

Learning, Marginalization, and Improving the Quality of Education in Low-income Countries

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Second volume in the series
Learning at the Bottom of the Pyramid



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3. Teaching at the Bottom of the Pyramid

Teacher Education in Poor and Marginalized Communities

Kwame Akyeampong

Introduction

Achieving SDG4—inclusive and quality education for all—requires every child to have access to quality teachers. However, in many low-income countries (LICs) and lower-middle-income countries (LMICs) large numbers of children, especially in poor and marginalized communities, lack access to well-trained teachers (UNESCO, 2013/14). As a result, many of these disadvantaged children fail to meet the expected minimum learning outcomes for their grade, causing many to drop out of school in the early years. UNESCO Institute of Statistics (UIS), for example, estimates that six out of 10, or 617 million, children and adolescents in LICs and LMICs are not achieving minimum proficiency levels in reading and mathematics (UIS, 2017). The crisis is more acute in sub-Saharan Africa, where about 85 percent of children are not reaching minimum proficiency levels despite being in school (Luschei & Fagioli, 2016; Luschei & Carnoy, 2010; World Development Report, 2018).

However, the crisis is not simply about the inadequate number of teachers, but also about the fact that few trained teachers know how to meet the learning needs of poor and marginalized children. These

children are in school but not learning—described as the “silently excluded” (Lewin, 2011). For many of these children, the schools they have access to are so low quality that any hope of education providing a route out of poverty is unrealistic (Lewin, 2011). As Dyer (2013) points out, “the schooling available to the poorest is itself often so poor that it is likely to perpetuate cycles of deprivation as it is to interrupt them” (p. 221). Ultimately, this learning crisis points to a lack of programs that can help teachers meet the needs of children at the bottom of the learning pyramid. However, some promising research shows the possibilities of effective classroom practices and teacher education reform, some of which are discussed in this chapter.

The chapter is organized into three sections. First, it discusses the teacher training and supply crisis, outlining the factors that impact teachers’ abilities to meet the learning needs of children who are being left behind. The second section presents case studies of inclusive pedagogies that report positive impact on learning for children who have dropped out of school. The third and final section concludes with a discussion of the implications for reforms that can improve teacher education and close the learning achievement gap between advantaged and disadvantaged children.

The learning crisis and teachers: Mapping the Global South evidence and challenges

Improving access to quality education over the past two decades has not produced improvements in learning outcomes for children in poor and marginalized communities (Bashir et al., 2018). The challenge is not only about closing the learning achievement gap between disadvantaged and advantaged children, but also ensuring that the gap does not widen as they progress through their education. Studies suggest that when learning achievement gaps emerge in the early primary school grades, they continue to widen in later grades. For example, data from the National School Effectiveness Study (NSES) in South Africa found that only the top 16% of Grade 3 children are performing at an appropriate Grade 3 level, and that the learning gap between the poorest 60 percent of students and the wealthiest 20 percent of students amounts to approximately three grade levels in Grade 3, growing to four grade levels by Grade 9 (Spaull & Kotze, 2015).

Evidence also shows that the learning crisis is linked to where a child lives and attends school (UNESCO, 2013/14; Rose & Alcott, 2015). In Ethiopia, urban 8-year-olds are over five times more likely than rural 8-year-olds to be able to read sentences (Rolleston, 2014). Children from poor and marginalized communities experience higher dropout rates and poorer learning outcomes (UNESCO 2013/14). Results from the OECD's PISA for Development (PISA-D)¹ show that students attending urban schools outperform those in rural schools in reading, achieving an average performance difference of 42 score points, equivalent to more than a year of schooling. The PISA-D data also show that socioeconomically advantaged students (i.e., students from the top 25 percent) are, on average, five times more likely than disadvantaged students (those in the bottom 25 percent) to attain the minimum level of proficiency in mathematics. In fact, according to the PISA-D analysis, very few disadvantaged students in rural areas are able to achieve minimum levels of proficiency, and even fewer score among the best in their countries, with many making so little progress in learning that they risk dropping out of school (Ward, 2018).

In South Asia, the situation is similar. Based on over ten years of data from the Annual Status of Education Report (ASER)², evidence shows unacceptably low learning levels at every grade, with data from India showing that only about "half of all children enrolled in Std V can read at least at Std II level" (p. 68). Although more recent data show some improvements in lower grades, it is not enough to bring children up to expected levels. The ASER data reveal that overall progress in learning trajectories has remained flat, an indication that foundational skills in the early grades are so low this is likely to impede progress in later grades (ASER, 2013).

A longitudinal study in Andhra Pradesh, India, tracking a cohort of students over a school cycle, found that only 2.4 percent of Grade 1 students achieved the Grade 1 standard. By Grade 5, only 60 percent of these students achieved the Grade 1 level, and only 8 percent achieved the Grade 5 level. The study finds that the gap between the top-performing and bottom-performing students widens in later grades,

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- 1 PISA for Development (PISA-D) countries include Cambodia, Ecuador, Guatemala, Honduras, Panama, Paraguay, Senegal, and Zambia.
 - 2 ASER is a nationwide household survey that reaches a representative sample of children in every rural district in India.

and that most learning happens in Grades 1 and 2. The argument is that, if instruction is better aligned to learning goals in early grades, then by Grade 3, children should be expected to “read to learn”. Those unable to achieve this goal are then left further behind. In many school systems, as it happens, only the top 10 percent of students are able to keep pace with the early grade curriculum. The bottom 10 percent, meanwhile, can spend several years in school with little benefit in terms of their learning (Muralitharan & Zieleniak, 2013).

Studies on learning achievement in LMICs suggest that once children from poor and marginalized communities begin to fall behind in the early grades, they are unable to catch up, and are then more likely to drop out of school (Rose & Alcott, 2015). This presents two main challenges for many LIC and LMIC education systems. The first is ensuring that children from poor and disadvantaged backgrounds have access to trained teachers with skills to improve their learning. The second is ensuring that teacher education programs are incorporating the best practices on what works to improve learning for disadvantaged children. These challenges raise the issue of how we should define teacher quality for the early schooling years, train teachers to meet the standards, and measure their ability reliably.

