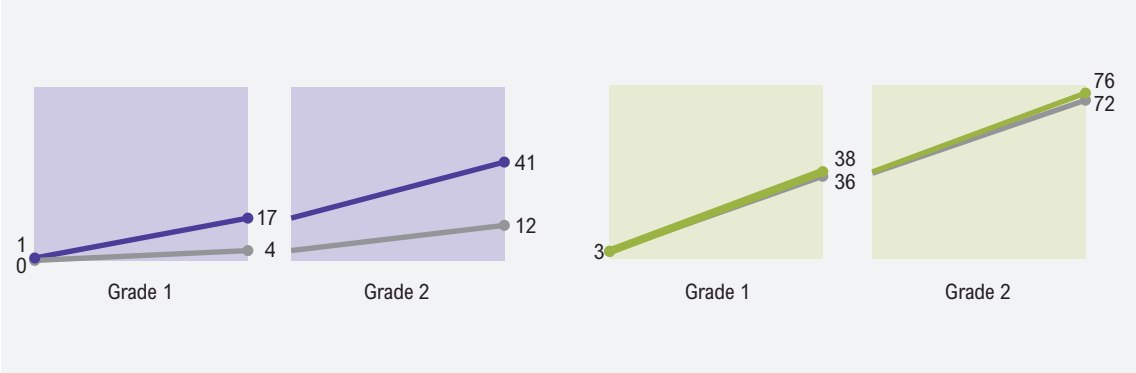
Experimental studies of literacy teaching with this age group in LMICs have shown that rates of foundation literacy can be improved rapidly. For example, 'Room to Read' (a non-profit organisation for improving literacy and gender equality in education) reported large gains in reading fluency through a literacy programme implemented with schools. The programme helped schools to establish libraries with books in the children's local languages, as well as ensuring that teachers and librarians are trained in 'best practices' of literacy instruction (Room to Read 2014).

The study provides an interesting reference point for Young Lives research on this theme because India and Vietnam are included in Room to Read studies. Following a programme that focused on foundation literacy, children in Room to Read's programme schools in India were reading more words at the end of Grade 1 than their peers at the end of Grade 2 in regular schools (lines in Figure 7 show the improvement for each group over one year). They went on so that by end of Grade 2 they could read more than three times as many words per minute as their peers in comparison schools.

8 Equally, it is possible that there has been a reduction in average reading skill over time.

9 Calculated from Young Lives' education histories reported by children, capturing grade of enrolment for each year of age.

Figure 7. *Room to Read evaluation findings for India (left) and Vietnam (right), 2014, showing average words read per minute in programme and comparison schools, at the beginning and end of Grades 1 and 2*



Source: Adapted from Room to Read 2014.

It is important to qualify the overall positive evidence on experimental interventions, by drawing attention to the way the impact of an innovative programme may vary between contexts. As Figure 7 shows for Vietnam, there was no difference in progress of children in programme and comparison schools. This does not necessarily indicate an ineffective programme, but more likely that regular government schools were already able to deliver all that the programme offered for reading fluency, without benefits from additional intervention. Young Lives studies on Vietnam's education system provide insight into quality features, notably a positive focus on teaching foundation skills and the priority given to preparation in the first grades of school which ensures that most children (87 per cent in Young Lives sites, at age 8) establish a basic level of literacy as a foundation for future learning.[10]

Vietnam's strategy demonstrates that it is possible to ensure that all children can establish foundation literacy competencies as an educational foundation for basic skills development, even during a time of rapid school expansion (World Bank 2018). The key ingredients appear to be: (i) a narrow curriculum with most of the time focused on building foundation skills in the early grades, with teachers working to a standard that all children are expected to reach (UNESCO 2014); and (ii) a persistent emphasis on the needs of the poor and disadvantaged (World Bank 2018).

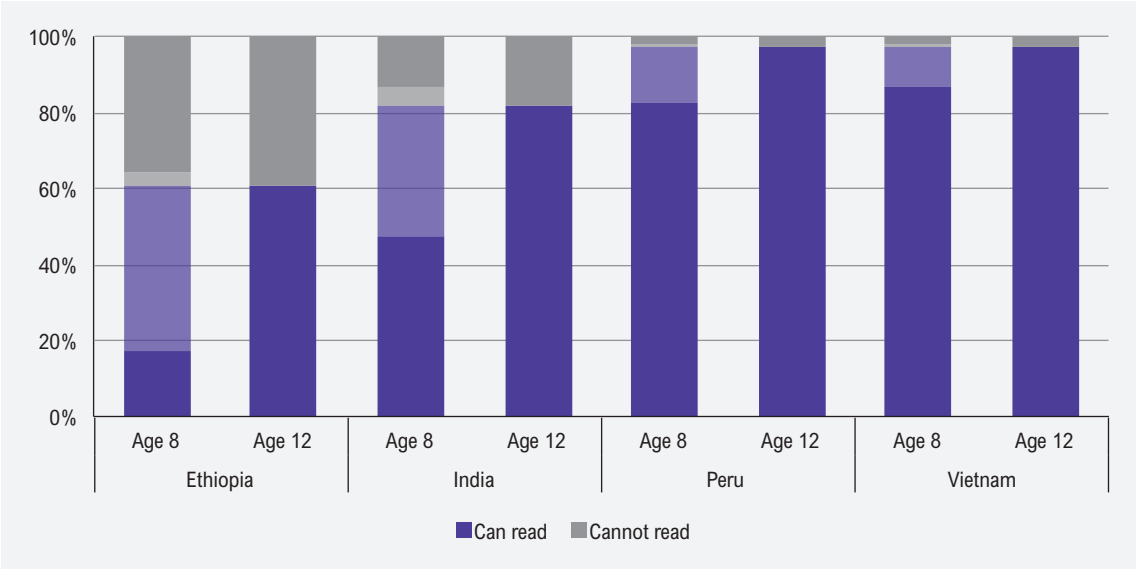
2.4. Young Lives' tracking of reading skills between 8 and 12 years old highlights significant improvements in literacy but also draws attention to large numbers of children unable to read despite many years of schooling

Section 2.2 provided insights into how far countries were progressing towards ensuring every child had acquired rudimentary literacy skills, based on comparisons between children at two points in time, when each cohort was aged 8. Next, we analyse children's progress over time, initially focusing on the Older Cohort tracked from 8 to 12 years old. Young Lives longitudinal design allows the identification of reading profiles for each child. These can be used to illustrate growth in foundation skills and investigate how that change varies between countries and across groups. They are particularly useful in understanding progress for Ethiopia and India, countries in which children may not have had opportunities to learn by age 8 but would be expected to have attended at least a few years of schooling by age 12.

10 Calculated from Young Lives data for Older Cohort at Round 1 and Younger Cohort at Round 2.

Older Cohort children were 8 years old in 2002 and 12 years old by 2006. In terms of progress from ages 8 to 12, Young Lives data for Peru and Vietnam show a similar pattern, with India sharing some features with Ethiopia. In Peru, the 17 per cent 'non-readers' at age 8 fell to 3 per cent at age 12: more than 85 per cent of early 'non-readers' had attained foundation literacy.[11] Similar rates applied for Vietnam, in which only 3 per cent of children remained 'non-readers' by age 12 (Figure 8).[12]

Figure 8. *Comparing reading levels at ages 8 (2002) and 12 (2006) for Older Cohort children*



Source: Calculated from Young Lives Rounds 1-4 data.
Note: Lighter sections in columns for age 8 indicate (purple) children who became readers between ages 8 and 12 and (grey) children who were readers at age 8 but became 'non-readers' by age 12.

In India, however, only two-thirds of the far larger number of 'non-readers' at age 8 demonstrated an ability to read a simple sentence by age 12. This leaves almost 20 per cent of children still unable to read simple sentences, even though they were eligible for their seventh year of schooling. This is not due mainly to dropout either.[13] At 12 years old, 90 per cent of Older Cohort children were enrolled in school in India sites, which points to gross inefficiency in terms of delivering effective education, and serious failure to meet the expectations of children and families.

Tracking Older Cohort children in Ethiopia suggests considerable progress during the early stages of Young Lives research. From initially low levels of reading at age 8, the share of children who could read a short sentence almost tripled by age 12. Nonetheless, at age 12, school attendance was very high (with dropout at less than 3 per cent), on average Older Cohort children had been enrolled at school for 4.7 years,[14] and yet 2 in 5 remained 'non-readers'. It appears that this very large proportion of children continued to pass through grades without the literacy skill required to access the curriculum. Grade attainment without learning, and the risks of slipping behind, are something that many Young Lives children are acutely aware of. At age 6, Lupe, who was growing up in one of the oldest shanty towns in Lima, the capital of Peru, was preparing herself for the challenges that lay ahead in the early primary grades, as illustrated in the following discussion:

11 'Non-reader' in these data mean that children could not read short sentences. They may have been able to identify letters and read single words.

12 Three per cent of a population as non-readers by age 12 is not unusual in any country.

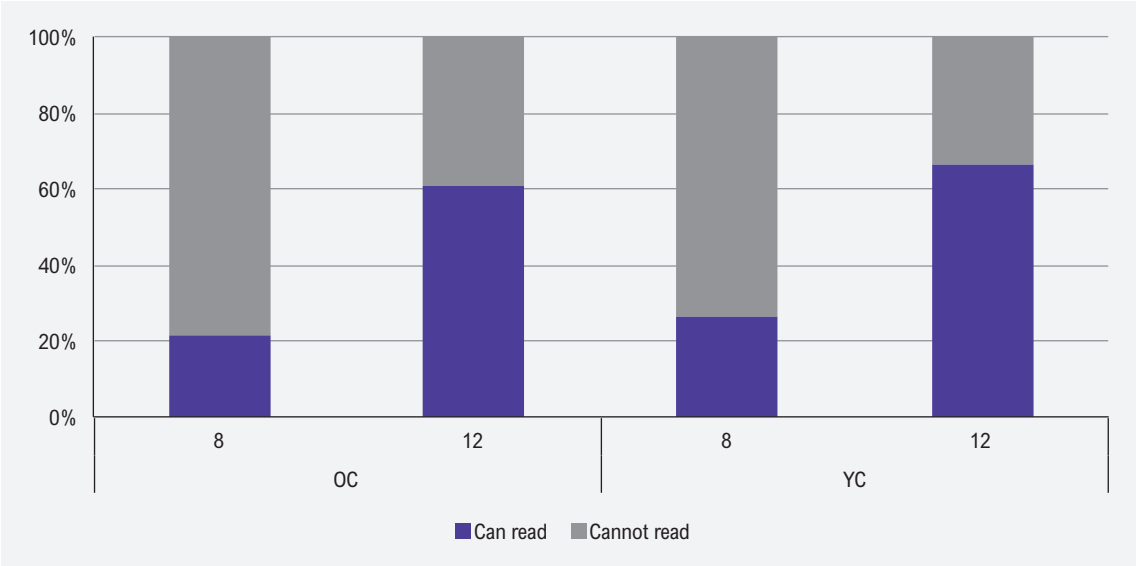
13 For a full review of school dropout dynamics across Young Lives countries see Cueto et al. forthcoming.

14 Calculated from Young Lives' education histories reported by children, capturing grade of enrolment for each year of age.

Lupe: I wonder how is it going to be when I'm seven…
Interviewer: What grade would you be in when you are seven?
L: Second grade.
I: And has anyone told you what second grade will be like?
L: No… I wonder how would it be…
I: And what do think?
L: Well, second grade… I would need to put more effort in it.
I: Put more effort? Into what?
L: My homework.
I: Your homework? Do you think it is going to be more difficult?
L: Yes. More difficult than first grade.
I: And is first grade more difficult than preschool?
L: Yes … a little bit.
I: What is going to be the most difficult thing?
L: Difficult? Not to fall behind.
(Quoted in Woodhead et al. 2009: 45-46)

This analysis of progress has been focused on Older Cohort children tracked through school from 8 to 12 years old (from 2002 to 2006). Next, we extend the study to the Younger Cohort born seven years later. These children reached school age within a rapidly changing education system across Ethiopia and were again tracked from 8 to 12 years old (from 2009 to 2013). Figure 9 suggests two major trends. First, a higher percentage of the Younger Cohort showed reading capacities at 8 and 12 years old than their Older Cohort peers had shown when they had been assessed at the same ages. This reflects a general, although only slight, improvement in early literacy. But second, the *rate of improvement* in assuring foundation literacy between ages 8 and 12 shows no sign of change between cohorts: the same share of non-readers at age 8 became readers by age 12 in both cohorts (i.e. the step up from age 8 to 12 for both cohorts is very similar).

Figure 9. *Reading progress in Ethiopia sites for both cohorts, from ages 8 to 12, (2002-06) and (2009-13)*



Source: Calculated from Young Lives Rounds 1-4 data.

2.5. Early childhood programmes have been introduced as a strategy to strengthen school readiness and contribute to the quality and outcomes of education

This review of Young Lives evidence on children acquiring literacy as a core basic skill has so far concentrated on the primary school years. But country policies supported by growing international research evidence increasingly recognise the potential of high-quality early childhood care and education (ECCE) to support skills development of young children, especially children growing up in poverty, first-generation learners and children in areas with low rates of adult literacy.

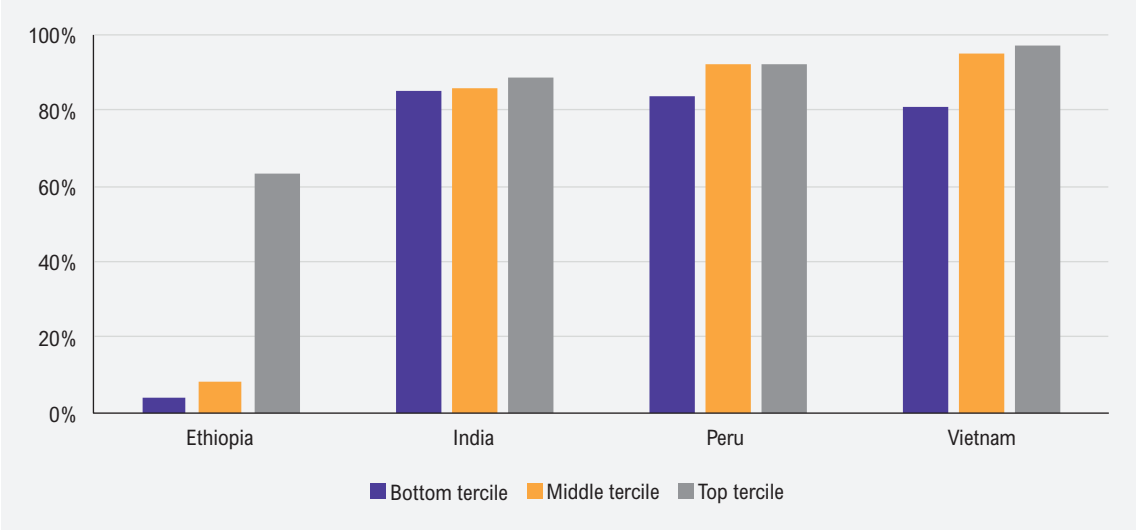
International organisations, such as the Education Commission, promote ECCE programmes for their impacts on foundational skills which can 'improve school readiness and can lead to better primary school outcomes, particularly for poor and disadvantaged students' (Education Commission 2017: 60) and Sustainable Development Goal Target 4.2 identifies 'pre-primary education' as a strategy to strengthen school readiness and contribute to the quality and outcomes of education (Woodhead et al. 2017). The potential benefits of ECCE are revealed through powerful evidence from experimental evaluations, originating more than 50 years ago, predominantly in the USA but now increasingly of global scale and significance (Britto et al. 2013; Woodhead et al. 2014).

