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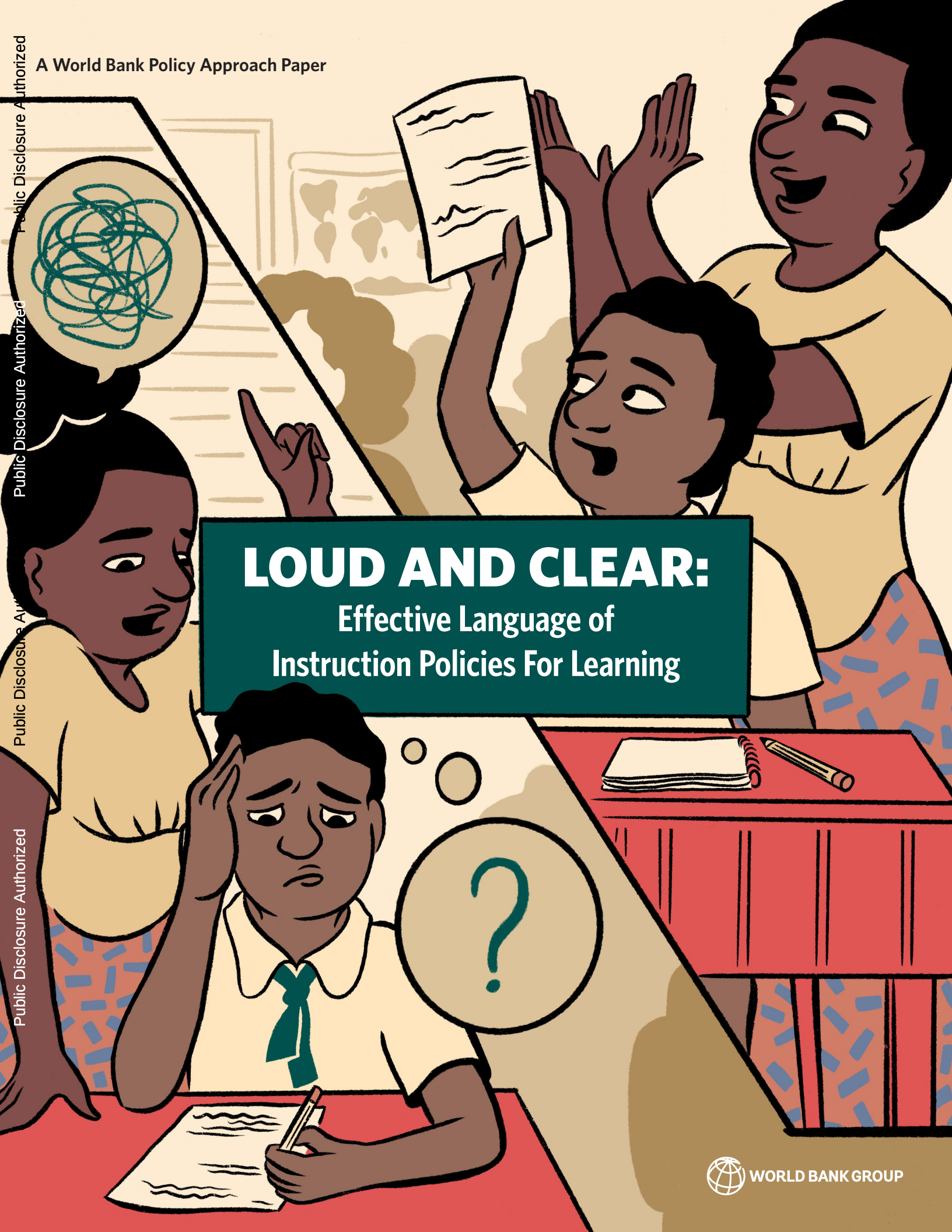
A World Bank Policy Approach Paper

LOUD AND CLEAR:

Effective Language of Instruction Policies For Learning



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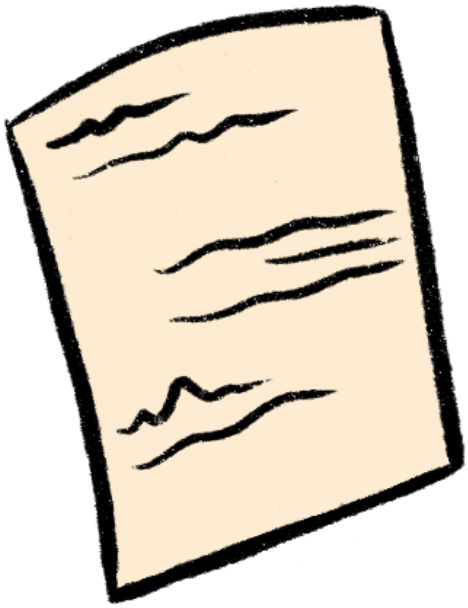

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ABBREVIATIONS

LIST OF ACRONYMS	
CC BY	Creative commons by [attribution]; meaning open access
ECD	Early Childhood Development
ECEC	Early Childhood Education and Care
EGMA	Early Grade Math Assessment
EGRA	Early Grade Reading Assessment
FCV	Fragility, Conflict, and Violence
GBA	Global Book Alliance
GRN	Global Reading Network
HCI	Human Capital Index
HCP	Human Capital Project
ILSA	International Large-Scale Assessment
L1	Language in which children are proficient when they start school*
L2	Language in which children are not proficient when they start school **
LAYS	Learning-adjusted Years of Schooling
LLF	Language and Learning Foundation (India)
LMIC	Low- and Middle-Income Countries
LoI	Language of Instruction
LPP	Literacy Policy Package
LWC	Language of Wider Communication
MSA	Modern Standard Arabic
MTB-MLE	Mother Tongue-based Multilingual Education
MWL	Minority Written Language
NYC	New York City
PASEC	Programme d'Analyse des Systèmes Educatifs de la CONFEMEN
PIRLS	Progress in International Reading Literacy Study
PISA	Program for International Student Assessment
SDGs	Sustainable Development Goals
SES	Socioeconomic Status
TIMSS	Trends in International Mathematics and Science Study
TLM	Teaching and Learning Materials
WBG	World Bank Group

**L1 is typically defined as children's first language. In this paper, it is used to indicate a language that children speak and understand well when they start school. It may or may not be the first language they learned.*

***L2 is typically defined as children's second language, which they often learn at school. In this paper, it is used to indicate a language that children do not speak and understand well when they start school. It may or may not be their second language.*

These definitions are acutely relevant to multilingual societies or regions with many small communities that speak different languages but use a single regional language as a means of broader communication across communities.

Executive Summary

HUMAN CAPITAL ACCUMULATION IS LARGELY A LANGUAGE-BASED ENDEAVOR. It is the basis of wealth in modern societies and is primarily acquired through schooling. Policies that maximize the amount and quality of human capital have a myriad of positive effects. To maximize it, countries must maximize learning in school, and in so doing raise the number of Learning Adjusted Years of Schooling (LAYS) completed by their population. The World Bank created the Human Capital Project and the Human Capital Index to bring policy attention to the need for countries to invest in their people and for people to invest in themselves. Policies that promote human capital accumulation—such as good language of instruction policies—should be actively championed by the World Bank and central to country dialogues on helping people achieve their full potential.