The teacher quality crisis: Where do children from poor and marginalized communities stand?

Research on teacher quality often defines it as a teacher’s ability to improve student learning, measured by increased standardized test scores relative to a baseline score (Pugatch, 2017). Bold et al. (2018) argue that it is important to understand which dimensions of teacher quality matter, and how teachers perform along these dimensions. Typically, in the literature, teacher quality is measured along the dimensions of subject knowledge and the ability to diagnose learning difficulties, provide regular feedback, and use effective questioning techniques to promote effective learning (World Bank, 2018; Bashir et al., 2018). It suggests that possession of a minimum educational qualification is a poor predictor of teacher quality, compared to a teacher who has undergone formal training and demonstrated competence on these dimensions. UIS data suggests that, in many LICs, about 70 percent of teachers who teach at the primary-education level have not received

formal training, and that these teachers tend to teach predominantly in schools serving children from poor and marginalized communities (UIS, 2013; UNESCO, 2013/2014).

Teacher quality is also defined by the ability to promote effective learning in the classroom (Bold et al., 2018; Filmer et al., 2015). Based on direct unannounced classroom observation and test data from primary schools in seven sub-Saharan African countries—Kenya, Nigeria, Mozambique, Senegal, Tanzania, Togo, and Uganda—Bold et al. (2018) were able to determine levels of teacher quality by measuring: (a) how much time teachers actually spend teaching; (b) whether they possessed relevant subject-matter knowledge to teach basic and higher-order language and mathematics skills; and (c) whether they had the pedagogical knowledge and skills to transfer what they knew to students. They concluded from the analysis of the data that “... students receive about two hours and fifty minutes of teaching per day—or just over half the scheduled time ... largely because teachers, even when in school, are not teaching ... Regarding pedagogy, few teachers can assess children’s abilities and evaluate their students’ progress, and few exhibit practices that are typically associated with good teaching (e.g., regularly checking for students’ understanding and giving feedback)” (p. 5).

However, what has been lacking in the literature is teacher quality data disaggregated by geographic location to draw comparisons between those who teach in poor and marginalized communities and those in more urban settings. This data gap notwithstanding, it is reasonable to assume that teacher quality measured in terms of classroom performance will be much worse in disadvantaged areas, since these have schools that are mostly staffed with untrained teachers or underqualified teachers (UNESCO, 2013/4).

Subject content knowledge

Irrespective of the region in which studies have been conducted, the emerging evidence suggests that the level of teachers’ subject content knowledge impacts student learning outcomes (Filmer et al., 2015; Glewwe et al., 2015; Ganimian & Murnane 2016; Hanushek et al., 2014; Metzler & Woessmann 2012). In the sub-Saharan Africa region, for example, Altinok’s (2013) analysis of SACMEQ data revealed that if weak students had access to teachers with strong subject content

knowledge, this improved their learning outcomes. But, generally, primary and lower-secondary teachers in sub-Saharan Africa countries, including those who have received formal training, have weak subject content knowledge (Altinok, Antoninis, & Nguyen-Van, 2017). In some cases, teachers' subject content knowledge has been found to be no better than that of the students they teach. A recent assessment of a sample of primary teachers' English, mathematics, and science subject knowledge by the Teacher Development Programme (TDP) in Nigeria found that most teachers lacked enough subject knowledge to teach effectively all three areas (De et al., 2016). In a similar analysis of teachers' subject knowledge in "14 sub-Saharan Africa countries, the average grade 6 teacher performed no better on reading tests than do the highest-performing students from that grade" (World Bank, 2018, p. 10).

Even where teachers have received training, many still say they feel inadequately prepared to teach basic school subjects. In a survey of teachers in six sub-Saharan Africa (SSA) countries (Ghana, Kenya, Mali, Senegal, Tanzania, and Uganda), newly-trained teachers revealed they experienced considerable difficulty teaching basic literacy and numeracy topics in the primary school curriculum (see Figures 1 and 2).

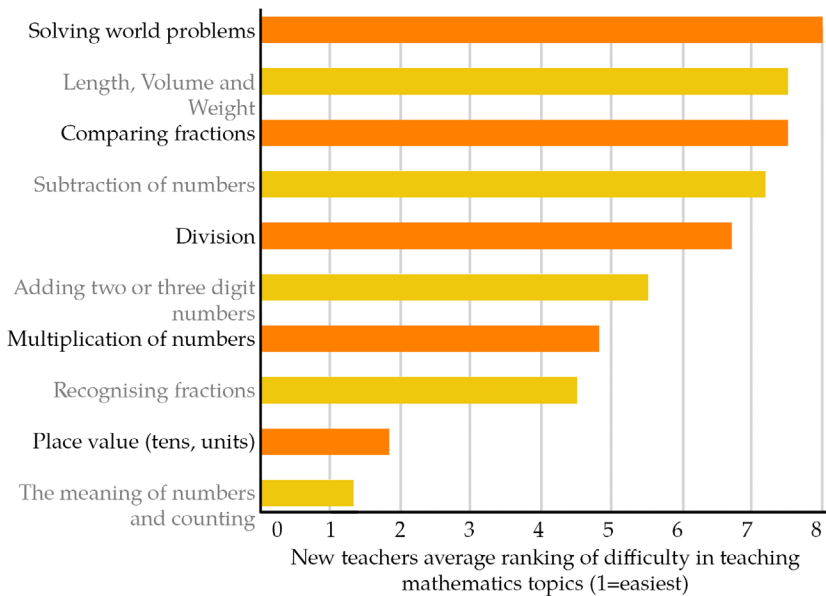


Fig. 1. Ranking difficulty of teaching math topics. Source: Akyeampong et al. (2013).