When Young Lives was launched, one of the earliest priorities was to study the scale, changing role and potential impact of ECCE programmes. Young Lives longitudinal community-based surveys complemented the growing body of evidence showing long-term benefits for children's development and learning from participation in high quality experimental programmes. Studies carried out across Young Lives countries highlighted features of more 'everyday' programmes for young children and their families in highly variable contexts in terms of resourcing and management, especially questions around equity of access and quality (Woodhead et al. 2009).

ECCE programmes were already well established in India, Peru and Vietnam, with enrolment rates of more than 80 per cent, even though programmes varied in terms of content, intensity, duration, and quality. They were variously provided by the state, the private sector, as well as by informal sectors, for example through *anganwadis* in India, integrated within the primary school system in Vietnam, and through non-formal *PRONOEIs* or class-based *Jardines* in Peru.

Variations in access and quality of programmes offered a challenge to delivering on the potential of pro-poor early childhood programmes to enhance children's development and learning (Woodhead et al. 2009). Although enrolment rates were high, within Vietnam, India and Peru modest differences related to location and wealth favoured urban and richer households. It was in Ethiopia where differences were largest at that time, with preschool attendance common among urban households where 64 per cent were enrolled, but rare in rural areas with only 4 per cent enrolment (Orkin et al. 2012).

Figure 10. *Access to early education programmes among the Younger Cohort, according to country and wealth terciles, 2006*



Source: Calculated from Young Lives Rounds 1-4 data.

More recently, Young Lives has been able to return to these issues related to early education in Ethiopia – with a focus on the *implementation* of early learning services at scale. A national policy framework for ECCE was launched in 2010, beginning a process of reorganising and extending programmes into rural areas with government resources and support (Rossiter 2016). The most ambitious target for the Government of Ethiopia was the rollout of one year of pre-primary education known as 'O-Class'. Most significantly, the fifth Education Sector Development Plan, 2015, proposed enrolment increases from 34 per cent of 4-6 year olds in 2015 to 80 per cent by 2020 (Government of Ethiopia 2015). This process has not been straightforward but by 2018 almost 50 per cent of 4-6 year olds are enrolled in an early learning programme, a massive expansion from 3 per cent nationally when Younger Cohort children attended in 2006/07.[15]

As access has expanded, it has been accompanied by questions of service quality and what programme rollout may mean for the acquisition of basic skills. Moreover, as pre-primary service coverage increases, it is common for expectations in Grades 1 and 2 to increase, as illustrated by teachers in Peru and Ethiopia:

> "There are some children (without preschool) who are very smart and they get easily and quickly to the same level [of children with preschool], but sadly there are others who can't do that and you know that in primary school you do a little bit of preparation for about two months, no more, and those two months are not enough for a child who hasn't been in pre-school." (Teacher, Peru, quoted in Ames et al. 2010: 19)

> "At this time, in our country, to join Grade 1 a child should have the capacity to read and write. You cannot teach them how to hold a pen; we are sending children who have such problems back to their parents." (Teacher, Ethiopia, quoted in Orkin et al. 2012: 54)

Young Lives has supported the Government of Ethiopia by conducting small-scale exploratory studies to inform the operationalisation of early education policies, including on the response of regional states in planning, financing and management for scale-up; the potential of teacher training institutes to supply sufficient trained teachers to work with young children; and the

15 Note that this is a national statistic and enrolment among Young Lives children was higher than this, partly due to sampling of Young Lives sites in or near urban centres and a different urban-rural split than is observed nationally.

perspectives of community stakeholders on what children need for their development and how that relates to service provision in the years before joining school (Woodhead et al. 2017). While all the evidence points to the potential of investment in early childhood and strong demand among communities, delivery constraints are clear, with none of the seven regions consulted having a budget allocated for ECCE services and each emphasising a shortage of qualified personnel and little guidance on ECCE implementation standards, monitoring and supervision approaches. Moreover, the O-Class initiative has found fertile ground in the larger and more established regions, as a logical extension of now well-established primary school systems, but this stands in contrast to relatively under-resourced regions which can face difficulties in gathering local political support and in raising awareness within communities (Woodhead et al. 2017).

The risk to children if governments push ahead to implement early learning programmes in low-resource contexts is that millions may be enrolled in low-quality pre-primary and then progress to low-quality primary classrooms. Despite considerable investment and the establishment of a new teacher cadre for pre-primary grades, the long-term policy objective of higher rates of basic skills is then not realised. These risks are greatest during a transitional period when education quality systems are being consolidated, teacher training for pre-primary and primary classes is being strengthened, and effective governance and monitoring systems introduced (Woodhead et al. 2014).

3. Reducing to zero the number of children not reaching a threshold of basic skills

One of the most important and challenging features of the Sustainable Development Goals has been the move beyond focusing mainly on 'access and enrolment' to give greater priority to 'development and learning'. Access to schools has been a high policy priority over recent decades, especially for countries with emergent education systems, as demonstrated by Millennium Development Goal 2. But access is an incomplete and inadequate goal for educational development, as well as a misleading indicator of the progress being made across diverse countries. This is starkly illustrated in Table 3 which summarises enrolment rates for Younger Cohort children across the four Young Lives countries, compared with their peers in two very different countries, Estonia and Finland, which are exemplar highest achievers in international assessments (ranked three and five, respectively, in PISA Science 2015).

Based on enrolment rates alone, there are only slight differences between countries even up to age 15, yet the differences are striking on numerous other indicators of quality, particularly learning achievement (i.e. Peru or Vietnam, which ranked 64 and 8, respectively, in PISA Science 2015). In addition, with enrolment rates approaching 100 per cent, inequalities within or between-countries on simple access criteria are automatically low, which is positive, but also highlights that access is no longer a sufficient indicator of progress towards education goals. The priority now is to transition attention from 'mass access' to also ensuring 'mass learning', especially to step out of the low-level equilibrium of educational quality that is a feature of many of today's LMICs (Rolleston 2016).

Table 3. *Enrolment rates for Younger Cohort children, and for children in high-performing OECD countries*

Country	Ethiopia sites	India sites	Peru sites	Vietnam sites	Estonia	Finland
Younger Cohort enrolment rate at age 12 (2013)	95%	97%	99%	98%	99%	99%
Younger Cohort enrolment rate at age 15 (2016)	93%	91%	97%	80%	98% (2015)	99% (2015)

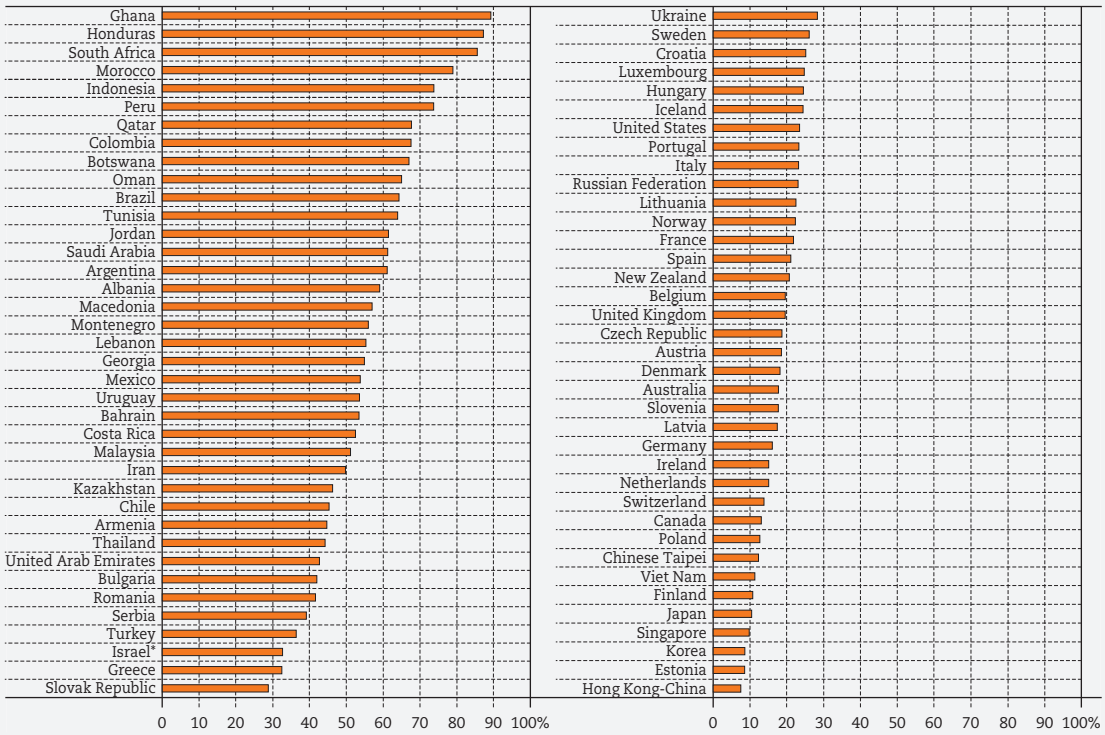
Source: Young Lives Education and Learning Factsheets for R4 and R5; OECD STAT, enrolment by age (12 and 15) and population by age (12 and 15) for 2013 and 2015 (latest available). Estonia and Finland ranked 3 and 5, respectively, in PISA Science 2015.

In the drive towards 'mass learning', delivering on the right to basic skills shifts attention away from a preoccupation with overall inequalities in learning (i.e. between highest and lowest achievers in any school, country or region), towards the idea of a threshold level below which an individual is denied the basic skills that are required to establish the social foundations to participate fully in society. It helps to draw attention to the distributional component of educational progress and pays less attention to learning progress among middle- and highest-achievers, instead emphasising the attainment of basic skills for low-achievers as the pathway to improving average achievement with equity, as was illustrated by the data on early reading skills in Section 2.

A focus on eliminating *very-low* achievement can deliver on the right to basic skills but may also be an efficient way that national governments can 'turn the tide on the learning crisis' (DFID 2018: 13). Making it a priority that all children reach a minimum expectation of achievement appears to be the way that countries have transitioned most quickly out of very-low levels of learning, with evidence suggesting that the percentage of students at very-low levels of achievement decreases strongly as a country progresses to average overall performance (Crouch and Gustafsson 2018). But such a prioritisation raises important equity and efficiency questions, relating to the distribution of opportunities to learn within as well as between countries, as well as how these distributions shift over time.

Figure 11 summarises OECD estimates for 76 countries, showing the share of students not acquiring basic skills by age 15 (based on PISA and TIMSS data). By using a measure of learning, the OECD has shown that low-income countries are much further behind high-income countries than enrolment rates would suggest – and that the acquisition of basic skills is not just an issue of poor children from poor countries but an issue for many children in many countries (OECD 2015). There are nine countries – including Peru, a Young Lives country – in which more than 60 per cent of students do not acquire basic skills by age 15. In contrast, in another Young Lives country, Vietnam, only around 10 per cent of students do not acquire basic skills – a rate that is lower than for the United States, the United Kingdom, Germany and Canada.

Figure 11. *OECD estimates of the share of students not acquiring basic skills by age 14/15*



Source: OECD 2015.

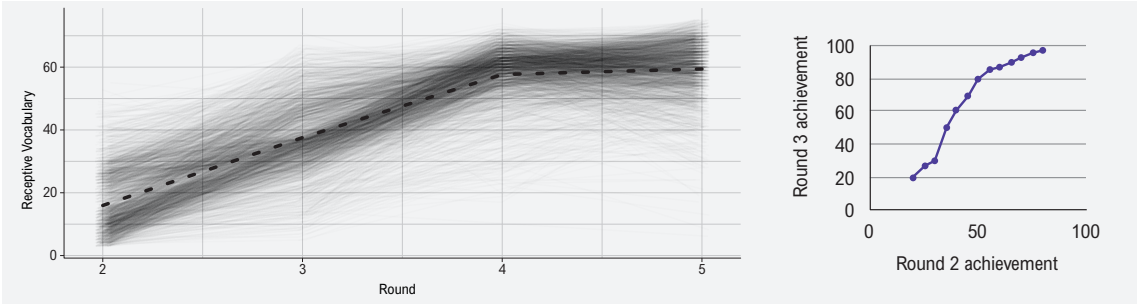
Figure 11 illustrates the power of country level monitoring to highlight major differences in progress towards basic skills for all. But it also draws attention to some of the limitations. First, large-scale international assessments have tended to include few low-income countries and when they do, coverage includes only those children enrolled and eligible, which can often be a selective group in the population (McAleavy et al. 2018). The balance is shifting, however, for example 'PISA for Development' will use survey instruments that are adapted for LMICs (OECD 2016c) and regional assessments such as those conducted by Southern and Eastern Africa Consortium for Monitoring Educational Quality (SAQMEQ) generate student achievement data with a goal to use these to improve education quality in the 16 member states. Second, large-scale surveys are cross-sectional and do not capture trends in an individual child's learning progress. This limits the information that is then available on achievement growth over time, on the changes for different population groups and the inequalities that may be masked by population-based statistics.

3.1. Young Lives longitudinal evidence about progress in skills development during critical periods of children's education

Young Lives' longitudinal research design has been able to extend cross-sectional evidence to provide a dynamic picture of children's skills development during a crucial phase of the life course, from ages 5 to 15. Cognitive assessments at different ages (see Table 2) can be linked and used to construct a 'learning trajectory' for each Young Lives child.

In Figure 12 (left), each line represents a child and shows his or her scores on assessments at Rounds 2, 3, 4 and 5, with the darker dotted line capturing the general trend over time. These individual 'learning trajectories' can also be grouped and used to illustrate a general picture of skills development from one point in time to the next. For example, Figure 12 (right) plots achievement at Round 3 (vertical axis), according to achievement at Round 2 (horizontal axis). To do this, children with equivalent achievement are grouped and each marker represents a group. This approach illustrates changes in learning progress depending on starting level of achievement. It can be used to understand how much progress each group makes and what progress towards a universal skills threshold looks like. In the remainder of this section we refer to these as 'learning profiles' which track the overall relationship between skills at two points in time, for any country sample.

Figure 12. *(Left) Receptive vocabulary scores, over time, per child, Vietnam; (Right) Example 'learning profile'*



Source: (left) Tredoux and Dawes 2018; (right) a 'learning profile' constructed from all individual learning trajectories in a sample, summarising the overall relationship between skills at two points in time.

Learning profiles go beyond measuring relatively static levels of skill, to help understanding of how learning progresses for groups of children from early childhood through to early adulthood. They can provide insights about different patterns of change across countries. This

allows us to understand more about differential progress, such as whether children who start off with lower levels of achievement make more or less progress over time, compared to those who have higher levels of achievement at earlier points – and how this differs across countries.