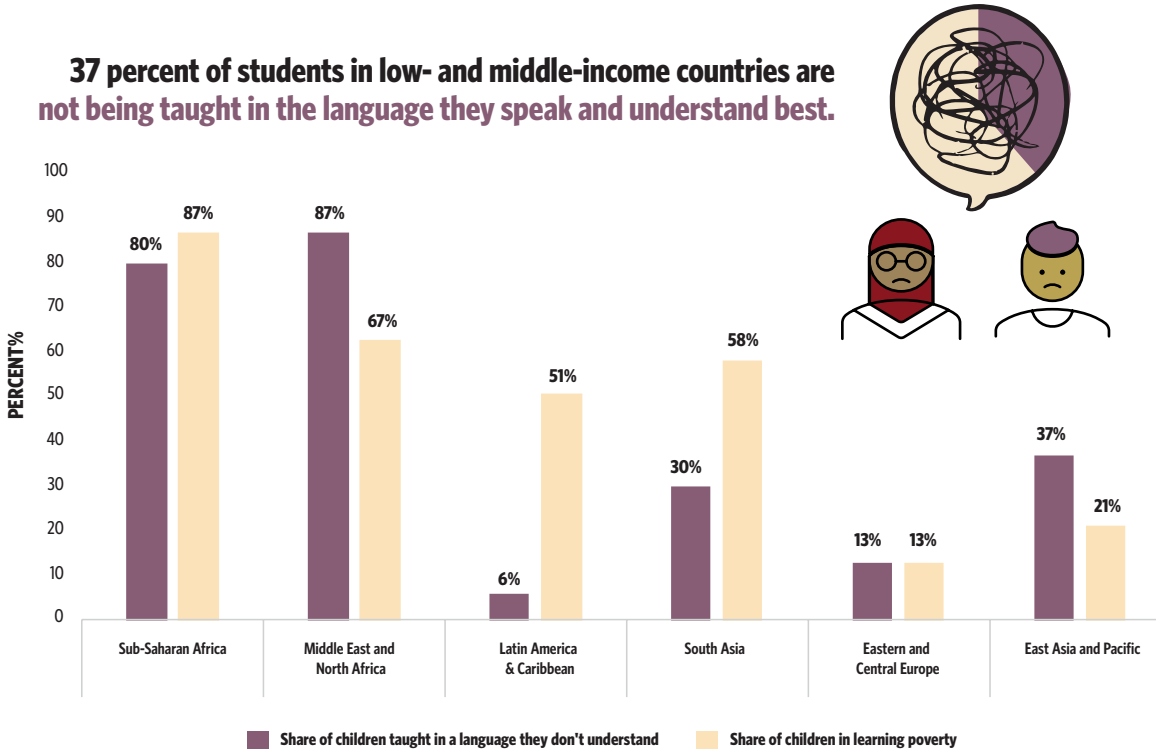
SHOCKINGLY LOW LEARNING OUTCOMES MAY BE A REFLECTION OF INADEQUATE LANGUAGE OF INSTRUCTION POLICIES. The LAYS component of the Human Capital Index and measures of Learning Poverty show shockingly low learning levels. In some countries, children with three years of primary education cannot identify a single written word, and may only know one letter.[1] Without consideration of language of instruction (LoI) issues, one might erroneously conclude that teachers lack the knowledge and skills to teach, or that students are too disadvantaged to learn. An alternative, plausible consideration is that teachers are required to provide instruction in a language that students do not speak or understand. The low test scores in some instances simply reflect this near-total lack of understanding of the language used for teaching and/or testing; they do not indicate any inability to learn under the right learning conditions.

APPROPRIATE LANGUAGE OF INSTRUCTION POLICIES FACILITATE LEARNING AND MORE. When children are first taught in a language that they speak and understand wellthey learn more, are better placed to learn other languages, are more likely to stay in school, and enjoy a school experience appropriate to their culture and local circumstances. A diverse and substantial body of research, cited throughout this paper, attests to this fact. Appropriate LoI policies also promote equity in schools and in labor markets, improve the cost-effectiveness of education, and promote inclusiveness. Good LoI policies should be a cornerstone of effective national human capital development strategies, and therefore of acute concern to national policy makers and development partners.