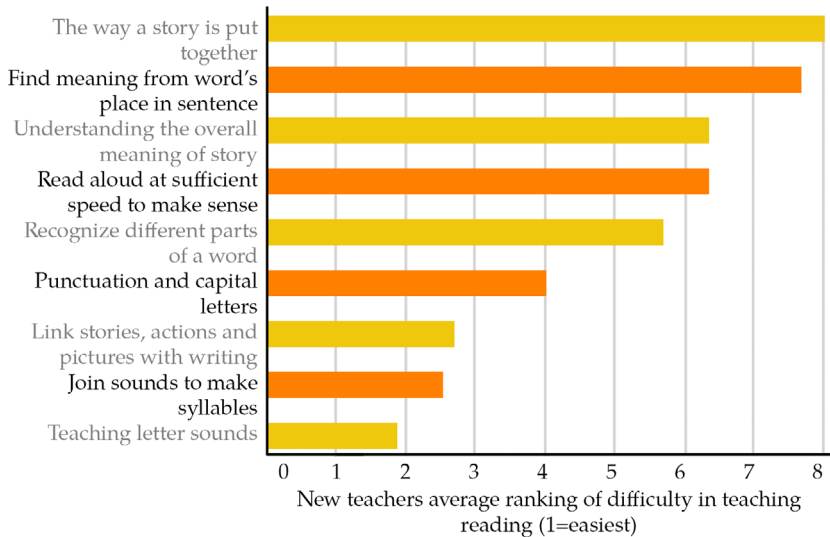


Fig. 2. Ranking difficulty of teaching reading. Source: Akyeampong et al. (2013).

These weaknesses reflect gaps in their teacher-preparation program. Such gaps or weaknesses, especially in subject content knowledge, must be addressed before teachers can adequately improve learning for children at the bottom of the pyramid.

Improving learning depends on Teaching at the Right Level

For teaching to be effective, teachers must have a deep understanding of the subject they teach and the pedagogical skills to convey the concepts meaningfully to students. However, research is establishing that it is equally important for teachers to provide instruction at the right level of the learner they are teaching (Banerjee et al., 2016).

In typical LIC classrooms, many children are not learning at grade level, and therefore a grade-based curriculum often means teachers' instruction is appropriate for some and not others. This factor is rarely considered in teacher education. In sub-Saharan Africa, for example, "the range of children's ages within grades can be wide—5- and 10-year olds can be in grade 1—and the range gets even wider the higher the

grade” (Lewin & Akyeampong, 2009, p. 144; Akyeampong et al., 2007). With most national curricula organized on the assumption that children will be learning in a grade appropriate for their age (i.e., monograde), this silences the wide ranges in capability associated with age, whose occurrence is much higher among schools in disadvantaged rural areas and communities (Lewin & Akyeampong, 2009). Grade-based curriculum in wide-age-range classrooms means that, often, teachers’ instruction is pitched at a level not appropriate for many.

Teaching at the Right Level (TARL) is particularly important for low-performing students. Instruction should be tailored to meet abilities or learning levels rather than students’ ages and grades. Evidence from a series of randomized controlled evaluations in India, Pakistan, Kenya, Ghana, and Zambia indicate that TARL can produce significant gains in learning, especially for low-performing students (Saeed & Jamil, 2018; Banerjee et al., 2016; Duflo et al., 2011). The concept of TARL was pioneered by Pratham to provide education to children in the slums of Mumbai and has grown in both scope and scale, with programs today reaching children and youths across the country (Banerjee et al., 2016). The TARL pedagogy targets each child’s learning needs, regardless of their age or grade. Children work in small groups, big groups, and individually to maximize their learning potential. Characteristically, learning is learner-driven and assessment is used to track individual progress. Children are grouped by level rather than by grade for instruction, and move quickly from one group to the next as they progress in their learning (Banerjee et al., 2016).

An RCT study of 530 schools in Pakistan using the TARL methodology and pedagogy found that children in the program outperformed control-group children across three subjects—English, Urdu, and math. This was attributed to the flexibility of TARL as opposed to the traditional structured curriculum that left many children behind (Saeed & Jamil, 2018). In Ghana, public-school teachers trained to use the TARL approach achieved similar results (Duflo, Kiessel, & Lucas, 2018). The teachers split their students by ability levels, rather than grade levels, for one hour daily. Students improved their test scores by 4 percent on average compared to the comparison group. The relatively low impact was attributed to the fact that teachers did not wholeheartedly implement the approach, due to competing goals of completing the core curriculum. However, larger increases in learning relative to the

comparison group emerged (6.4 percent in scores for third- and fourth-graders) when teacher community assistants (TCAs) were trained to focus on low-performing students in the classrooms of the regular teachers. The TCAs were also able to impact the development of complex skills. This confirmed the positive impact of TARL on low achievers, but also showed that in traditional classrooms where teachers follow a rigid curriculum, the gains are marginal.

Providing targeted help to children who are falling behind and grouping them based on what they know has also been found to be an effective strategy in Kenya (Duflo et al., 2011). In a study which tracked initial achievement in Kenya, lower-achieving students gained significantly, but overall, all students benefited. The tracking was beneficial because it helped teachers focus their teaching at a level appropriate for most students in the class (Duflo et al., 2011). Unfortunately, for the most part, in the Global South, teaching programs assume a monograde curriculum and discourage teachers from targeting instruction to different ability levels. Thus, although there is robust evidence from RCT and experimental studies that TARL works for low-performing students, national systems that train teachers use approaches that do not reflect this evidence.

Teacher reforms in LICs/LMICs to improve teacher quality analysis

The learning crisis has prompted questions about the competency of teachers, but not so much in terms of teachers' ability to target instruction to improve learning for low achievers. Instead, policies have focused on increasing the supply of qualified teachers and improving their general knowledge of teaching. UNESCO's 2013 Global Monitoring Report singled out the failure to reach marginalized groups of students as a contributory factor to the learning crisis, and put forward a four-part strategy to address the teacher quality crisis (UNESCO 2013/14): (1) attract the best teachers; (2) improve teacher education so all children can learn; (3) get teachers to where they are most needed; and (4) provide incentives to retain the best teachers. However, the report said little about what was required, in terms of the design and content of programs, to prepare teachers to address the learning crisis.

Reforms to improve teacher quality must also address the declining status of teachers, as this influences teacher recruitment, deployment, and retention. In sub-Saharan Africa, for example, public perception of teachers has suffered badly because of the worsening state of teachers' working and living conditions (Razquin, 2009). Economic growth in recent times appears to have done little to offset the poor working and living conditions, large class sizes, and the low motivation of teachers in LMICs (Bennell & Akyeampong, 2007). For well-trained teachers to accept teaching positions in poor and marginalized communities, it would require attractive pay scales that make teaching in poor and marginalized communities economically and professionally rewarding.