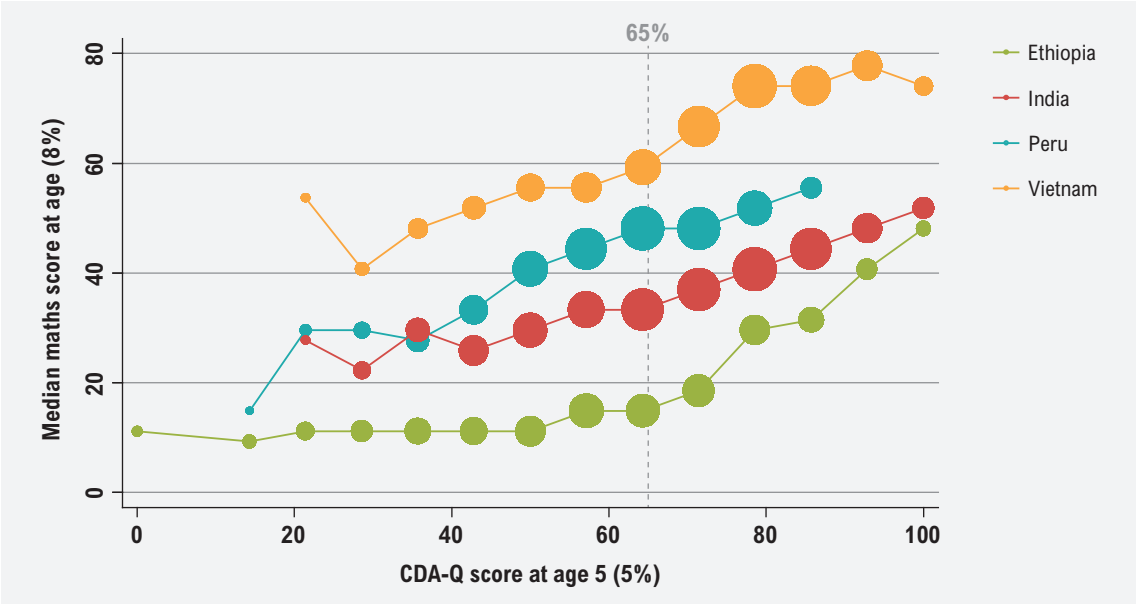
In the following sections we begin by summarising evidence for cohorts between 5-8 years old (Section 3.2) and then between 8-12 years old (Section 3.3) to show the general trends across countries. More detailed analysis of specific country profiles is provided for Peru and Vietnam (Section 3.4) and Ethiopia and India (Section 3.5), with implications for policy development geared towards delivering basic skills.

3.2. Tracking learning progress from 5-8 years old

Figure 13 provides an overall summary of learning profiles for Younger Cohort children between 5-8 years old, combining all four Young Lives study countries. Average levels of cognitive achievement at age 5 are shown on the horizontal axis and the average level of mathematics achievement at age 8 on the vertical axis. Children are grouped by level of achievement at age 5.[16] The markers (in the shape of coloured circles) represent the average scores for each group, with the size of the marker signifying the number of children in each group.

From this we can see that the striking message from this period is the substantial gaps that open *between countries* by age 8 for children of equivalent achievement at age 5. This can be seen in large vertical gaps between the blue, green, red and yellow lines, respectively.

Figure 13. *Learning profiles for Younger Cohort, ages 5-8*



Source: Rolleston et al. 2014.

There is clear country variation in early skills development, with children learning most in Vietnam and least in Ethiopia across all levels of prior achievement. Even though country performance was comparable at age 5 (between 60 and 70 per cent average for each country), rates of learning in numeracy during the period to age 8 are markedly higher in Vietnam than in Peru, India and Ethiopia, in that order – mirroring the rates of literacy acquisition in the four countries (shown in Figure 6).

16 At age 5 (2006) a Cognitive Development Assessment (CDA-Q) was used which tested basic understanding of concepts of quantity and number. At age 8 (2009) a mathematics assessment was administered to the same children.

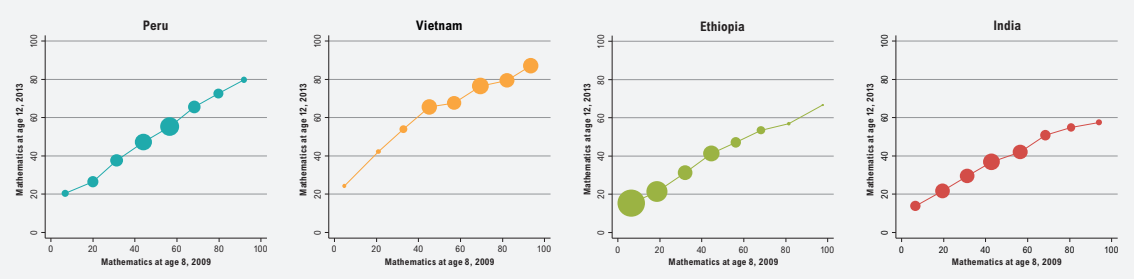
The black dashed line provides a reference point for comparison of children who had equivalent and roughly average scores across countries (65 per cent) at age 5. In Ethiopia, for example, the group of children scoring 65 per cent at age 5 goes on to score an average of less than 20 per cent in the age 8 assessment.[17] In contrast, in Peru and Vietnam, children who score 65 per cent at age 5 go on to reach 45 per cent and 60 per cent, respectively, in the age 8 assessment. In short, children in the four study countries are already on quite different paths towards basic skills between ages 5 and 8. Young Lives research has considered this in more depth, using estimates from inferential statistical models which account for the known differences in family background between countries. These analyses indicate that differences in exposure to and effectiveness of schooling in the early grades account for an important portion of this divergence (Singh 2014).

3.3. Tracking learning progress from 8-12 years old

The period from age 8 to 12 is a potential 'consolidation phase' for school systems to support the development of basic skills, building on education foundations established during the early childhood and primary school years. In Young Lives sites, at least 95 per cent of Younger Cohort children were enrolled in school in each country through to the age of 12. At age 12, Young Lives children completed a mathematics assessment which could be linked back to their achievement scores at age 8 (as was done to track learning progress between ages 5 to 8). Data from this period extends evidence on the trajectory of learning in Young Lives countries, as shown in Figure 14.

In Figure 14 – which plots the profile for each country – the horizontal axes are identical and show child maths score at age 8 (in 2009), while the vertical axes, also identical, show maths score for the same children at age 12 (in 2013). We can see that learning progress between the ages of 8 and 12 mirrors the pattern observed from age 5 to 8, with profiles showing large differences *between countries*, increasing the gaps that had earlier emerged (Figure 13). This suggests that in countries where foundation skills are weak, progress is weak despite a commitment to attend school.

Figure 14. *Learning profiles from ages 8 to 12 in Young Lives countries, Younger Cohort 2009-13*



Source: Young Lives household survey Round 3 and Round 4 mathematics assessments. Round 4 mathematics score uses only common items across countries, of which there are 13.

From ages 8 to 12, data for Vietnam and Peru suggest children are making relatively stronger learning progress compared to India and Ethiopia, with minor differences between boys and girls (Box 2). But looking beyond average scores, the four countries differ in two ways: (i) in the rate of progress that children make according to their prior achievement (i.e. the size of the gaps

17 The CDA-Q and Round 3 mathematics assessments are different, so a 20 per cent score at age 8 does not mean lower achievement than a 65 per cent score at age 5 – it is just a lower score on a harder test.

between countries is not constant for all levels of prior achievement); and (ii) in the proportion of children at different levels of prior achievement (for example, Young Lives sites in Ethiopia and India have a large proportion of children with very low achievement at Round 3, while in Peru and Vietnam a larger proportion of the sample had achieved moderate or high scores at Round 3). Both factors indicate stark differences in progress towards basic skills across countries.

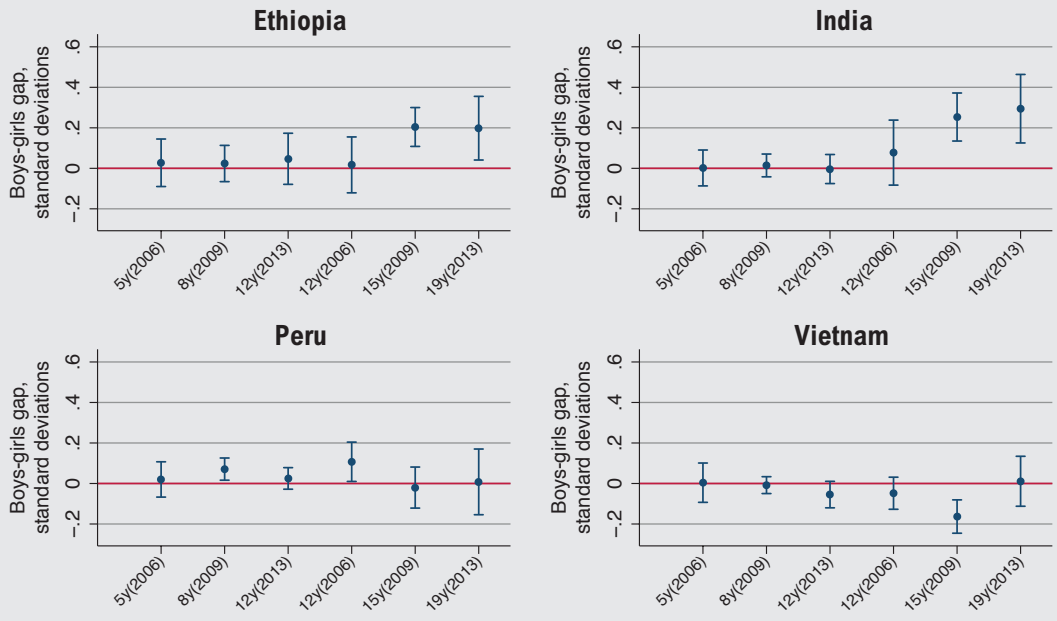
Learning profiles point to interesting and sometimes surprising differences in achievement levels and progress between countries. Country comparisons can illuminate differences in paths to basic skills from age 8 to 12 and are elaborated in Sections 3.4 and 3.5.

Box 2. The evolution of gender gaps in skills from ages 5 to 19, in Ethiopia, India, Peru and Vietnam

Young Lives longitudinal data have been used to study the emergence and evolution of gender gaps in learning, from preschool to early adulthood. It is the most extensive panel-based investigation on this question in developing countries, where the core focus on gender-based inequalities in education has typically related to enrolment and grade progression through school. In these areas, considerable progress has been made in the past 15 years. However, years of schooling can hide substantial differences in the levels of skill development in children.

The findings suggest that in the period of basic skills development, in all four countries, gender gaps in learning and skills are either absent or small in absolute magnitude – at 5, 8, and 12 years old (Figure 15). Across countries, however, the period from 12-15 years old is particularly important for the widening of gender gaps in achievement. This implies that policies intended to reduce the eventual gender gap in achievement at the end of schooling should focus on this stage of adolescence/post-primary education (see Winter et al. forthcoming 2018, for a detailed discussion).

Figure 15. *Average gender differences in quantitative skills achievement from 5-19 years old, by country*



Note: Test scores are linked across countries/ages for 8-19y, normalised with respect to the pooled 8y sample.
Source: Singh and Krutikova 2017.

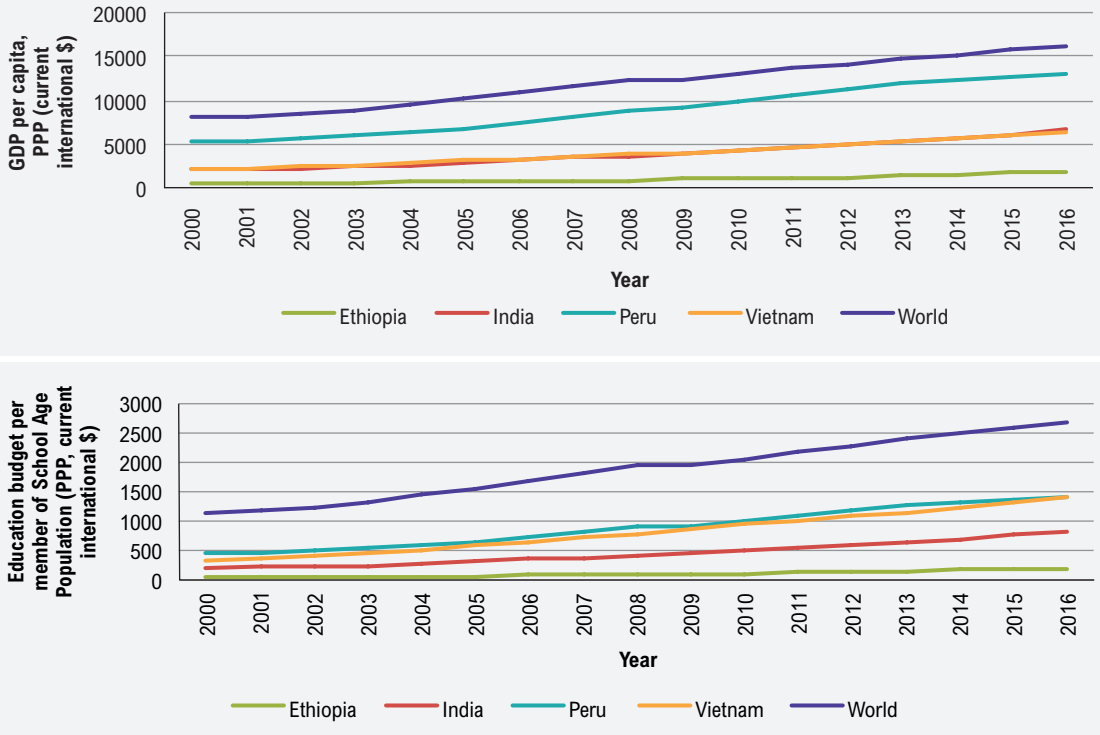
Information on the size and direction of gaps can be important for formulating appropriate policies. Gaps favour boys in Ethiopia, India and (slightly) Peru, but girls (slightly) in Vietnam. This contrasts with OECD contexts, where significant gender gaps in maths and language skills tend to be in the same direction. Subsequently, these learning gaps appear to mostly persist until early adulthood (age 19). However, the mechanisms by which gender disparities in achievement emerge remain considerably unexplained, with much room for understanding the potential domains for intervention in this area. For further discussion of the relationships between gender and the constraints and experiences of going to school, see Boyden et al. forthcoming 2018, Winter et al. forthcoming 2018, and Pells and Morrow 2018, which discuss the issues at length.

Source: Singh and Krutikova 2017.

3.4. In Peru and Vietnam learning progress from ages 8 to 12 is relatively strong, but with substantial variations in opportunities to learn and therefore in pathways to basic skills

Part of the justification of free public schooling consists in the equalisation of 'opportunities to learn' and the mitigation of learning inequalities that result from levels of home advantage (Rolleston et al. 2014). But differences in the distributions of achievement in Vietnam and Peru – two countries with quite different average incomes but similar levels of public education expenditure per pupil (Figure 16) – suggest that the sharing of opportunities to learn within a school system can influence strongly the proportion of children that reach a level of basic skills.