GOOD LANGUAGE OF INSTRUCTION POLICIES REMAIN THE EXCEPTION, NOT THE RULE. Despite their many benefits, many education systems do not implement appropriate LoI policies. Instead they often require children to learn in languages they do not know well—and, in far too many cases, in languages they do not know at all. The children who are impacted by these policies are often those who are disadvantaged in other ways, such as socioeconomic status and distance from urban centers, that also make learning and progress at school challenging. Requiring teachers to provide instruction in languages that neither they nor the students speak is a common practice despite the evidence that 90 percent or more of students may fail to acquire foundational skills such as basic literacy and numeracy in schools that implement these policies.[2]

POOR LOI POLICIES HARM LEARNING, ACCESS, EQUITY, COST-EFFECTIVENESS, AND INCLUSION. A substantial and growing body of research shows that children learn better in their first language (L1) than in a second language (L2). When taught in their L1 first, they are more likely over time to become proficient in an L2 and comfortably absorb academic content. They are also more likely to remain in school. Children from households in the bottom 40 percent of the socioeconomic distribution are more likely to endure instruction in a language they do not understand, and lack the family resources to mitigate the effects of inappropriate LoI policies in the schools they attend.[3] Countries pursuing LoI policies that promote the use of languages neither spoken nor understood by teachers and students see a disappointing return on their investment in education. These policies contribute to higher dropout rates, repetition rates, and lower learning overall. In this sense, countries would gain financially if, by adopting better LoI policies, they were to lower the cost of each graduate produced and each unit of learning mastered. That would also make learning relevant to and inclusive of students in many ways, not least through the inherent value and validation a language receives when it is used as an official medium of instruction.

INAPPROPRIATE LOI POLICIES AFFECT AN ESTIMATED 37 PERCENT OF STUDENTS IN LOW- AND MIDDLE-INCOME COUNTRIES. UNESCO (2016) estimates that globally four in every ten students are taught in languages they do not know. Evidence from original analyses undertaken for this paper largely confirm the figure and attest to the enormity of the problem: 37 percent of students in low- and middle-income countries are not being taught in the language they speak and understand best. In some countries, more than 90 percent of students are not taught in a language they speak and understand. More than a quarter of a billion students are affected. Based on data from Ethnologue,[4] 12 of the 20 countries with the highest rates of learning poverty use instructional languages that few of their students understand when they come to school. The 53 percent of children in low- and middle-income countries (LMIC) who fail to read with understanding by age ten[5] almost certainly includes a large share of students who are not taught in their L1.[6,7]



MASSIVE PROGRESS IS FEASIBLE BY TEACHING IN A SMALL NUMBER OF ADDITIONAL LANGUAGES. The prospect of offering instruction in each of the world's more than 7,000 languages[8] is daunting, but that sentiment is misguided. Policy dialogue often labors under the assumption that embracing mother-tongue-based multilingual education (MTB-MLE) is expensive and onerous. In fact, MTB-MLE is cost-effective and simpler to organize than usually thought. Indeed, the vast majority of students currently learning in an L2 would benefit from a rather modest global expansion of the number of languages used for instruction. Three-quarters (75 percent) of the problem could be attenuated by offering instruction in an additional 220 languages worldwide—on average about one new language per country. To reach 84 percent of all language minority students in all countries requires teaching in only about 559 languages—fewer than three additional languages per country on average. In both scenarios, the would-be additional languages are already "written languages." They have established orthographies, and each is spoken by at least 1.5 million people. The remaining roughly 6,200 languages of the world are spoken by fewer than 10 percent of the world's people. Five-sixths of the problem can be solved with concentrated and focused effort; solving the final one-sixth is then likely to require exponentially increasing time and resources.