However, rarely are the socioeconomic characteristics of students, communities, or regions factored into resource allocation. Instead, allocations are based mainly on student-teacher ratios and student enrollment rates (Fredriksen, 2011). Teachers in poor and rural communities find themselves disproportionately under-resourced in schools and classrooms, which limits their ability to provide quality instruction (UNESCO 2013/14). Policies around resource allocation should allot more resources per capita to poor and marginalized communities so that trained teachers can improve learning for low-achieving children.

Although many countries have developed teacher allocation formula to address the problem of inequitable deployment of teachers, consistent application remains a problem. It is common for wide variations to exist across schools and between districts. In countries that have been more successful in achieving greater equity, such as Mauritius and Zimbabwe, they have utilized criteria-based teacher allocation procedures (Bashir et al., 2018). Sometimes inconsistencies in allocations stem from a lack of input of teacher supply and demand data, preventing the collection of reliable information on teacher gaps (UIS, 2006). Stakeholders can also undermine the efficiency and equity of the teacher allocation process through rent-seeking and exertion of political influence (Quak, 2020; Hedges, 2002). When this happens, schools serving poor and marginalized communities are particularly affected because they exhibit all the conditions that make them unattractive places to teach.

Teacher factors that limit learning for children from disadvantaged backgrounds

Inequitable deployment of quality teachers

Several studies have noted that for LICs/LMICs to close the learning achievement gap, schools serving students from disadvantaged backgrounds should aim for equitable allocation of trained teachers (Luschei & Chudgar, 2015; Hanushek & Rivkin 2012). In the sub-Saharan Africa context, Burundi presents an interesting example of how increasing the supply of trained teachers to rural areas can help close the achievement gap between children from poorer and richer backgrounds. After achieving greater equity in the supply of trained teachers, an international study found that overall numeracy scores of students from poor socioeconomic backgrounds was higher than the average scores of students in relatively richer schools (Bashir et. al., 2018). A large part of the success was attributed to the way in which the country had aligned the teacher education curriculum with the school curriculum and supported teachers with continuous professional development.

Generally, there is a lack of strong evidence on how to achieve equitable allocation of teachers. In many LICs, patronage-based recruitment of teachers undermines the credibility of allocation policies, which disadvantages schools in rural areas. The practice of posting newly-qualified teachers to poor and disadvantaged communities can also become counterproductive if teachers view the posting system as unfair and open to manipulation. In Ghana, research by Hedges (2002) found that teachers viewed teaching in rural areas as limiting of their professional aspirations and opportunities compared to teaching in urban towns and cities. Incentives to attract teachers to underserved communities, like stipends in exchange for agreed postings in remote areas, may encourage teachers to take a different view (UNESCO 2013/14).

In a four-country study—Guinea, India, Mexico, and Tanzania—Luschei and Chudgar (2015) showed how equitable teacher deployment could possibly be achieved, if education systems can meet five conditions: commitment to equity, collaboration of key stakeholders, cost-consciousness, careful design, and attention to context. Another

example of a successful initiative is the Rainbow Spectrum initiative from the Philippines, which focused on making disparities in teacher deployment more visible for action to be taken. Districts were color-coded according to their pupil/teacher ratios, with blue indicating a ratio below 24:1, red a ratio over 50:1, and black a complete teacher shortage. This simple device was then used to raise awareness about teacher deployment issues by making information readily available and easily understandable. Between 2009 and 2011, a study found that over 60 percent of new teacher allocation went to black and red areas (Albert, 2012). The Philippines initiative demonstrates the importance of providing specific and context-relevant information in order for appropriate action to be taken.

Teacher absenteeism

Improving teacher supply and allocation to disadvantaged schools is not enough to improve learning outcomes if teacher attendance is poor, and worse still if teachers spend little time actually teaching on the days they are in school. In LICs and LMICs, teacher absenteeism hits disadvantaged students and schools in rural areas the hardest—teacher absenteeism can range from 11 percent to 30 percent (Guerrero et al., 2012). In Ecuador, unexcused absences have been reported to be as high as 53 percent. Quite apart from the damage this does to learning, it is also very costly, accounting for the loss of up to one-quarter of primary school spending—\$16 million annually in Ecuador and \$2 billion a year in India (Patrinos, Velez & Wang, 2013).

The impact of teacher absenteeism is more serious when viewed in terms of the time teachers spend in classrooms teaching. In sub-Saharan Africa, teacher absenteeism from class can sometimes exceed absenteeism from school by “at least 20 percent and as much as 300–400 percent” (Bashir et al., 2018, p. 264). However, in some cases, absenteeism is due to illness, attendance at in-service training organized outside the school, or due to teachers staying away from school to collect their salaries (Bennell & Akyeampong, 2007). Unauthorized absences are also sometimes due to low levels of teacher pay, poor housing and transportation for teachers, or simply low expectations of teacher performance across the board (Guerrero et al., 2012). Many LICs and

LMICs have inaccurate or insufficient data on teacher absenteeism, which makes tackling the problem (Rogers & Vegas, 2009) or knowing the extent of the problem difficult (UNESCO, 2017).

Interventions that have proved successful in reducing teacher absenteeism include acknowledging and rewarding teachers who attend school regularly (e.g., Knoster, 2016) and improving economic incentives for attendance (e.g., Chapman, 1994). According to Rogers and Vegas (2009), countries must be willing to try different approaches to improve attendance and effort, and evaluate them for their impact before widespread adoption. In other words, there are no magic-bullet solutions to the problem of teacher absenteeism. Three of the most promising policies that Rogers and Vegas (2009) recommend are:

1. Make teacher salaries and promotions dependent in part on performance, not just on qualifications and experience;
2. Introduce mechanisms for accountability by involving the community and school management;
3. Increase the intrinsic and non-pecuniary rewards for good attendance by turning schools into pleasant learning environments that offer adequate support for teachers.

Addressing the problem of teacher absenteeism effectively should also involve key actors (teachers, heads, institutions, education managers, and community members), and place emphasis on improving teachers' living and working conditions in disadvantaged communities.