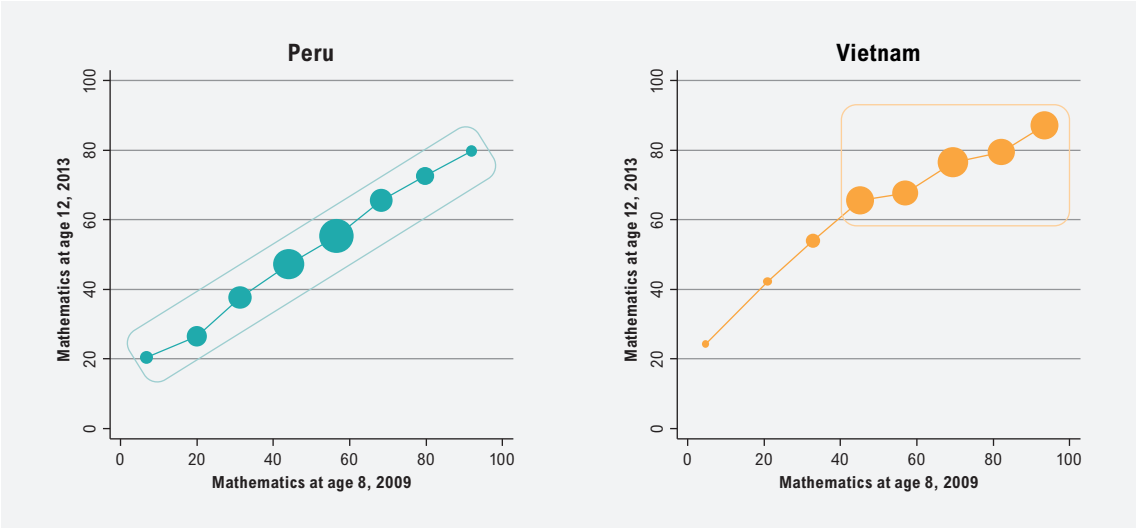
Figure 16. *Incomes over time and estimated government education budget per child, 2000-16*



Source: Authors' calculations based on World Bank World Development Indicator data for GDP per capita, average rates of GDP spent on education and share of population age 0-14. Data on share of government spending on education are not available for every country-year combination, so these curves are only indicative as they smooth across available data points.

Figure 17 offers a striking contrast in country profiles for Younger Cohort from ages 8 to 12. Peru and Vietnam each have groups of children that have reached the highest levels of achievement in Young Lives assessments (see Figure 14). However, the relationship between achievement levels at age 8 and age 12 in Peru implies that early achievement is strongly predictive of later levels, such that low early achievers typically attain only low levels of later achievement. This is a well-known phenomenon, known as the 'Matthew Effect', but it is more than just early achievement being predictive of later success: the trend in Peru implies that students progress in parallel, alongside each other, with lowest achievers continuing to languish behind their peers and most children progressing a substantial distance away from a path to basic skills, except for an elite.

Figure 17. *Learning profiles in Peru and Vietnam for Younger Cohort children from ages 8 to 12 (2009-13)*



Source: Young Lives household survey Round 3 and Round 4 mathematics assessments. Round 4 mathematics score uses only common items across countries, of which there are 13.

In Vietnam, in contrast, although there is a (very) small group of children with low achievement still at ages 8 and 12, Figure 17 shows that children with quite different scores on earlier cognitive tests move up to similar levels of basic skills achievement by age 12. The construction of this figure suggests some sort of 'ceiling effect', which is usually considered a weakness, but in the study of basic skills it is less of a concern: nearly all children have reached a threshold level of basic skills, as indicated by performance above 60 per cent on this assessment. Achievement beyond that level is a different matter.

While caution is needed in trying to interpret the significance of these contrasting profiles based on Young Lives samples, they can be instructive in pointing to country-specific major trends, issues and policy directions. In return, the deeper understanding about education policy and outcomes in study countries, gathered through targeted research, improves the interpretation of general learning profiles. For example, these profiles reflect Young Lives findings on Vietnam's approach to support disadvantaged, particularly minority groups (Rolleston et al. 2013), in contrast to indications of 'discrimination' according to advantage in Peru based on ethnic-majority status and high early ability (Glewwe et al. 2014: 32).

Disadvantage linked to home backgrounds may be expected to impact negatively on pupils' learning in almost any context. As much as public schooling can equalise opportunities to learn, differences in schooling quality within countries may also compound differences in home advantage and inequalities in basic skills. It is quite common for more advantaged

children to attend higher-quality schools, but progressive education policy can overcome underlying inequalities in society to deliver basic skills for all.

However, we would argue that where a society is marked by pervasive inequalities, striving for universal basic skills will require education policies that are strongly geared towards providing greater opportunities to learn among disadvantaged groups. On an international ranking of family income levels (known as the Gini index) Young Lives countries are not at the extreme ends of equality/inequality rankings, although Peru is certainly ranked most unequal (Table 4).[18] It is instructive to consider this ranking alongside Young Lives evidence for education. Although Vietnam is around the median in income inequality terms, it is far from median in its ability to assure basic skills for all.

Table 4. *'Starting' inequality that education has to 'overcome' in allocating opportunities to learn to deliver basic skills for all*

Country	Ethiopia	India	Peru	Vietnam	Japan (median)
Gini index (lower = more equal)	33	35	45	38	38
Gini index rank (of 156 reported)	113	97	40	81	79

Source: CIA World Factbook, Distribution of family income - Gini index. Latest country estimates and associated ranks. The more equal a country's income distribution, the lower its Gini index. If income were distributed with perfect equality the index would be zero; if one person had all the income, the index would be 100 (Central Intelligence Agency 2018).

In Peru, educational opportunities and investment in basic education are 'unfairly' distributed, to the extent that despite available funds (Figure 16), policy choices mean that children from less advantaged backgrounds continue to attend schools that have fewer resources and teachers with lower skills, who receive less training and support (Cueto 2016; Cueto, Penny and Sanchez 2018). The allocation of resources among schools mirrors, to a large degree, the distribution of incomes in society. Urban schools (public and private) can congregate richer, Spanish-speaking students and provide better facilities and more pedagogically able teachers.

Opportunities to learn are also linked to teacher qualifications, which provide a rough indication of pedagogical skills and content knowledge. For our Peru sample, 72 per cent of teachers working in private schools attended university compared with only 32 per cent working in public rural schools (Cueto 2016). The identification of teacher skills to support student learning has been taken further in Peru with the development of a measure of teacher pedagogical content knowledge (PCK). This captures a teacher's ability to identify common student misconceptions and to provide solutions for errors and serves as an improved indicator of 'opportunity to learn', with a high score indicating a teacher that is better placed to support the learning process (Cueto 2016). Teachers with higher PCK scores in Peru sites are twice as likely to be found in schools attended by children from advantaged backgrounds, to the point that 38 per cent of children from the richest backgrounds will be learning from teachers with high PCK, compared to 19 per cent of their peers from poorer backgrounds (Cueto, Penny and Sanchez 2018).

A teacher's skill depends also on their ability to communicate effectively, but around 2 in 5 indigenous children at age 12 in Young Lives Peru sites attended schools where Spanish was the only language of instruction (see Box 3 for a discussion of language-related barriers to progress across contexts), thus impacting on their right to learn in their mother tongue

18 On the Gini index see, for example, https://data.worldbank.org/indicator/si.pov.gini

(Cueto 2016). This indicates a dimension of discrimination according to ethnicity, which has been shown to be another mechanism by which school quality interacts with pupils' home backgrounds in Young Lives sites of Peru – in so far that schools may be differentially effective *overall* in teaching children with particular home backgrounds.

Box 3. Language-related barriers to progress across Young Lives contexts

Although teaching in Spanish is discussed here, for the case of Peru, the influence of language of instruction policy and implementation varies substantially across Young Lives contexts.

In India, for example, many children will have to learn their regional language (Telugu in Andhra Pradesh), Hindi and English, although this may differ depending on the type of school that the child is attending. One caregiver in India pointed out that due to the rapidly increasing number of children joining her son's private school, they are now learning in Telugu instead of English. The shift has not been entirely positive for Srikanth as he found learning in Telugu even more difficult than Hindi and English:

> "I don't know why he is poor in Telugu, but in English, Hindi, maths he is okay and this time in Telugu he scored 19. In others he is okay. He scored good marks … [I] don't know what happened, whether he is facing difficulty in understanding Telugu or he is not able to write. But anyhow, as he is going further in his classes he is not picking in Telugu, but is good in other subjects." (Parent, quoted in Streuli et al. 2011: 32)

In Ethiopia, a country with over 90 registered languages and freedom for regional states to choose their own language policy in primary grades, similar transition challenges emerge. As one teacher explained, even if older students have learned well in their mother tongue, if they move schools for later primary grades (which is often a necessity to finish the full cycle), they may have insufficient language skills in a second or third language to access the curriculum:

> "Some have been learning in their local language (for instance students from the Wolayita ethnic group) and when they come here they go back to Grade 5 (from Grade 7 or 8). The reason is the language … Even if they are in Grade 8, they face difficulty in understanding some concepts since the teachers translate them [from English] into Amharic. So, some don't understand Amharic well and prefer to go back to lower grades." (Teacher, quoted in Orkin et al. 2012: 57)

In Vietnam, as in other contexts, literacy skills influence progress across the curriculum. A parent of an ethnic-minority child described the language problem for his third grade daughter as follows:

> "Kieu solves numeric calculations instantly. But when the teacher starts putting [mathematics] in words, something like 'Hoa has five nectarines...', she gets confused. She did not know that a nectarine is similar to a peach." (Parent, quoted in Huyen 2009: 20)

Using Young Lives data, Glewwe et al. (2014) find that for two definitions of disadvantage in Peru it appears that schools favour advantaged students: students with higher skills at age 5 acquire language skills more rapidly than do children with lower skills early on, magnifying gaps; and ethnic-majority students learn more maths than ethnic-minority students, even after conditioning on skills at age 5 (Glewwe et al. 2014). In contrast, there is no evidence that schools in Vietnam favour advantaged children. Indeed, the one significant effect is that girls, who are often considered to be a disadvantaged group, appear to pull ahead of boys between the ages of 5 and 10 (Glewwe et al. 2014).

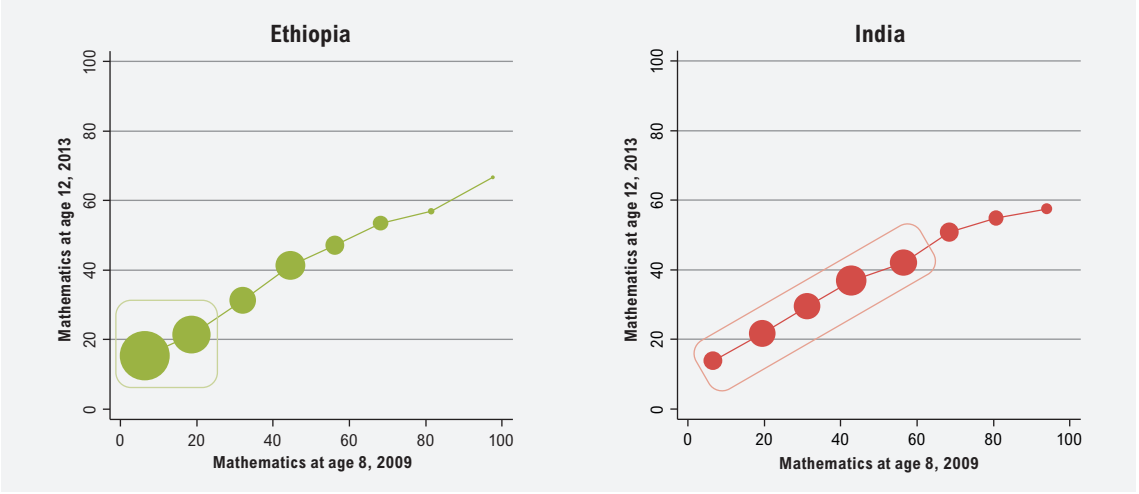
It is not inevitable that societal inequalities lead to differences in opportunities to learn and the acquisition of basic skills. The contrast between Vietnam and Peru in Figure 17 suggests something about Vietnam's recent history and its education system that sets out to decouple acquisition of basic skills from family economic circumstances. The country's education law (Vietnam National Assembly 1998) sets out that the state will provide education for everyone, while giving priority to ethnic minorities and other disadvantaged groups. This has led to policies which have included those focused on the need for all pupils to attain 'minimum achievement standards', with specific attention and subsidies to schools in disadvantaged areas.

This approach reflects a sort of 'progressive universalism', as advocated for by the Education Commission, which balances the virtues of wide coverage for effective inclusion while recognising the scarcity of public resources and proposes that funds be allocated for the highest return activities and to those least able to pay for services (Education Commission 2017). The focus on basic skills favours the allocation of public resources to schools that serve the lowest performing students, whoever and wherever they may be (and in respect of 'universalism', captures the notion of basic skills as a right). This prioritisation implies that programmes for specific social groups (e.g. for first-generation learners or ethnic minorities) may be justified as part of a strategy to deliver on the right to basic skills. Evidence for Vietnam suggests that the use of positive discrimination policies has substantial impact on the early learning among ethnic-minority children and the acquisition of basic skills *among all children* (see, for example, Rolleston et al. 2013).

3.5. In India and Ethiopia, Young Lives data suggested very low rates of progress from ages 8 to 12, with children unable to keep pace with the curriculum and 'off-track' from a path to basic skills

This section began by summarising OECD cross-sectional data for 76 countries. Figure 11 showed for Vietnam and Peru around 90 per cent and 25 per cent of children, respectively, had acquired basic skills. Despite this large difference, across Young Lives these are the higher achievers (Figure 14). In India and Ethiopia, learning profiles show very low levels of achievement at age 8 and the slowest rates of achievement progress to age 12 (Figure 18, with the circle sizes proportional to the number of children). From the point of view of skills development, these cases illustrate that very low levels of learning are the norm in some countries, with the vast majority of children comfortably 'off-track' to achieve basic skills.

Figure 18. *Learning profiles in Ethiopia and India for Younger Cohort children from ages 8 to 12 (2009-13)*



Source: Young Lives household survey Round 3 and Round 4 mathematics assessments. Round 4 mathematics score uses only common items across countries, of which there are 13.

Neither Ethiopia nor India are included in the OECD's summary of basic skills, but to understand what such low achievement levels mean in terms of international indicators of basic skills, it is possible to contrast the achievement levels of Young Lives' Younger Cohort children with performance in international assessments at fourth grade (Singh 2014). This suggests that about half of the 12-year-old children in Ethiopia, and about a quarter in India, fail to reach the low achievement benchmark *for 10 year olds*, defined by TIMSS as: 'Students have some basic mathematical knowledge. Students demonstrate an understanding of whole numbers and can do simple computations with them' (Singh 2014: 9). Such low levels of achievement can be the consequence of early low literacy and low numeracy and relate strongly to the combination of curriculum pace, student and school/teacher readiness in the early grades. The next section presents findings from school surveys to investigate progress in relation to the curriculum.

4. Bridging the gap between children's learning and the pace of the curriculum

In 2010, Young Lives' 'nested' school surveys were introduced in acknowledgement of the growing importance of school in the lives of children. At this point, Younger Cohort children were approaching age 10 and the vast majority had joined primary school. While Young Lives longitudinal research offered broad coverage of children's lives and development, we recognised a data gap in relation to the growing significance of schools.

These studies were designed to be context specific and aligned to policy questions relevant to specific countries at specific points in time (Boyden and James 2014). Early surveys, conducted in 2010-11, followed index children to schools and grades that they attended, thereby covering multiple grades in a single school (Table 5). Later surveys, since 2011-12, followed a different approach, more compatible with school effectiveness research, preferring to target specific grades and sample Young Lives index children and their peers in those grades. All school surveys gathered achievement data from children as well as school quality indicators and characteristics of teachers (see, for example, Rossiter et at. 2017 for a summary of school survey data collected).

Table 5. *School surveys, according to approach, year and location; showing sample size and grades*

	Tracking index children into their classes, so at multiple grades		**Targeting grades and capturing index children and their classmates**	
	2010	**2011**	**2011/12 (Vietnam) 2012/13 (Ethiopia)**	**2016/17**
Ethiopia	690 Older Cohort children 952 Younger Cohort children		Grades 4 and 5 11,982 children	Grades 7 and 8 12,182 children
India	950 Younger Cohort children			Grade 9 9,820 children
Peru		1,770 children (index children and classmates)		Secondary Grades 3, 4, 5 8,474 children
Vietnam			Grade 5 3,300 children	Grade 10 8,860 children

Source: Compiled from survey data summary reports, available at www.younglives.org.uk.