LOI POLICIES ARE INFLUENCED BY LARGER POLITICAL AND ECONOMIC CONSIDERATIONS. In light of this evidence, why are so many countries still choosing a LoI that results in significantly worse learning outcomes and social exclusion? One reason may be lack of knowledge of the benefits of teaching the language that students best speak and understand. Other factors are arguably less tractable. Language choices for education are often the result of political considerations beyond the education sector. Language is closely tied to national identity and political identity. Nation-building sometimes involves the promotion of one group's language at the expense of the languages of other groups. Language proficiency has labor market value. Parents often view competence in metropolitan or international languages as central to their children's career success. The ends—the goals—such as proficiency in an international L2, can dictate the means in a manifestly counterproductive manner when all instruction is in that L2 regardless of teachers' or students' levels of proficiency. Consideration of the broader political context is essential to effective policy engagement on LoI issues.

POLICY SOLUTIONS EXIST BUT ARE NOT BEING SYSTEMATICALLY IMPLEMENTED. Advocacy for good LoI policies has been ongoing for decades but has seldom held the attention of key decision makers and development partners. A trend toward more and better research is thankfully emerging in some regions.[9] Experience has been summarized and analyses have distilled sound policy advice for the issue as a whole and for virtually all relevant sub-issues. Sound advice is available for country-level situation analyses and for planning for language use in education. Guidelines for and examples of good scopes and sequences for L1 instruction have proliferated. Methods for the development of teaching and learning materials, including software to create textbooks and storybooks for children, are freely available and being used more frequently than in the past. Policy options with respect to a range of issues affecting teachers, teaching, and training are growing. Knowledge about and concern for language of assessment issues is increasing. Empirical evidence on the effectiveness of "late-exit" (see below) and other effective curricular and pedagogical strategies is available. However, progress is too slow and available tools are not sufficiently known or understood.

THIS PAPER DESCRIBES THE NEW WORLD BANK POLICY APPROACH ON LOI, AS PART OF THE OPERATIONALIZATION OF THE LITERACY POLICY PACKAGE IN SUPPORT OF THE BANK'S NEW LEARNING TARGET. This new approach aims to support progress on LoI policies and interventions, as LoI-based challenges are identified and addressed in light of each country's context. Under the new approach, the World Bank considers it critical to observe the following principles to enhance learning in low- and middle-income countries:

The new World Bank policy approach on LoI, as part of the operationalization of the Literacy Policy Package in support of the Bank's new Learning Target, is based around 5 principles:

PRINCIPLE 1	PRINCIPLE 2	PRINCIPLE 3	PRINCIPLE 4	PRINCIPLE 5
Teach children in a language they understand starting with Early Childhood Education and Care (ECEC) services through at least the first six years of primary schooling. It is critical that instruction be in the language most students speak and understand best.	**Use a language children understand for instruction in academic subjects beyond reading and writing.** Students need to master reading and writing in a broad range of disciplines and in all school subjects.	**Introduce an additional language (if desired) as a foreign language with a focus on oral language skills.** Students can master two languages in basic education if instruction and sequencing are optimized.	**Continue using the language children understand for instruction even after a foreign language becomes the principal LoI.** L1 instruction continues to improve L2 performance in important ways even after the L2 becomes the LoI.	**Continuously plan, develop, adapt, and improve the implementation of LoI policies, in line with country contexts and goals.**

To promote and operationalize this approach, the World Bank proposes three strands of work to ensure the principles are routinely integrated within World Bank operations. Strand 1 focuses on analyzing and assessing the LoI situation in each client country as well as the main policy options available. Strand 2 involves more proactive engagement with LoI issues through enhanced dialogue and planning to help countries address priority issues. As part of Strand 3, the Bank's Education Global Practice would work with other partners to advocate for appropriate attention to LoI issues and in creating, collecting, and disseminating the full range of cutting-edge knowledge and policy solutions and promoting long-term solutions for language issues in education.