Teacher incentives

There is debate in the literature on whether monetary incentives are an effective tool for tackling the problem of teacher absenteeism or encouraging trained teachers to accept postings to poor and marginalized communities (see Duflo et al., 2015). In Zambia and Mozambique, hardship allowance was used to make deployment to rural areas more attractive. In Mozambique, allowances calculated on a sliding scale based on distance from the nearest tarred road was introduced. Up to 20 percent salary increases for traveling to hard-to-reach areas were also introduced for qualified teachers in Uganda (Mulkeen & Chen, 2008). However, it appears that monetary incentives may not be enough to

make teachers accept rural postings (UNESCO, 2010) or improve their school attendance or teaching performance (Rogers & Vegas, 2009). Although paying teachers based on child performance or attendance has been shown to work in India (Muralidharan & Sundararaman, 2011), in the longer-term such incentives fail because they are hard to design well, as evidenced in the case of Pakistan (Barrera-Osorio & Raju, 2015), or their effects erode with time (Glewwe et al., 2010).

To achieve more equitable teacher deployment, some countries have tried to use non-monetary incentives. For example, Ecuador grants early tenure to teachers willing to work in difficult areas. Mexico's Carrera Magisterial teacher incentive program offered participating teachers working in marginalized areas opportunities to advance more rapidly through the promotion system than teachers in wealthier areas (Luschei & Chudgar, 2015). There is a sense in which non-monetary incentives that promise professional rewards would be appealing to teachers who choose the profession because of high intrinsic motivation, but this has to be accompanied with improved working conditions to achieve improved performance from teachers (Bennell & Akyeampong, 2007).

Contract teachers

Contract teachers are often unqualified or underqualified, and recruited to meet the increasing demand for teachers in rural schools. The recruitment of contract teachers is seen as a short- or in some cases long-term solution to teacher supply and deployment challenges in LICs, especially in rural areas. In systems struggling to train enough teachers or deploy teachers to poor and rural communities, contract teachers become an attractive option (ILO, 2016; Razquin, 2009). However, are contract teachers able to improve learning outcomes in schools in poor and marginalized communities? Two studies provide some insights.

In the World Bank's Service Delivery Indicators (SDI) survey, the content and pedagogical knowledge of contract teachers in primary schools in Africa was found to be comparable with regular trained teachers. They were also more likely to be present in the classroom (Bold et al., 2018). Evidence from randomized control trial (RCT) studies in some LICs shows that contract teachers can help to lower the student-teacher ratio, and overall, contribute to the improvement

of student learning outcomes (Kremer, Brannen, & Glennerster, 2013). However, a study in China—which used a dataset from rural primary schools in western China to estimate the causal effect of contract teachers on student achievement—found that gains in student scores on standardized examinations in mathematics and Chinese were lower in classes taught by contract teachers than in classes taught by trained teachers (Lei et. al., 2018). Another study of contract teachers, using data from five francophone countries for Grades 2 and 5, produced inconclusive results (Chudgar, 2015). The study concluded that their impact varies depending on the *“country context, and the attributes of teacher demographics, working conditions ...”* (Chudgar, 2015, p. 261 emphasis added). Countries that have recruited contract teachers who meet minimum qualification standards and offered them training to achieve trained teacher status have been able to maximise their impact on student learning and achievement, e.g., Ghana, Madagascar, and Mali (Dembélé, Chudgar, & Ndow 2016; Duflo, Dupas, & Kremer, 2015).

Contract teachers may offer a solution to schools in poor and marginalized communities struggling to recruit trained teachers, but the inconclusive nature of evidence on learning outcomes suggest that, just like trained teachers, they also need professional development if they are to improve learning for the most disadvantaged children.

Teacher beliefs and attitudes

Evidence from LIC and LMIC contexts suggests that targeted instructional support can maximize the learning potential of students from diverse backgrounds (Westbrook et al., 2013). However, teacher beliefs about what students can do can inform the learning opportunities they provide. They also become the lens through which teachers make sense of their everyday classroom experience (Akyeampong & Stephens, 2002) and the instructional strategies they adopt (Pajares, 1992). This suggests that if teachers, in the course of their initial training or through professional development activities, are not provided with training to improve their attitudes and perceptions of students with different abilities and backgrounds, they may not develop strategies to improve learning for these students.

A teacher’s own belief in their competence to address learning needs of weak students does not simply emerge because they have received

formal teacher training. For example, a survey of newly qualified teachers in Ghana found that about 59 percent believed they could improve the academic performance of slow learners, but also quite a sizeable proportion (41 percent) did not share this view. In that study, head teachers often indicated “that newly qualified teachers had difficulty selecting appropriate content and instructional strategies to meet pupils’ ability level and background characteristics” (Akyeampong & Lewin, 2002, p. 347). Part of the problem seems to lie with unfamiliarity with the learning needs of children from disadvantaged backgrounds, and with how to target instruction to improve learning for this group.

A study of teacher education in six sub-Saharan African countries found that newly-trained primary school teachers did not know enough about the backgrounds of the children in their class to be able to create tailored learning opportunities (Akyeampong et al., 2013). They may deny students from minority or disadvantaged backgrounds equal learning opportunities out of false assumptions or insufficient knowledge about their difficulties in learning. Besides, positive attitudes towards students, irrespective of their background or learning difficulties, matter. In a systematic review of evidence from developing countries, Westbrook et al. (2013) revealed that, “teachers who had positive attitudes towards girls, overage students, those marginalized by class and caste, and students with disabilities were more likely to be socially responsive towards them in their practice” (p. 51).

Pedagogies that improve learning for disadvantaged children

Mother-tongue instruction in the early grades

Children’s identities are affirmed and their academic achievement improves when their local languages and cultural knowledge are respected. Since language is both a source of identity and a key means by which people can either gain access to power or be excluded from it, mother-tongue instruction is central to empowering poor and disadvantaged students to become successful learners (Cummins, 2000). For many children in poor and marginalized communities, their first encounter with formal education is through a language they do not

speak at home. This becomes the first barrier to overcome if they are to succeed in school and continue their education (Brock-Utne, 2001; 2010).