Young Lives school surveys employed curriculum-linked assessments which had been developed in collaboration with education officials and curriculum experts in study countries (Azubuike et al. 2017). The design retained the cross-country comparative approach that was used across Young Lives and provides the opportunity to relate student achievement levels – and progress within the school year for surveys since 2011-12 – to curricular expectations.

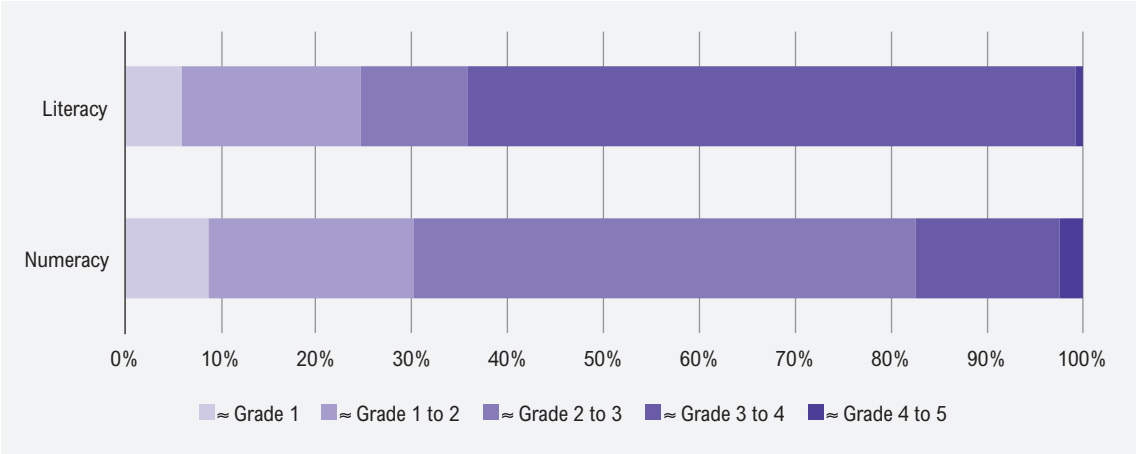
4.1. Large numbers of students off-track for learning basic skills in Ethiopia

In this section we introduce school survey findings by focusing on Ethiopia, where data provide evidence that in some contexts *very-low* achievement in relation to curricular expectations is the norm.

The Young Lives school surveys in Ethiopia took place with children in Grades 4 and 5 in 2012-13, and with children in Grades 7 and 8 in 2016-17. The surveys were undertaken within all schools covering these grades located within 30 sites (Rossiter et al. 2017).[19] The 'repeated measures' design required data collection at the beginning and end of the school year, to allow analysis of maths and language achievement *levels* and *progress*. From these data, school 'value-added' can be estimated (Box 4) and related to school, teacher and student background factors, which is rare in the contexts in which Young Lives is working.

Ethiopia has stated minimum learning competencies for all primary grades (Government of Ethiopia 2015), which informed test item development. Based on these official competency standards, Figure 19 summarises the share of students at five benchmarks of proficiency for literacy and numeracy, at the end of the school year. The benchmarks do not have a 1:1 interpretation in terms of grade, in part because minimum learning competencies are cumulative and often overlapping in grades, but also because assessments cannot be extensive enough to cover every competency. Nonetheless, suggestive benchmarks span Grades 1 to 5, with the highest benchmark '≈ Grade 4 to 5' representing the share of students performing at the level expected by the curriculum (Rolleston and James 2015)

Figure 19. *Student proficiency in literacy and numeracy in Grade 4/5 (average age 11.5), Ethiopia, 2012-13*



Source: Adapted from Rolleston and James 2015.

When surveyed in Grade 4 and Grade 5 (average age in sample 11.5 years) we estimate that less than 3 per cent of the 11,982 children were able to demonstrate the skills in literacy and numeracy expected by the curricular minimum learning competencies. In numeracy, most students were assessed as at the '≈ Grade 2 to 3' level, while in literacy the majority were at the '≈ Grade 3 to 4' level (see Table 6).

19 This includes the 20 core Young Lives sites and an additional 10 sites in Somali and Afar regional states, which were added to provide information on schooling and learning in communities with a high share of pastoralist households.

Table 6. *Statements for numeracy and literacy showing the most common competency level in each*

Numeracy: majority at '≈ Grade 2 to 3'	Literacy: majority at '≈ Grade 3 to 4'
'Pupils can identify up to four-digit numbers written in words, can place numbers up to two digits in order of magnitude, can perform multi-stage calculations with single-digit numbers and very simple problems presented in words.'	'Pupils can read longer sentences and passages containing some less familiar words, with an understanding of simple events and characters. Pupils have a basic and emerging ability to interpret events and characters.'

Source: Adapted from Rolleston and James 2015.

Interpreting these findings in relation to expected pathways to basic skills, we estimate that students would need to have reached the '≈ Grade 3 to 4' level to be assessed as 'on-track', in this assessment in Ethiopia in 2012-13. On this basis, 1 in 3 children for literacy and 4 in 5 children for numeracy were not on-track and their rate of learning was being outpaced by the curriculum. To give further meaning to the competencies required to be on-track, Table 7 shows two questions at the '≈ Grade 3 to 4' level, for each subject.

Table 7. *Examples of items that students at the '≈ Grade 3 to 4' level could answer correctly*

Literacy	Numeracy
Three donkeys escaped from Ashmelash's farm and ran away into the countryside. The donkeys ran into a lion's den, where the lion was about to go hunting. The donkeys were in _____ a) a dangerous place b) a cold place c) a safe place d) a hot place	85 x 5 = ___ a) 425 b) 405 c) 4025 d) 90
Bezibeh studies hard at school and often gets first rank in maths so his teacher is very happy with him. Bezibeh wants to continue to study hard so that he can train to be a teacher when he is older. This is _____ a) His sadness b) His fear c) His ambition d) His job	What is the value of the number '2' in the number 928? a) 20 b) 2 c) 200 d) 2000

Source: Young Lives primary school survey, Ethiopia, Wave 1 literacy and numeracy assessments.
Note: School survey assessments are presented here in English, but they were presented to children in the language of instruction of their school.

Of the children that had reached '≈ Grade 3 to 4' or above in either subject, approximately two-thirds were from schools located in urban sites, and from generally less-poor backgrounds. However, low achievement was not confined to certain schools or areas – there was no site (from 30) in which more than 15 per cent of pupils reached the highest competency level, a level most closely resembling the minimum standards in the curriculum. Low levels of learning were pervasive across the sample and especially in the poorest communities.

Young Lives qualitative data confirm the gulf between aspirations and achievement with children forced to recognise their futures are very different than they may have hoped, as this quote from Fatuma, the only child from the Young Lives qualitative sample who attempted the Grade 10 final exam, reveals (Tafere 2014):

> "I attended public school where the quality of education is very poor. I did not have a tutor. From our school very few pass the exam, but from the private school in our neighbourhood almost all get good results and seven of them scored 'A' in all subjects … Since childhood I have wanted to finish university education and become a medical doctor … Now, I am just planning to get training in sewing machine." (Fatuma, age 17, 2011)

None of this is to say that children do not learn in Ethiopia – some children answered all items correctly. Yet by framing student achievement in terms of proficiency levels and then interpreting these in relation to a normative reference that is related to minimum competencies or 'basic skills', attention shifts from overall inequalities in achievement, which cut along well known lines of wealth and location, to a realisation that so many children in Ethiopia, richer or poorer, girl or boy, reached levels of achievement that left them a long way off-track to achieve basic skills by the end of primary or lower secondary school.

Where most children do not develop such skills then the issue is not specific to certain groups (or those groups are just very large) and solutions require the identification of overarching causes of slow progress towards basic skills. Government choices regarding teacher preparation, curriculum planning and teaching resources and methods that can support all children's learning are a priority, especially to make sure the lowest achievers who have had least preparation for school are able to establish foundation literacy and numeracy and then progress through each stage of the curriculum.

The sensitivity of these matches and mismatches between learners' level of confidence and competence and teachers' level of teaching has been theorised by psychologists as about the 'zone of proximal development'. Ensuring school curriculum and pedagogy furnishes that zone with appropriate teaching is as much a cultural as a developmental challenge (Rolleston 2003). If teachers are tasked with instructing a curriculum that is beyond the reach of most children, then only the few that can 'keep-up' will do so and teachers will generally lack the capacity to support struggling students, so that each year more will fall behind.

Pritchett and Beatty (2012) have addressed the same issue from a development economics perspective, drawing attention to the risks of an 'overambitious curriculum' consolidating the stagnation of children's learning in some developing countries. They demonstrate from a theoretical perspective that markedly different outcomes can be achieved with the same teacher and student abilities/preparedness and only a change to the pace of the curriculum, concluding that 'learning could go faster if curricula and teachers were to slow down' (Pritchett and Beatty 2012: 1).

Curricula which 'outpace' pupils' real learning act as a barrier to progress by encouraging teaching which is outside the range of what children can realistically master, given their prior learning (UNESCO 2014). Pratham's experiments with 'Teaching at the Right Level' are an attempt to improve the matches between curriculum content/pace, student competencies and teacher skills and may have a lot to add in contexts where low learning and slow – or stagnating – progress towards basic skills is the norm.[20]

20 See: http://www.pratham.org

4.2. By age 14-15, varied learning profiles lead to substantial cross-country differences in basic skills acquisition

Building further on Section 4.1, we can make use of the cross-country nature of Young Lives school survey data to understand more about basic skill acquisition in schools in three quite different contexts. This section focuses on differences and similarities in the learning profiles of children in Ethiopia, India, and Vietnam, with reference to the 2016-17 school survey.[21]

While there is no universal cut-off point across countries, age 14-15 can be taken as a time by which 'basic skills' should normally have been acquired, prior to any specialisation in upper secondary grades. This is consistent with large-scale international assessments such as PISA and becomes our reference point for reviewing estimates of 'terminal' basic skills acquisition across Young Lives countries.

The design of the 2016-17 Young Lives school surveys in Ethiopia, India and Vietnam, conducted with children aged around 14-15, allowed the construction of a common scale of student achievement.[22] One advantage of this type of cross-country comparison is that it allows us to consider the full range of the distribution of basic skill proficiencies among 14-15 year olds, from those failing to meet the lowest levels of basic skill competencies to those exceeding more complex skills.

When grouped into levels, using a 'scale anchoring' process like that used by TIMSS (Mullis 2012), a set of competency 'benchmarks' can be produced (Table 8), summarising what children can do at different levels of achievement: a unique way of understanding and comparing student proficiency across the three countries at this crucial point in their learning trajectory.

Table 8. *Competency benchmarks showing what children can do at different levels of achievement in maths at age 14-15*

Benchmark	Brief competency statement
Level 1	Students can typically answer very simple, single-stage mechanical operations presented in a familiar way.
Level 2	Students can typically answer single-stage mechanical operations presented in a straightforward way, and demonstrate understanding of simple mathematical functions and concepts across a range of topics.
Level 3	At this level students start to demonstrate understanding of higher-level mathematical operations, and are increasingly able to use this understanding in applied problems.
Level 4	At this level students can typically answer complex mathematical problems, including in applied settings. Students can typically answer complex mechanical questions, and demonstrate understanding of sophisticated mathematical functions. Students have good problem-solving skills, and are usually able to answer applied problems involving multiple pieces of information.
Level 5	At this level, students demonstrate advanced problem solving and reasoning skills. Students can typically answer sophisticated applied questions combining their understanding of multiple mathematical functions and specialist knowledge, and involving the use of multiple pieces of information and multiple stages, including presented in abstract and unfamiliar formats.

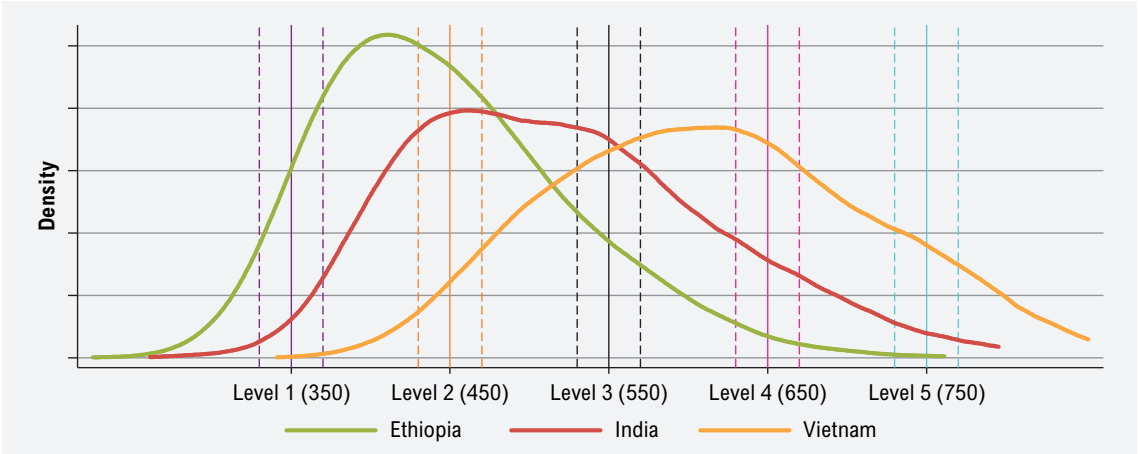
Source: James and Rossiter 2018.

21 Peru is not included in this cross-country comparison as it followed a different research design with only one measurement, focusing on inequality of educational opportunities. The assessments cannot be compared on the same scale.

22 Although this is the modal age in each country, because school systems permit late entry, or repetition of grades (and in some cases early entry and grades to be skipped), some children were older (or younger).

Each benchmark is derived from a set of items that 'anchored' at a point on the cross-country scale, with competency statements constructed based on information held about each item (e.g. its content domain, cognitive domain, etc.). Figure 20 plots the distribution of students in each country in relation to these anchor points and shows the broad disparities in achieving something approximating 'basic skills' both within and across the three countries. The horizontal axis shows scaled scores in mathematics at the end of the school year, and the vertical axis shows the proportion of students found at each point.

Figure 20. *Distribution of students and achievement benchmarks on the 2016-17 school survey common scale for mathematics*



Source: James and Rossiter 2018.

Student achievement in each country tends to be concentrated at particular points of the cross-country distribution, with most students in Ethiopia found between Levels 1 and 2, and most students in India found between Levels 2 and 3. In Vietnam, most students fall between Levels 3 and 4, and 86 per cent of the children achieving Level 5 or above are from the Vietnam sample.

In estimating, from this exercise, a share of children that has acquired basic skills, we might take Level 2 as a lower bound, or Level 3 as an upper bound of basic skills attainment (being mindful of the fact that there is no strict definition of 'basic skills', neither have we been able to assess every content domain or competency which would contribute to 'basic mathematics skills'). If we do, then more than 55 per cent of children in our Ethiopia sample were at Level 2 or below and 90 per cent at Level 3 or below. These leave very small proportions (maybe 1 in 10 children) that are estimated to have acquired basic skills in mathematics by age 14/15.