Studies have demonstrated the benefits of mother-tongue instruction in the early years of education (e.g., Piper et al., 2016a; 2016b). Increasingly, evidence from studies in sub-Saharan Africa suggests that matching the students' home language to the language of instruction in the lower grades of primary school improves learning in later grades (Akyeampong et al., 2018; Ball, 2011; Carter et al., 2020a; Piper et al., 2016a; Sailors et al., 2010). In Ghana, for example, a study found that out-of-school children who were enrolled in an accelerated literacy and numeracy program and taught using their mother-tongue outperformed a comparative control group of public-school students who were not taught using mother-tongue instruction (Carter et al., 2020a). Mother-tongue instruction was also instrumental in successful transition to government public schools. However, the study found that, in the case of both low-performing boys and girls, some continued to disengage from learning, and show social withdrawal, anxiety, and frustration after transition. The lack of attention given to this group by teachers seems to explain this pattern (Carter et al., 2020a; Akyeampong et al., 2018). The study also found that not having access to mother-tongue instruction was linked to lower progress in numeracy. As reviewed elsewhere, it is critically important that teachers be competent in the mother-tongues that the students speak (Wagner, 2018).

A study in Ethiopia, which explored the impact of mother-tongue instruction in early grades on the performance of students later after they switch to English instruction found that, "learning first in the mother tongue in the early grades improves maths test scores later (in grade 5) ... suggesting students taught first in their mother tongue learn in English better after they switch to English-instruction classrooms" (Seid, 2019, p. 577). Further analysis of data from the Ghana study by Carter et. al. (2020a) revealed that instructing children from poor and disadvantaged backgrounds in their mother-tongue also improves their chances of sustaining gains in literacy in multilingual learning environments in the government school system, even if initially these children experience some difficulties at the point of transition.

One of the reasons given for why many children in poor countries drop out of school is because they are instructed in a language they are

unfamiliar with and find hard to understand. DeGraff (2016) explored the power of “Kreyol” in learning to read and in reading to learn in Haiti, and found that a large proportion of school dropout happened at an early age and language was a contributory factor in their academic failure (p. 436).

Accelerated learning pedagogies

To achieve SDG4 by 2030, it is imperative to provide children who are out of school with access to quality education. This population is comprised of many children who once attended school, but failed to make progress in their early years. Children and youth in SSA, for example, make up about 35 percent of the world’s out-of-school child and youth population (UNESCO Institute for Statistics (UIS), 2017; World Bank, 2018). According to UIS statistics, there are about 25.7 million out-of-school adolescents of lower-secondary-school age and about 34.4 million in the upper-secondary-school age in SSA. This translates to out-of-school rates of 34 percent for the 12–14 age group, and 58 percent for the 15–17 age group (UIS, 2017). This is a large population of children who are unlikely to access dignified and fulfilling employment and escape inter-generational poverty (Dyer, 2013). For this population, accelerated education promises rapid acquisition of basic knowledge and skills to enable resumption of formal education. Accelerated education programs have therefore emerged as a viable response to the educational needs of out-of-school children who either dropped out or never attended formal school due to poverty, conflict, and crisis. Accelerated education is described as a flexible, age-appropriate program that promotes access to education in an accelerated timeframe (Shah, 2015; Myers & Pinnoc, 2017). The timeframe is important because out-of-school children need to catch up quickly on the foundational knowledge and skills they lost before they can continue successfully in their education and gain dignified employment in the future.

Several studies present evidence of the efficacy and efficiency of accelerated learning instruction in South Africa (Taole, 2018), Ethiopia (Akyeampong et al., 2017), and Ghana (Akyeampong et al., 2018). Each of these studies suggest that it is possible to bridge the learning gap of predominantly out-of-school children through pedagogies that are

different from those used in mainstream education systems. Two of these studies will be described in more detail to understand why and how accelerated learning pedagogies are able to achieve this effect.

The Speed School program in Ethiopia³

The Speed School program in Ethiopia provides out-of-school children between the ages of 8 and 14 with an opportunity to be reintegrated into government schools after ten months of accelerated learning instruction. The program aims to improve this group's learning by seeking not only faster learning but also deeper and more effective learning than they had experienced before dropping out of formal education. An impact evaluation study in 2014 found that after one year in government schools, children who had gone through this program, dubbed "Speed Schools", made faster progress in learning than other non-Speed-School students who served as the control group. A longitudinal evaluation study which tracked Speed School students to measure the impacts of the program on primary school completion, learning outcomes, and attitudes towards learning found that the program had long-term impact. It was able to sustain cognitive gains in literacy and numeracy, enabling Speed School students to transition smoothly into the mainstream public education system.

As in many accelerated education programs, the program incorporated emotional, social, relational, and cultural aspects of learning rooted in the learner's context (Tobbell et al., 2010). Basically, the pedagogy affirmed and extended the students' identities and enabled them to develop skills in collaborative critical inquiry. They were able to repurpose their previously unsuccessful learning experiences to achieve more meaningful and lasting learning outcomes. The basic elements of the Speed School pedagogy are: its emphasis on developing reading skills (four times as many hours than in government public schools); extensive use of formative assessment; use of local languages to access and construct knowledge—and, in the process, to develop critical consciousness and cognitive competence—and finally, practical applications that invite the learners to draw on their cultural knowledge and experiences (Akyeampong et al., 2018). The pedagogy

3 Akyeampong et al., 2014; Akyeampong et al., 2018.

was inclusive in that it provided every child the opportunity to express their knowledge and receive collective support from their peers and teachers. Each contribution was equally valued, and the responsibility for learning and developing understanding became a shared one.

Working mainly in groups, teachers formulated questions that allowed students to think deeply about problems, which they discussed and summarized in group responses before presenting their ideas and solutions to the whole class. This format was used to encourage knowledge to be shared, debated, reconstructed, and retained meaningfully. Other salient features of the pedagogy included:

- Multilingual teaching, using both Amharic and English, but above all, Amharic to ensure all students understood;
- Constant repetition and frequent revision until understanding was achieved by all;
- The incorporation of visual aids, group- and pair-work, songs, and craftwork into everyday classroom teaching and learning.