Similarly, in India around 25 per cent of children in our sample were at Level 2 or below, and 65 per cent at Level 3 or below. Perhaps 1 in 3 children in this sample has acquired basic skills in mathematics – and this is by the time they have reached the penultimate year of lower secondary school. In comparison, only 4 per cent of children in the Vietnam sample were at Level 2 or below and only around 25 per cent at Level 3 or below. The vast majority had exceeded an estimate of basic skills in mathematics and could draw on this as a foundation for further education and training.

The differences in 'basic skills' between countries, presented here, represent an entrenchment of the gaps in the education foundations of numeracy and literacy observed in Young Lives' core sample at ages 5, 8 and 12. Vietnam's focus on assuring minimum achievement standards for all pupils in early grades translates, logically, into opportunities to reach higher-order skills at this stage. On the other hand, low-learning levels that have been 'normalised'

in Ethiopia and India, including in large shares that had not achieved basic literacy by ages 8 and 12, leave large shares without basic skills by the time they complete primary and junior secondary school. They are also likely to lack the social foundation required for full participation in society, let alone the educational foundation for further education or entry into the skilled labour market.

It may be tempting to divert resources from the development of foundational skills into the technological skills, higher-order cognitive skills, and socio-emotional skills needed in the 21st century, which seem more novel and exciting (World Bank 2018). However, the longitudinal picture of skills formation from age 5 through to age 15, presented in this section, supports the argument that skills (basic or otherwise) beget skills and that higher-order cognitive and related skills are complements to foundational skills, not substitutes for them. They can only be built on a solid foundation. The World Development Report argues that 'higher-order cognitive skills involve consuming information using literacy and numeracy skills and combining it in new ways. Innovations in developing 21st-century skills are much needed, but these skills work best in conjunction with strong foundational abilities' (World Bank 2018: 166).

5. Leveraging private finance, with equity

One of the key questions that arises from earlier sections is about how sufficient resources can be sourced and effectively managed to deliver the goal of 'basic skills for all'. Section 1.3 introduced the global challenge to increase resources from US$1.2 trillion to the US$3 trillion estimated to be required by 2030 (Education Commission 2017). In this section we consider different models for financing and managing education in LMICs, and specifically the role of the private sector, drawing on the diverse and changing experiences of countries within Young Lives research, as these impact on the quality of schools and children's learning of basic skills. We illustrate questions about the effectiveness of different models for delivering education using Young Lives school survey data (introduced in Section 4). This includes a discussion of the extent to which progress in children's learning can be attributed to the quality of schooling they receive, as estimated by school 'value added' (see Box 4).

Box 4. 'Value-added' analysis in studies of school 'effectiveness'

School effectiveness research relies on data linking student learning outcomes to school, teacher and student background variables, enabling an assessment of institutional quality, and of the factors that contribute to this. Although increasingly common in OECD countries, school effectiveness research is rare in the countries in which Young Lives works. It relies on observational data and is distinct from experiments, which seek to alter an approach and evaluate the impact of that change.

Student learning outcomes are the basis of most school effectiveness research and are estimated through scores on assessments, (in primary grades, most often using tests of basic skills including literacy and numeracy). These scores are often assumed to be valid indicators of the 'quality' or 'effectiveness' of schools and teachers. However, conclusions that can be drawn about school quality from such data are limited for three reasons: (i) non-school factors (such as home economic circumstances) play an important role in determining levels of performance; (ii) cross-sectional data do not provide information on how much *progress* has been made; and (iii) in settings where there is substantial 'school choice', school intakes vary considerably in both observable and unobservable ways, including in terms of motivations of students, factors over which schools have only limited responsibility or control.

'Value-added' measures attempt to address some of the difficulties in assessing school quality. These are based on student progress, that is, changes in levels of performance for the student body sampled in each school. They focus on 'the *relative* progress of students in a school over a particular period of time in comparison to students in other schools' (Scheerens et al. 2003: 303; italics in original).

The approach intends to adjust for differences in student outcomes which are outside the control of the school, based on the assumption that a student's initial test score acts as a proxy for all observed and unobserved past inputs (Perry 2016; Rivkin et al. 2005). By controlling for differences between school intakes, such as the prior attainment of students and their backgrounds, these measures are designed to compare students in a 'like-for-like' way, so that any remaining differences in outcomes can be attributed to the school or to school-level factors, which can include teacher and peer-group effects (Perry 2016).

Young Lives school effectiveness surveys in Ethiopia, India and Vietnam are well-suited to this type of value-added analysis, with repeated measures of student achievement captured at the beginning and end of one academic year (the 2016-17 school survey in Peru had only one measurement and focused on inequality of educational opportunities). Major policy issues can be informed by this research design, including the estimated effectiveness of different governance and/or management approaches, such as those differences that exist between public and private schools.

Source: Rolleston and Moore 2018.

5.1. Changing roles for public and private sector in school finance and management

Our starting point is the growing international awareness that countries whose education systems fail to capture and deploy all available resources may fail to deliver basic skills for all. What is more, when education systems 'under-provide', it is often the most disadvantaged who are under-served or excluded.

Demand for education is strong and often rising in LMICs, reflecting what are often high aspirations alongside rising incomes; while placing strain on often poorly resourced public education systems. Young Lives research provides evidence of high and rising aspirations both for education and occupations across all its study countries (Guerrero et al. 2016), not unexpectedly, when set against a backdrop of globalisation and technological change. For example, in Ethiopia at the age of 15, 78 per cent of boys and 70 per cent of girls aspired to attend higher education (Tafere 2017), proportions which were similar to those of parents when asked about aspirations for their children. Moreover, Young Lives findings suggest that high educational aspirations are strongly predictive of later educational attainment, both in terms of years of schooling and cognitive achievement (Favara 2017).

Across all four Young Lives countries, government (public) schools have traditionally dominated delivery of education, especially for the poorest and most disadvantaged communities, albeit with varied progress towards ensuring basic skills for all. But Young Lives research since the millennium offers powerful case studies of the ways in which education systems have been growing and changing, including the increasing role of private finance, with consequences for quality and equity (for example, Singh 2015; Singh and Bangay 2014; Alcázar and Marquina 2015; Alarcón and Martínez 2015). Especially in contexts of rising incomes, private finance can represent an important potential source of additional funds for education, and there is strong evidence to suggest that education is among households' top spending priorities (Singh and Bangay 2014; Himaz 2009), whether in the form of private schooling, supplementary tutoring or spending on educational materials.

Important debates surround the effectiveness of delivery mechanisms designed to involve the private sector in basic education (such as various forms of public-private partnerships – see Chaudry and Uboweja 2014). Equally, heated debates surround the notions of 'market', 'choice' and 'competition' in education, and perhaps even more so the role of the 'profit motive'. To the extent, however, that private resources do not fully 'crowd-out' public investments and that they therefore expand the total envelope of funding available, the question for education policymakers in LMICs (as elsewhere) is not whether to facilitate private investments in education, but *how to do so efficiently and equitably in ways that can deliver the right to basic skills for all.*

Young Lives provides contrasting country case studies of the extent and impact of private financing of basic education. In India and Peru, inequality is high by international standards, both in educational terms and in terms of incomes (especially Peru, see Table 4); private schooling is widespread and often sits alongside and in competition with government schools, with rapid growth in low fee and largely unregulated private schools in India (Glewwe et al. 2014; Crouch and Rolleston 2017). Socialist Vietnam presents a *prima facie* contrast. Households in Vietnam make very significant contributions to education both through the public system and to supplement it through paid-for extra classes (Le and Nguyen 2016).

Recent policy reforms in India and Vietnam illustrate quite different approaches to bringing together public and private sectors in education – through public financing of private schools and private financing of public schools (Duong 2015; Le and Baulch 2012; Singh and Bangay 2014). While Vietnam's approach has perhaps been more successful in practice, both approaches in principle offer the potential to combine the benefits of public and private provision. The rest of this section elaborates the opportunities and challenges for 'leveraging' private finance, and how that interacts with governance and accountability in schools and education systems, for India and Vietnam.

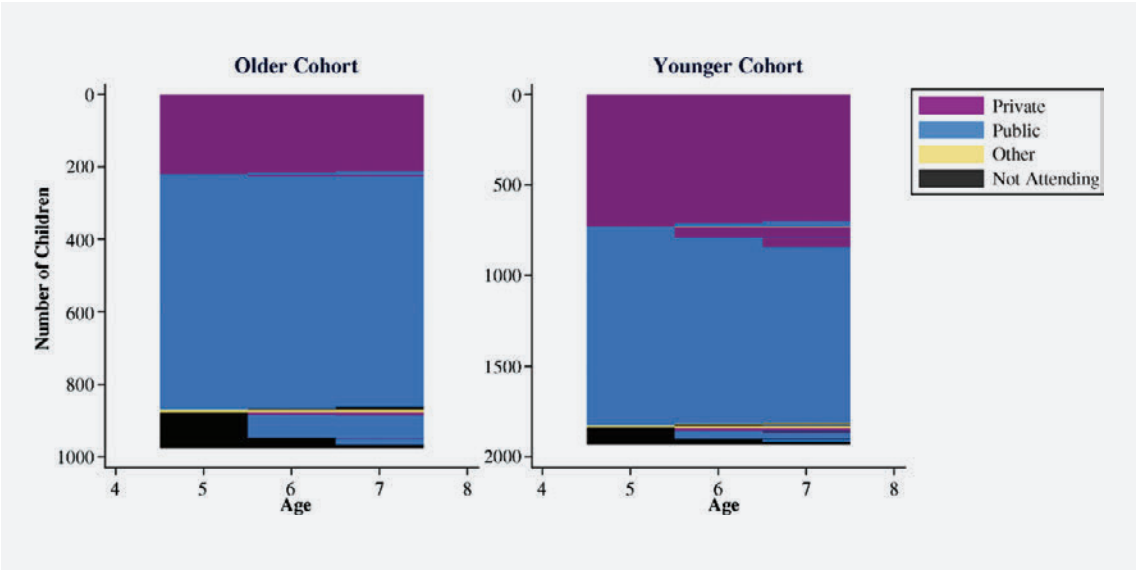
5.2. In India the growth in private schooling offers some gains but also widens gaps

In India, enrolment in what are often referred to as 'low-fee' private schools has been steadily increasing at both primary and secondary levels, with increasing numbers of households (including relatively poor households) seeking out private alternatives which are often highly variable in cost and quality (Singh and Bangay 2014). In United Andhra Pradesh, 43 per cent of children now attend a private primary or lower secondary school (NUEPA 2016), meaning that discussions of private schooling no longer relate just to an elite sub-section of the population but to a large proportion of children attending school. For example, Revanth is a Young Lives child in India; for his family to pay for even low-cost private schooling is a significant cost, but one they are willing to bear as an investment in their son's future.

> "We are ready to spend; we want him to study well that is why we sent him there … There is no one [to help with payments]. Our parents don't give. They gave all of us when we were constructing our houses, we don't ask anyone. We take as debts. When we get grains, onions come etc. then we can go and pay … He should not do agriculture, that is why we are spending so much for his education. That means we will make him study, come what may!" (Parents, quoted in Woodhead et al. 2009: 67)

Young Lives longitudinal data reveal how this has changed over time, with the number enrolled in private schooling at age 7-8 almost doubling between the Older Cohort (at 24 per cent) and the Younger Cohort (at 44 per cent); a dramatic change over a period of just six years (Woodhead et al. 2013). Figure 21 illustrates the impact of these trends for individual trajectories through school in a 'sequence index plot', which records school type attended for each child, every year. It reveals relative stability in the type of school that Older Cohort children attended during their early primary school years. By contrast, data for the Younger Cohort show higher enrolments in private schools at all ages, along with shifts in household appetite for the private sector, with 6 per cent switching from public to private provision (and some in the other direction) during their primary school years.

Figure 21. *Changing school trajectories for the Older and Younger Cohorts in India*



Source: Woodhead et al. 2013.

When public education is perceived to be of poor quality, it is the more advantaged households who are first able to seek alternatives and switch. With increased switching came increasingly complex school trajectories for children, represented by 1 in 6 of the Younger Cohort children having changed schools during the first three years of attendance. Both school choice and switching schools were becoming major trends within Indian education at the time this research was carried out, with families making choices based on their assessment of the quality of teaching, the reliability of teachers' attendance, their children's progress, and the attractiveness of private schools that claim to offer English medium instruction (James and Woodhead 2014). As one mother from an urban community in India explained, the process of regular switching between schools had led to her daughter attending five different schools by her fifth year of schooling:

> "She studied UKG, LKG, and nursery in Sribharathi and 1st and 2nd class in Siddhartha. There the bathrooms were not good and ... we changed the school to Geetham Concept School for 3rd class. But it was far from here and it was difficult to go by auto daily. So again we changed to Vijayawada Ravindragharati for her 4th class. There were no BEd trained teachers and spoken English … She was not at all able to speak in English. We paid the fee correctly but were not at all satisfied. So we have changed to Bhashayam now." (James and Woodhead 2014: 15-16).

Such choices often involve switching from public to private or between private schools, in parents' quest for 'best value' (see Box 5). School choice sometimes also included switching between public schools and from private to public (Woodhead et al. 2013). Indeed, public schools in the more recent Young Lives school surveys have been found to mirror certain private school practices – most obviously in introducing English medium instruction to stem the tide of migration away from the public sector (Moore et al. 2017). The issue of whether schooling choices reflect 'value for money' in terms of learning is somewhat contested (James and Woodhead 2014). Families may value in different ways a variety of indicators and signals of school quality. Many of these indicators are difficult to measure, however, or even if measured are not shared or are difficult to interpret.

Box 5. Strategic choices for children's education

Dilshad lives in Polur, a Muslim community in the state capital Hyderabad. She is the only daughter and the youngest in the family, with seven older brothers who have all finished school. Her family is one of the poorest in the Young Lives sample. They live in a one room rented house with few utilities. Dilshad's father is a rickshaw puller and her mother works as a maid. Neither of her parents had formal education, but they are keen to support their child's education.

Dilshad's family relies on her older brothers to cover her school fees. When Dilshad's mother was asked if they were comfortable paying the school fees, she responded:

> "See, she has four brothers who are working. If each pays some money, it will enable her to get good education. Afterwards, we will anyway shift her to the government school."

Dilshad's family has found a way of making all their children complete their education cycle despite their financial hardships. They believe that attending the best possible school in the first years is crucial to develop the foundations needed for the rest of their children's education. For this reason, they made all their children, including Dilshad, attend private school until Grade 5. However, as the fees tend to increase as the child progresses in school, they transfer their children to government school for later stages of education.

> "Yes, it will increase. Anyway, I will make her study in that school till Grade 5 after which I will put her in the government school … Because I followed the same procedure for my other children also. In the government school, they will give the books and other things supplied by the government. This way my children were able to study till 10th standard."

Source: Caregiver's interview, Polur, 2008. Adapted from Streuli et al. 2011: 30.