This approach was successful, in that it motivated out-of-school children to become successful learners. Curriculum content that related to their everyday experience, combined with mother-tongue instruction and a supportive, friendly learning environment, built their confidence and self-esteem. Group activities became a vehicle for students to talk about their learning, which encouraged teachers to eschew viewing teaching as the mere transmission of knowledge. Instead, it allowed them to engage learners in a collaborative process that supports the development of cognitive and other personal and social skills. This approach seems to have benefited learners who otherwise would have been left behind in traditional classrooms, where teachers' classroom instruction is pitched at the level of high achievers or children from advantaged backgrounds.

The Complementary Basic Education (CBE) program in Ghana⁴

The CBE program in Ghana attempted to provide a second chance at education for out-of-school children in predominantly rural areas of Northern Ghana. An evaluation study designed to examine evidence

4 Akyeampong et al., 2018.

of impact on learning outcomes and progression into public schools revealed that, in less than a year, it had improved the abilities of children who had either dropped out of school or never attended, to levels similar to—and for some, better—than children who already had at least three years of primary education. But, unlike the Speed School program in Ethiopia, it adopted a pedagogy that was more closely aligned to instructional practices in mainstream government schools. The expectation was that this would smoothen transitions. For example, the structure of teachers' instructional approach used in the CBE classroom was similar to what was commonly used in public schools—a short introduction using question and answer techniques to recall previous knowledge, followed by a main lesson which comprised teacher-led instruction, finally ending with a summary of the lesson using questions and answers. Two “new” elements of the CBE accelerated learning pedagogy were the use of:

- The syllabic and phonetic methods of learning local language;
- Collaborative learning and connecting learning with the everyday life experiences of learners to make it more meaningful and enjoyable.

What was lacking was attention to the learning needs of low performers who were increasingly silently excluded from classroom discourse. Unlike the Ethiopia case, the CBE pedagogy lacked the strong collaborative culture that produced a greater sense of shared responsibility for learning and incorporated the needs of low-performing students.

In summary, accelerated learning pedagogies, of the kind used by the Speed Schools in Ethiopia and the CBE program in Ghana, provide insights into how the learning needs of children at the bottom of the learning pyramid could be met. What both programs show, particularly the Speed Schools, is that pedagogies that position teachers as facilitators of learning—and provide every child, irrespective of their ability, equal access to learning activities and the production of knowledge—have the potential to enhance low-achieving children's ability to learn and progress. Teachers are able to visualize and experience knowledge production as a co-construction activity. Where this is done more efficiently, as in the Ethiopia case, teachers orchestrate lessons with significant input from every child. In the case of Ghana, where the

pedagogy was more teacher-led, the level of participation from low achievers was reduced, resulting in slower progress (Sabates et al., 2020; Akyeampong, 2018).

Inclusive pedagogies

According to James & Pollard (2011, p. 280), “‘pedagogy’ expresses the contingent relationship between teaching and learning ... and does not treat teaching as something that can be considered separately from an understanding of how learners learn”. Inclusive instructional strategies use social and emotional supports to both scaffold learning and foster motivation. In this way, inclusive pedagogy creates space for all learners to contribute to knowledge production (Molbaek, 2018). Such pedagogies recognize that effective learning requires every child to participate, making it less likely for low achievers to be silently excluded. Stentiford and Koutsouris (2020) point out that the concept of inclusion must also extend beyond participation, and address diverse learning needs of students. However, studies suggest that teachers generally struggle to consistently create and sustain inclusive classrooms (Molbaek, 2018; Husbands & Pearce, 2012; Florian et al., 2010).

It could be argued that inclusive classroom concepts underpin the Speed School pedagogy in Ethiopia, and to some extent, the CBE program in Ghana. Particularly with the Speed School, all learners engage in peer-tutoring, group learning, and role play, with teachers using scaffolds to facilitate student learning. But it required restructuring the classroom seating arrangements so that students could face each other, in order to encourage cooperation and collaboration. A study in Kenya that explored primary teachers’ inclusive practices also found that, when teachers reorganized their classrooms into a horseshoe format, this created a sense of community and enhanced participation for all students (Elder et al., 2016). However, traditional classrooms in LICs often lack the space and facilities to create this kind of classroom environment.

A survey and qualitative research study of experienced teachers from around the world aimed to understand important qualities needed for teaching disadvantaged students, including low achievers. An important quality was identified by the experienced teachers: an ability to build

strong relationships with disadvantaged students (Akyeampong et al., 2018b). According to the experienced teachers, it was important for teachers to know which students were disadvantaged, or why they did not engage in learning, to empathize with their difficulties and give them regular attention during classroom instruction.

The challenge is for teacher preparation programs to develop such qualities and capabilities in the teachers they produce. The difficulties that students experience must be reframed as dilemmas for teaching rather than problems within students (Florian et al., 2010). However, as Florian and Black-Hawkins (2011) point out, “meeting this challenge sets a high standard for inclusive practice because extending what is ordinarily available to all learners is a complex pedagogical endeavor. It requires a shift in teaching and learning from an approach that works for most learners ... towards one that involves the development of a rich learning community characterised by learning opportunities that are sufficiently made available for everyone, so that all learners are able to participate in classroom life” (p. 814).

Meeting learning needs of disadvantaged children through teacher professional development

Teacher education programs in many LICs and LMICs often pay little attention to improving the ability of teachers to help minority or disadvantaged students learn. In Ghana, for example, studies have found that teacher education programs are largely ineffective at producing teachers with the skills to improve learning for most students. Teacher education programs in many LICs have decontextualized teaching, reducing it to a set of homogenized strategies which then make it difficult for teachers to pick out and respond to the learning needs of disadvantaged students with the appropriate instruction (Lewin & Stuart, 2003). Another limiting factor, found in teacher education systems in developing countries, is misalignment between teacher training and teaching methods with the school curriculum (Westbrook et al., 2013).

Another challenge is that school settings and policies may hinder teachers who wish to reorganize their classrooms to support a more inclusive pedagogy. For example, “a school’s policy on setting may make it difficult for a teacher to use alternative grouping strategies in some

lessons” (Florian & Black-Hawkins, 2011, p. 819). Education systems and school policies may not sufficiently highlight the importance of tracking under-achieving students for remedial action, which makes it less likely for teachers to give this focused attention.