Findings from Young Lives, in common with several other studies, demonstrate a modest positive 'private school effect' on learning outcomes (Singh and Sarkar 2015), although with some variation across subjects and at different grade levels (Singh 2015). More significant, however, is the apparent efficiency advantage of low-fee private schools, given their much lower recurrent costs (often linked to lower teacher salaries) when compared to government schools. The mechanisms by which private operators are able to provide this efficiency advantage are hotly contested but are certainly woven into the political economy of education reform, governance and relationships of accountability in India's education system.[23] These relationships are also a key determinant of school choice among parents, as illustrated by mothers in India:

> "For private schools, we pay money, we can question them [the teachers] if children come home early or if they don't study well, if they don't teach properly, we won't send the children to their school." (Mother, India, quoted in Morrow and Wilson 2014: 15)

> "But that is a Government school. In a private school, if they do not teach well … we can ask them strongly about it. But that is not the case with the Government schools. They might us ask us something in turn … but I am an illiterate … so we just leave it like that. But here because we pay, we have the right to ask. Even if they do not teach, they earn a bad name." (Mother, India, quoted in Morrow and Wilson 2014: 15)

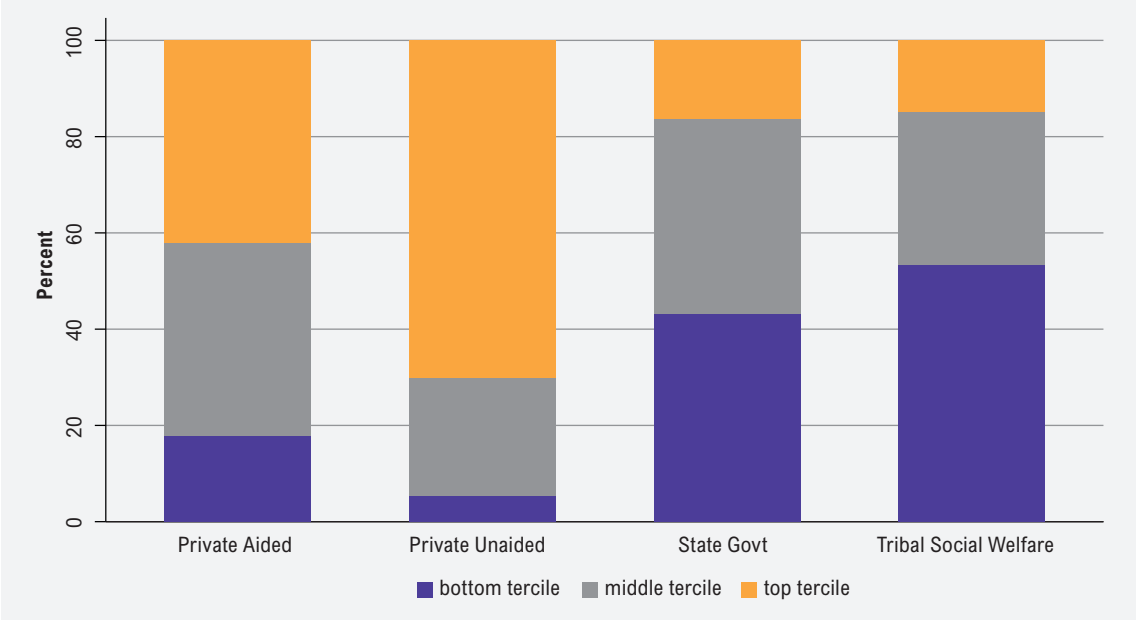
23 See, for example, Kingdon et al. 2014 and latest research under the RISE Programme at www.riseprogramme.org

Young Lives school survey data from 2016-17 show that, by age 14, children in private schools achieve considerably higher maths test scores than those attending state government schools. Much of this difference is dictated by the difference in home background between children that attend public and private schools. The school effectiveness design of the Young Lives school surveys allows these differences to be evaluated in terms of what each school is adding, over and above the differences in intake. Assessments of mathematics and literacy at the beginning and end of the school year (see Azubuike et al. 2017) enable a review of learning progress, which can be converted into a 'value-added' estimate – a measure of each school's contribution to student learning (see Box 4).

Over the course of one school year, the gap between those attending private schools and government schools continues to widen, and private schools, particularly those with higher fees, appear to add considerably 'more value' than other types of school management (Rolleston and Moore 2018). As a result of both an initially higher starting point *and* the greater 'value-added', by the end of Grade 9 those children in private schools are, on average, more than one standard deviation ahead of those in state government schools: the equivalent of around three years of schooling (Moore et al. 2017).

While the increasing prevalence of low-fee private schools means private school enrolment has increased for children from every background (Singh and Bangay 2014), analysis in Young Lives sites reveals that girls, those with older siblings, and those from poorer households or disadvantaged groups are much less likely to attend a private school (James and Woodhead 2014; Woodhead et al. 2013; Singh and Bangay 2014). As a result, children in these groups are found to be 'sorted' into schools which are on the whole less effective (Figure 22), leading to deepening inequalities over time.

Figure 22. *Children are 'sorted' into different school management types by their background characteristics, including their household wealth tercile*



Source: Young Lives school survey data, 2016-17. Household wealth index is estimated using data on assets and household consumer durables reported by children; this data is used to construct a composite index (see Moore et al. 2017 for more details).
Notes: State Government schools are owned, managed and run by the state government and are wholly state funded; Private Aided schools are managed by a trust, private organisation or individual, and are financed through a grant from the local, state or central government; some also charge tuition fees. Private Aided schools are managed by a trust, private organisation or individual, and do not receive any regular financing from local, state or government bodies but generate income from tuition fees. Tribal Social Welfare schools provide residential schooling for children from tribal or minority groups; they are centrally funded but are managed by the state government.

In the absence of dramatic improvements in quality in government schools, reforms to ensure the benefits of private finance in education are shared widely are essential to the goal of developing basic skills for all. Legislation to ensure that private schools in India enrol less advantaged children (the Right to Education (RTE) Act 2009), has been designed to address these issues.

The RTE approach centres on requiring private schools to admit less advantaged pupils without payment of fees but with some government subsidy, which may be termed 'socialising' private schools – such that the benefit of private investments in education are extended to pupils whose families do not have the means to pay for them. Recalling that many private schools in India have operating costs that are lower than public schools, this approach in principle offers not only to improve equity and reduce inequality, but might also be expected to increase the efficiency of public spending in education. However, for a complex range of reasons, many linked to implementation, the RTE policy has had at best very mixed results so far (Kingdon 2018).

5.3. In Vietnam channelling private finance into public schooling may offer more accountability with greater equity

Vietnam offers a strongly contrasting example to India. Whereas one emerging priority for India's *laissez faire* management of schooling has been to encourage 'socialisation' of private schools, the policy approach in Vietnam is in some respects in the very opposite direction: cost-sharing in public schools. Although schooling in Vietnam is overwhelmingly public, responsibility for financing education is shared between state and communities, according to the somewhat controversial principle of 'socialisation' (xã hội hóa) (Duong 2015). This is, for some, a euphemism for 'privatisation'.

Households make contributions to public schools under a long list of categories, providing important additional resources (Le and Baulch 2012). While socialisation amounts to 'cost-sharing', what is crucial is that costs are shared, in principle, based on ability to pay and it is this requirement which distinguishes socialisation from privatisation. Poorer districts and populations (especially ethnic minorities and those in isolated areas) are often exempt from certain contributions (for example, for full-day schooling charges; see Rolleston et al. 2013), effectively receiving subsidy from wealthier areas either within the province or from the central government.

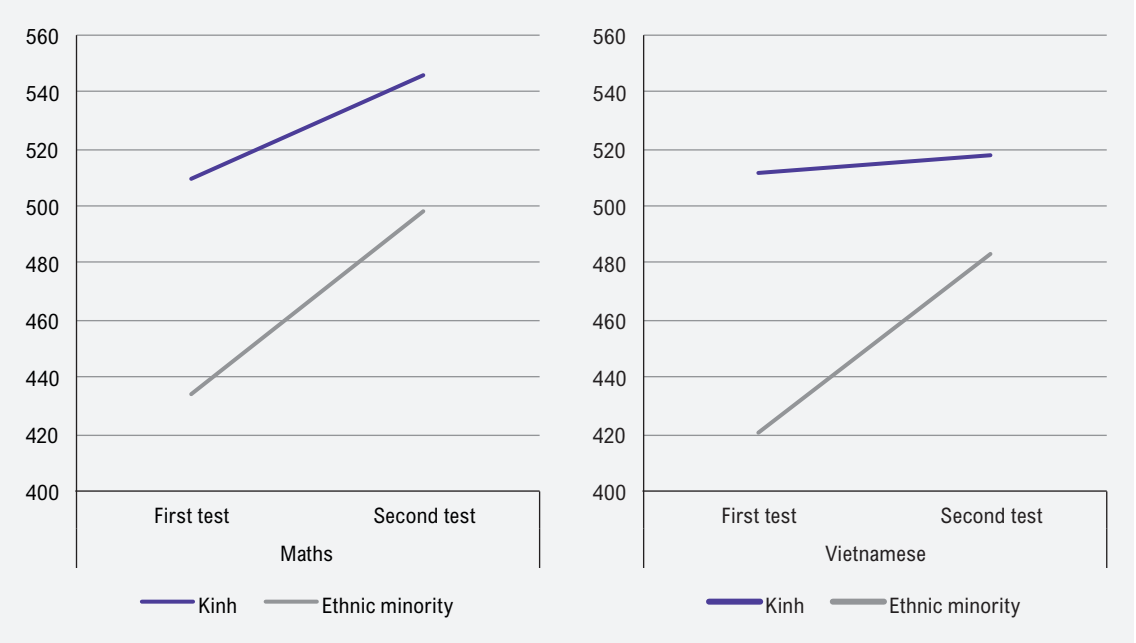
In addition to exemptions, depending on the socio-economic status of an ethnic-minority pupil's family, she or he has been eligible to receive additional financial support under the Primary Education for Disadvantaged Children programme (Huyen 2011). For example, a child attending a semi-boarding school who lived in a relatively disadvantaged 'Programme 135' village would receive VND 140,000 per month (approximately £5) during term time, which served as an incentive for families to send their children to school (Huyen 2009). Although imperfect in their implementation (Huyen 2011), an important advantage of the combined Vietnamese approaches is that public schools continue to serve the vast majority of young people, of all incomes and abilities, with additional private funding channelled into rather than away from the system. This has the potential to improve quality without compromising equity.

Young Lives' school survey data align with those from the household survey in offering encouraging evidence of high rates of learning progress in school among ethnic-minority students (Figure 23).[24] Over the course of Grade 5, students from ethnic minorities made twice as much learning gain across maths and Vietnamese reading assessments as their Kinh

24 While the sample of minorities is broadly representative of Grade 5 pupils in the selected sites, results are not more widely generalisable in relation to the differences between Kinh and ethnic minorities.

(ethnic majority) counterparts (Rolleston et al. 2013). This increased substantially the share of students on-track to achieve basic skills, and at the same time reduced overall gaps between student groups according to ethnicity.

Figure 23. *Learning achievement and progress, by ethnicity (Young Lives school survey, Vietnam, Grade 5)*



Source: Adapted from Rolleston et al. 2013.

Redistributive measures within socialisation policies allow the state to mobilise resources from the public and use state funds to target government allocations so that 'minimum quality standards' are reached everywhere. The more equitable funding that results from this process allows for the relatively strong progress among ethnic minorities and low-achievers more generally. As a result, Vietnam has been successful in reducing the relationship between pupil background, school and teacher quality in the period of basic skills development, such that students from any background can benefit from a school that 'adds much value' to their learning progress (Rolleston, James and Le 2013).

Evidence for Vietnam points to rapid early progress for ethnic-minority students but when examining trends over time, the ability of ethnic minority students to 'catch up' is not realised in the first year of upper secondary school. The gap between ethnic minority and majority students in fact widens slightly over the course of Grade 10 (Iyer and Rolleston 2018) and this is likely to affect student performance in the high-stakes national examination at the end of Grade 12 and therefore prospects for further education, training and employment. Although Grade 10 is the post-basic skills phase of education in Vietnam, divergence between groups may reflect the increasing uptake of extra classes and other paid/supplementary support outside school, which can run counter to progressive core policies. For example, at ages 8 and 12, nearly two thirds of the Younger Cohort took extra classes, higher than the rate of slightly over 50 per cent for the Older Cohort children seven years previously (Le and Nguyen, 2016).

Other studies of the socialisation of Vietnam's school system (for example Ta and Duong 2013; London 2011) report somewhat mixed findings, particularly in terms of the impact of socialisation on student learning. One difficulty in assessing the results concerns the concurrent trends of increased government spending in (and targeting of) disadvantaged areas and increased parental spending in more advantaged areas (see Carr-Hill 2011). Using

Young Lives data at primary school level, Duong (2015) finds that the fee for 'full day schooling' was one of the largest charges levied by schools as part of socialisation, with payment for full day schooling and extra classes common among families even in remote, rural areas. However, this study finds that, while paying for full day schooling was positively associated with increased student effort, there was no significant relationship between this and improved academic performance.

Analysis of Young Lives household data by Ko and Xing (2009) and Tran et al. (2005) shows comparable results with regards to extra classes, which are also funded by fees levied by schools as part of socialisation. They identify that paying for these classes was related with higher child subjective well-being but had no association with academic performance once other factors were controlled for. Le and Baulch's (2012) study using data from the Older and Younger Cohorts is similarly inconclusive with regards to the impact of extra classes on learning attainment, suggesting that 'if we focus on cognitive achievement only, extra classes are a wasteful expenditure' (Le and Baulch 2012: 15).

The findings from analysis of Young Lives data therefore appear to suggest that increased direct spending by households need not lead to better learning outcomes in the Vietnamese education system, though this is one of the highest performing basic education systems globally. This contrasts strongly with findings from India, where there appears to be a much clearer association between spending more and achieving better learning outcomes, but within an overall low-performing system. With respect to basic education (Grades 1-9 in Vietnam) and to basic skills, Vietnam represents not only a relatively equal context but also one in which a high proportion of disadvantaged pupils perform well in school (an *equalising* context). In fact, based on PISA results at age 15 (in 2012 and 2015), the only peer of Vietnam with respect to this indicator (OECD's 'resilience' measure) is China (OECD 2016b).

While socialisation in Vietnam ensures that public schools remain publicly managed and operated, fees paid by parents for 'extras' arguably bring an additional form of accountability to parents. Such increased accountability may form part of the explanation for the 'private school premium' in certain other contexts, such as India. More generally, Young Lives evidence summarised in this report provides a positive picture of the vast majority of children achieving basic skills and more, within the apparently 'equalising' Vietnamese system (see Rolleston and James 2015; Rolleston et al. 2013).

While commonly cited explanations for this relatively equalising system focus on 'common minimum standards and expectations' (see Rolleston and Krutikova 2014), leveraging private finance (through socialisation) plays a key role in ensuring that funds are available to support schools to reach minimum standards in less advantaged areas. The principle of socialisation allows schools in urban and more advantaged areas to raise funds to improve education in line with rising parental expectations without competing with the need to focus public funds on more disadvantaged areas where private sources of funding are much scarcer. By contrast, the increasing bifurcation of the education system in India, if indeed it does lead to improvements in learning outcomes for those that attend, appears to do so at the cost of rising inequality.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6. Looking ahead: from basic skills to digital and transferable skills

Earlier sections have summarised evidence from Young Lives comparative longitudinal research and school surveys, with a core focus on how far the 12,000 children growing up within diverse communities across the four study countries achieve at least the basic skills that are widely regarded as every child's right. When Young Lives was initiated international priorities were shaped by the principles of 'Education for All', by the Millennium Development Goals and more recently the Sustainable Development Goals.

These priorities were focused on: (i) ensuring access to education for all – from early childhood through to early adulthood; and (ii) reducing inequalities in the quality of teaching and learning, especially those inequalities related to poverty, geography, ethnicity and gender. These are still high priorities but one of the major messages of this report is about the failure of many unequal school systems to deliver quality learning, especially for the poorest and most marginalised communities, but also for relatively more privileged children in some contexts. The clear implication is that urgent reforms that may be needed to transform school systems, in the interests of children, families and society.