In the study of the qualities of experienced teachers who teach disadvantaged children, the teachers were asked how much their education had contributed to their ability to help disadvantaged children learn. Most responded that, overall, it had done very little to prepare them to meet the learning needs of the silently excluded child. They had developed their capacity to address the learning needs of these children through the occasional professional development course, and through trial and error from classroom practice (Akyeampong, et al., 2018b). To make a difference, the teachers felt that teacher education had to improve in three areas:

- **Amend the selection process for entry to initial teacher education programs to include interpersonal skills and qualities in addition to academic qualifications.** This would draw attention to the importance of empathy and communication/relational skills as qualities that teachers must possess and promote.
- **Consider ways in which the pool of teacher candidates can become more diverse, attracting candidates with knowledge and experience of disadvantaged communities.** Teacher candidates should ideally reflect student demographics in the country. To achieve this, other teacher recruitment practices may have to be considered—for example, recruiting student teachers from poor and disadvantaged areas who may lack the initial entry qualifications for formal teacher training. These teachers may require a mixture of on-the-job training and institution-based training where they, for example, are trained to use scripted lessons to teach. Studies have found that low-skilled teachers can be trained to use scripted lessons and scaffolding on how to improve low-performing student learning outcomes (Murnane & Ganimian, 2014).
- **Help teachers gain hands-on practical experience using skills and strategies which support the learning of all students.**

Education programs should increase school-based teacher training elements and expose student teachers to learners from diverse backgrounds, in order to move away from generic teaching methods that leave low achievers or disadvantaged students behind. For assumptions and procedures that favor advantaged students to be replaced by new ways of thinking and working that support every student, irrespective of their socioeconomic background or learning difficulties, prospective teachers would have to experience what works to improve learning in different classroom environments composed of students from different backgrounds and communities.

Recommendations

The evidence reviewed in this chapter points to the importance of helping teachers develop the capacity to create inclusive classrooms. The following are key recommendations that emerge from the review of evidence in this paper.

Teacher policy

- Many practicing teachers in LICs and LMICs have not mastered the school subjects they teach. Their basic pedagogical knowledge can also be weak. Often, many of these underqualified teachers end up teaching in schools that serve poor and marginalized communities, and they are unable to provide quality instruction to improve learning. It is not enough to simply increase the supply of trained teachers. Equally important is ensuring that teacher training develops strong foundational knowledge in school subjects, either through continuous professional development or in-service training.
- There must also be policies aimed at reducing high teacher absenteeism rates, especially in schools in rural areas. As the evidence reviewed suggests, addressing this problem requires policies that improve weak governance and poor teacher management, and incentivize teaching in disadvantaged communities.

Teacher professional development policy

- Many teacher professional development programs do not sufficiently focus on how to address the learning needs of disadvantaged children, or how to implement an inclusive curriculum. Teacher professional development curriculum policy should emphasize identification of the “silently excluded” child and promote inclusive instructional strategies, such as those used in accelerated learning programs. All programs must pass key inclusive practices criteria, such as: (a) to what extent does the professional training equip the teacher to address different learning needs and challenges; (b) to what extent are strategies sensitive to learning needs of students at the bottom of the learning pyramid; and (c) to what extent does the program “create (a rich learning community) rather than using teaching and learning strategies that are suitable for most” (Florian & Black-Hawkins, 2011, p. 818).
- Recruitment policy should also target teachers from diverse backgrounds, and make the attitudes and dispositions that are important for meeting diverse learning needs important in teacher selection criteria. If teacher candidates have strengths in other important areas but not in this area, they should, in the early stages of their career, take professional development courses that address this gap. This training should aim to make them see “difficulties in learning as professional challenges for teachers, rather than deficits in learners, that encourage the development of new ways of working” (Florian & Black-Hawkins, 2011, p. 819).
- This chapter has also identified the importance of teaching at the right level of the child, so no child is left behind. But it has also pointed out that current classroom instructional practice in LICs and LMICs lacks sensitivity to this approach. Teacher education curriculum specialists should design programs that prepare teachers to teach at the right level of each child, and skills for teaching in multi-grade classroom environments.

- Lessons from successful accelerated learning pedagogies suggest that mother-tongue instruction is critical for inclusive education to have impact, especially at the early stages of education. It is important for early-grade teachers in LICs and LMICs to master mother-tongue instructional languages and pedagogies. Programs should be designed to teach mother-tongue language instruction or incorporate aspects of it in early-grade teacher training.

Teacher and teacher education research

- There is a paucity of research that examines the kinds of inclusive pedagogical practices that help to close the learning gap between low-achieving students and their more advantaged counterparts in LICs and LMICs. Further study of what works to improve learning for low-achieving students from disadvantaged backgrounds in actual classroom settings is also needed.
- Inclusive pedagogical strategies from accelerated learning programmes (ALPs) suggest that they can address diverse learning needs. More research in this area is needed to develop a better understanding of how the different types of ALPs improve learning for disadvantaged students in the early years of schooling (e.g., Grades 1 to 3), but also how they can be effectively and efficiently mainstreamed into public school classrooms to improve learning for all.
- Research is also needed to understand how pre-service teachers and classroom teachers can establish better connections between students' lives and the school curriculum, and how teachers can develop supportive relationships with disadvantaged students to advance their learning. There is also the need for studies which explore how pre-service teachers learn to teach in contexts of increasing student diversity (as well as mother-tongue languages), including teaching students with very different learning needs in the same classroom space.

Conclusion

SDG4 is an ambitious goal, achievement of which will require greater investment in teachers' abilities to address the learning needs of poor and vulnerable groups in LICs and LMICs. For many of these children, school attendance is not synonymous with learning, because they are silently excluded from everyday classroom activities. Even for those who survive and continue beyond the early years of primary education, they continue to make slow progress compared with children from advantaged backgrounds. We need to understand and implement effective techniques and teaching programs that improve learning outcomes for children at the bottom of the learning pyramid. While the research shows some promising interventions, this chapter argues that we need to start from the initial preparation and in-service training of teachers. Given the scale of the challenge, inclusion must be a high priority for teacher education systems in LICs and LMICs.

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