We have emphasised that every child has a right to acquire at least basic skills as the foundation for citizenship, and that education systems must be enabled to deliver on that right. A second major message of the report is about education system change and variability, both between and within the four countries, affecting children's experience of learning even in the few years that separate the two Young Lives age cohorts. Economic change and policy reforms can open improved prospects for children growing up in poverty, while at the same time long-standing inequalities may be reinforced, or new inequalities opened.

In this final section we reflect more widely on the challenges of delivering on a right to basic skills for all, now and into the future. First, we offer a summary of some lessons from Young Lives' extensive use of measurement tools to assess basic skills at different ages, at a time when assessing children's skills and evaluating school effectiveness is a growing priority. Second, we provide a brief review of Young Lives evidence of the ways in which a 21st century emphasis on digital and transferable skills are shaping individual children's lives, the curriculum and pedagogies within school systems.

6.1. New priorities in assessment for basic skills development

One of the consequences of realigning education priorities towards ensuring children achieve at least basic skills is that it shifts attention onto questions about how to measure children's achievement and how best to monitor progress towards the achievement of basic skills. The 2018 World Development Report argues that achieving learning for all will require complementary strategies, two of which are 'assess learning to make it a serious goal' and 'act on evidence to make schools work for learning' (World Bank 2018: xii). In delivering on a right to basic skills, assessment is needed to measure what children know and can do, in relation to an agreed minimum expectation of basic skills and appropriate staging posts along the way.

The design of Young Lives education research has required assessing learning across diverse contexts, languages and age groups, and has identified many challenges surrounding effective assessment at all levels (see, for example, Iyer and Azubuike 2017; Leon and Singh 2017).

Measurement tools and technologies underpin the data, statistics and graphs throughout this report, from official statistics, and national and cross-national surveys including Young Lives household and school level data. Much has been learned from the process of assessment development and administration. The question for this section is more specific: how to do assessment *for* the development of basic skills? A few considerations stand out.

Carrying out assessment of children's learning is not an end in itself. Introducing too much assessment too early can be ineffective if a system isn't organised to use that information. 'Evidence' of achievement or learning, in a system that is not prepared to use that information will not lead to 'evidence-based' decision-making. Similarly, assessment information that is poorly targeted can lead to incorrect conclusions; for example, the interpretation of achievement differences that are driven by schools and those that are driven by student backgrounds in the public–private school debates.

Research is a scientific act, while policy-making – as its name implies – is a political act. Reforming education systems that can work to deliver basic skills for all first requires political consensus around which basic skills are the highest educational priority and by when these should be achieved. Thereafter, information collected on progress towards basic skills can form an important part of the accountability relationships that exist within the education system (World Bank 2018). For example, at the present time, UNESCO continues to lead a global effort towards international consensus on proficiency indicators in reading and mathematics for each educational level.

While the rationale for enhancing assessment and monitoring systems is clear enough, it is also important to acknowledge the risks, which have been hotly debated over many decades. Testing children's learning is not a neutral process, nor always benign in its consequences. Specific areas of curriculum or skills singled out for assessment, translated into items in tests of reading, numeracy and so on can all too often acquire a reified status in school systems, in the priorities of education officials and school inspectors, in the training of teachers and the priorities of lesson planning. Berliner (2011) describes 'high stakes testing' resulting in curriculum narrowing, whereby teaching becomes focused on the specific domains covered by tests or other assessments, putting pressure on students who become aware of the significance that attaches to test scores.[25] This inevitably diminishes the chances of students being introduced to more exploratory, open-ended and creative aspects of learning.

There are multiple end-users of assessment data; each can be accountable for progress towards basic skills, which can be achieved in several ways. More often than not, regional or national officials – along with experts from international organisations – are the main contributors to education policies and the imagined end-users of assessment information, from regional monitoring through to global statistics such as those referred to in this report. But assessment does not necessarily have to be 'large scale', 'top-down' and 'complex' in its design. For instance, 'decentralised', often formative, assessment can generate information on learning that guides teachers and teacher supervisors to make local adjustments and adaptations for each child (UNESCO 2015). Such localised assessments may be less useful for generating data with direct comparability in learning outcomes, but this is not necessarily their purpose – particularly if the assessment is geared to drive movement towards basic skills (Wagner and Castillo 2014). These locally initiated and locally sensitive approaches can supplement – or in some cases supersede – larger scale assessment exercises.

25 See Winter et al. forthcoming 2018, for a full discussion of pressures and responsibilities in this adolescent phase.

A 'rush to rigour' is unlikely to be necessary in developing assessment for basic skills. Each assessment should be 'calibrated relative to specific policy goals, timeliness, and cost' (Wagner 2011: 12). In the case of assuring basic skills acquisition among all children, smaller, near-term and cheaper assessments, high in local impact, can be prioritised to improve instruction. Community-led approaches, such as UWEZO, ASER and others under the 'PAL Network' have been shown to use technically minimal assessments to generate relevant and directly interpretable information on the achievement of foundation and basic skills (PAL Network 2018). These may then be used locally, regionally or nationally to motivate improvements, including targeting of resources and attention for delivering on the right to basic skills.

Moreover, in conducting research with a mandate to be useful for policy in target countries, it has been learned through Young Lives education research that less 'relative' and more 'criterion-referenced' measurement may be the strongest support of progress towards achieving basic skills for all. Although necessary for certain applications (such as school effectiveness research), norm-referenced assessments are not always that helpful in providing data in relation to expectations of basic skills. In assessing for basic skills, it can be far more efficient to assess directly against the skills required at each stage and avoid the steps required to translate finely-graded scores, on some arbitrary scale, into benchmarks of proficiency.

A major benefit of decentralised assessment within schools – in line with arguments about benefits of decentralisation and school-autonomy more generally – is strengthened contextual relevance and potentially greater accountability to local communities. More than that, the information chain from assessment to action is shortened – the individuals that need to know (i.e. the teachers) do not have to wait for information. For example, in Vietnam, pupils' progress towards reaching grade-specific minimum learning standards is prioritised and monitored using continuous formative assessment, with national and international assessments taking secondary roles. Young Lives research at primary school level in Vietnam asked teachers to report on pupils' attainment. These estimates show a similar pattern to the Young Lives assessment results for the same children, indicating that teachers have good knowledge of their pupils' levels of attainment and progress and can use this to adjust their teaching practices (Rolleston, James and Le 2013).

6.2. New technologies and transferable, 21st century skills

In this last section it is important to re-emphasise that the concept and definition of basic skills is not fixed, nor are the indicators appropriate to assess children's progress towards the acquisition of basic skills. Country priorities shift in the wake of cultural change or a revised political outlook. The aspirations of children and families are also far from static. The two decades during which Young Lives children have been growing up has been a period of rapid change in response to new communications technologies, shaping individual children's lives as well as pedagogies within school systems. Here we briefly look at Young Lives evidence on: (i) the impact of digital technologies on basic skills; and (ii) the transformation of educational goals as young people mature, towards what are sometimes called transferable and/or 21st century skills.

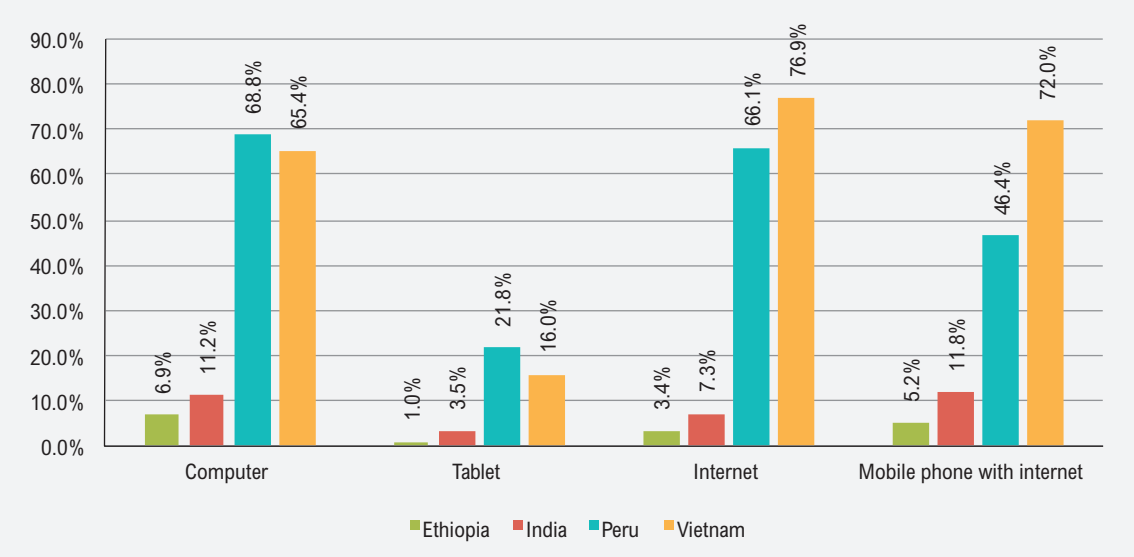
An UNESCO report recently concluded that: 'Digital technologies now underpin effective participation in key areas of life and work. In addition to technology access, the skills and competencies needed to make use of digital technology and benefit from its growing power and functionality have never been more essential' (UNESCO 2017b: 4). Much research to date

has been focused on more economically advantaged and technologically advanced countries, with some recognition of the repercussions of the 'digital divide' for global inequalities (World Economic Forum 2016).

Young Lives has been able to contribute to knowledge about the extent and impact of digital technologies within much broader global contexts, including the impact on education. As part of Round 5 (when the Younger Cohort were 15 years old and the Older Cohort 22 years old), Young Lives included a digital skills survey covering digital access, use of computers and other digital technologies, frequency of use and age of first use, and computer skills, including online skills (Cueto, Felipe and León 2018).

Figure 24 summarises access to digital devices among Younger Cohort children. Here, as in other measures of digital device use, patterns across the four countries are broadly consistent with the trends observed in earlier sections of this report, although we do not assume the quality of basic skills teaching is a cause of greater digital access, nor indeed vice versa. What is clear is that 15 year olds in Peru and Vietnam showed higher levels of access, more frequent use, and earlier age of engagement with digital devices than those in Ethiopia and India. Gender (favouring males, particularly in India) was also predictive of access.

Figure 24. *Access to digital devices and internet by country – Younger Cohort (%)*



Source: Cueto, Felipe and León 2018.
Note: Figure reports percentage of children saying they had used each of the devices 'many times in their lives'.

Comparisons between the two cohorts also highlighted how rapidly children's lives are being transformed. For example, age of first use was much lower for the Younger Cohort, compared to the Older Cohort; with children in Peru and Vietnam again showing an advantage, as they started using the devices earlier in life (Cueto, Felipe and León 2018). Young Lives longitudinal design means it is also possible to link these patterns of access to technology (at Round 5) to the household wealth index for each child when they were just 1 year old (at Round 1). Cueto, Felipe and León (2018) report that household poverty during infancy has a significant association with digital access 14 years later, confirming again the enduring patterns of inequality in all countries.

These findings are mainly about access to modern technologies, but the digital skills survey also provided evidence on the children's mastery of computer use. As for the research on basic skills, the evidence on modern technologies suggests that increased access is not

necessarily linked to improved quality of learning within schools. While mobile devices serve multiple social and communication functions, many young people in the digital survey (across all countries) reported that they do not feel confident performing what could be considered basic skills in use of PCs or other devices increasingly considered a key learning tool in classrooms and more widely. Young Lives qualitative research also highlights these issues from parents' perspectives. In Lima, Peru, one mother of an Older Cohort child shared her concern that conventional teaching of basic skills is being eroded by the internet:

> "Now there aren't good teachers … because now everything is internet. Before there were better teachers … The teachers that used to teach us before, made us do homework that we had to do with our own hands" (Boyden et al. forthcoming 2018)

In Vietnam, worries were expressed that children were being distracted from learning by new digital opportunities:

> "… students drop out of lessons at the school to play games on line in the internet cafes nearby the school … I see during class time, but there are still many students, sitting in the internet café playing games. So I am afraid that my son will be in the same situation ..." (Boyden et al. forthcoming 2018)

Finally, looking beyond specific opportunities and challenges associated with new technologies, throughout childhood, educators across Young Lives countries are increasingly anticipating later stages in the life course, by looking beyond traditional 'basic skills' to so-called 'transferable skills' or '21st century skills'. In Young Lives' 2016-17 school surveys data collection was extended to include the assessment of higher-order problem-solving and critical-thinking skills. In these exercises, problem solving was defined as: 'an individual's capacity to use cognitive processes to resolve real, cross-disciplinary situations where the solution path is not immediately obvious' (Greiff et al. 2013: 74); while critical thinking uses skills such as inference and evaluation which are applied to ill-structured problems, for which there are no definitive solutions (Kuhn 1991; Thomas and Lok 2015; and for details of how these measures were developed, see Iyer and Azubuike 2017).

Emergent findings from this analysis suggest that children in India and Vietnam, at age 14-15, possess similar levels of transferable skills, with around 50 per cent of children in both countries being classed as 'emergent critical thinkers', and most children in both being classed as either 'basic' or 'competent problem solvers' (Iyer and Rolleston 2017).[26] Performance in these subjects is far more similar across the two countries than is found for the more 'academic' foundation and basic skills of literacy and mathematics achievement. This perhaps reflects the fact that transferable skills are not yet a focus of school-based education in either country, reducing the impact of variable school quality on the development of these skills. In addition, and in support of an argument that basic skills serve as a foundation for higher-order cognitive skills, in Ethiopia, where literacy is weakest, few students could demonstrate reading comprehension levels in preliminary screening questions deemed adequate to access assessments of critical thinking and problem solving. Accordingly, Ethiopia had to be removed from the study sample for this aspect of the research.

With rising domestic concerns in Vietnam that the school system places too much emphasis on rote learning of skills such as mathematics and not enough on higher order skills required for the modern workplace (World Bank 2014), Young Lives findings offer a unique insight. They

26 The transferable skills measures were also piloted in Ethiopia, but due to low levels of literacy were not included in the final assessment.

suggest that there is little evidence that Vietnamese children are merely 'rote learners', with most possessing at least basic skills in both problem-solving and critical-thinking. Yet findings also suggest that, while student performance in 21st century skills is positively associated with performance in more curriculum-based subjects such as maths and English, it is not always the same schools achieving high scores in both. Further work is needed to elaborate what it is that schools and teachers can do to support the development of these higher order skills, and whether they are something that needs to be considered in assessing what counts as 'school effectiveness' (Iyer 2017).

This final section provides only a snapshot of two topics that are of growing significance for policymakers, as much as for children and for their parents. They build on the core question of delivering on a right to basic skills, and draw on Young Lives unique comparative and longitudinal, policy focused research since 2002.

The research teams have been privileged to accompany children, families, parents, teachers, and policymakers on this journey towards a better understanding and more effective action to ensure delivery on every child's right to education, especially the basic skills that are the foundation for human development, civic engagement and well-being in modern societies.

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TRUYỆN TRANH DUNG HÌNH

Young Lives is an international study of childhood poverty following the lives of 12,000 children in Ethiopia, India (in the states of Andhra Pradesh and Telangana), Peru and Vietnam over 15 years.

Its aim is to shed light on the drivers and impacts of child poverty, and generate evidence to help policymakers design programmes that make a real difference to poor children and their families.

Young Lives

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