THE PURPOSE, AUDIENCE, SCOPE, AND STRUCTURE OF THIS PAPER. Its purpose is to ensure that the WB Education Global Practice can help clients mitigate or eliminate the serious problems that inappropriate LoI policies impose on learning and schooling. The paper is intentionally short; it is not an exhaustive academic paper. Sufficient detail is presented to begin to explain issues in light of current policy decisions, not to treat the subject in its entirety. The paper is selective and does not look at LoI in all aspects of education policy. It does not consider the role of LoI in tertiary education, technical and vocational education and training, adult education, or lifelong learning. The paper recommends endorsement of the new approach by WBG management. Embracing its recommendations involves commitment to a range of actions that will support WBG client countries, including more in-depth analyses, development and dissemination of global public goods, improved education staff knowledge and capacity and more effective dialogue, especially in basic education. Readers should bear in mind that:

- ***We do not yet have all the answers.*** As we move forward, key knowledge gaps will need to be addressed and closed. We will need, for example, to better understand and develop recommendations to improve second-best situations, such as those that involve the use of one-way L2 immersion. Likewise, the compounding effects of poor teacher proficiency in the target language in combination with low student proficiency need to be disentangled. The effects of time-on-task,

the quality of teaching and learning materials, and teacher support and other issues constitute a future agenda which warrants urgent attention if policy advice is to be optimized.

- ***Leadership requires sustained commitment.*** LoI issues can be managed but never fully solved. Policy efforts by countries should be a routine part of overall education policy. Sustained commitment on the part of development partners, with the Bank seeking to set an example as a key partner, should likewise be part of overall efforts to improve learning.

Part 1 addresses why we should care about LoI issues and the major challenges involved. Its four sections are entitled: (i) why should we care? (ii) how big is the problem? (iii) the role of political economy; and (iv) diverse LoI contexts. Part 2 presents existing solutions (in section 5) and proposes a detailed way forward for the WB Education Global Practice (section 6). It should be noted that the paper does not claim to possess or propose a complete set of technical solutions for the myriad of difficult policy issues involved. By enhancing engagement and devoting adequate resources to the problem, existing solutions will be deployed, and new solutions devised. Increased partnership and knowledge sharing will be part of this, as will be the testing of innovative approaches. The new approach will involve learning at the individual and institutional level, with an intensity of engagement commensurate with the urgency of the issue.

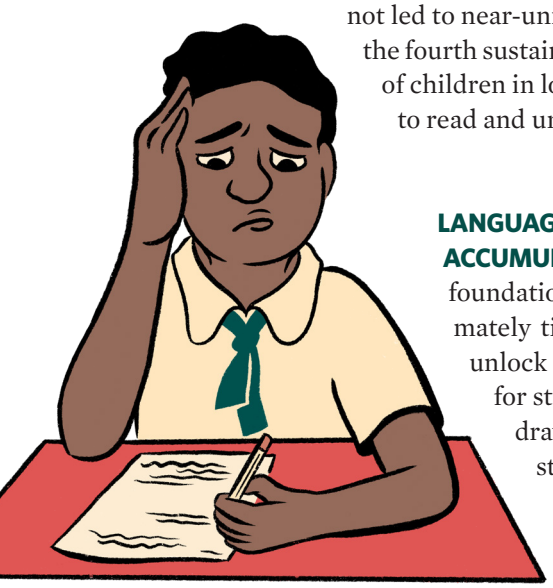
PART 1:
Why should we care about this problem and what characterizes it?

SECTION 1:

Why should we care?

HUMAN CAPITAL ACCUMULATION IS THE KEY TO DEVELOPMENT. The World Bank understands human development as the very center of economic and social development. Decades of research have confirmed that education and health are the keys to poverty reduction and the promotion of prosperity, for individuals and for societies. Creating conditions whereby people can invest in themselves, and governments and families can invest in children's futures, is a pillar of World Bank policy. The Human Capital Project and the Human Capital Index create a systematic approach to promote investments in people, and understanding of what works in this domain. The Learning Target—the goal of halving Learning Poverty—brings focus to the key role of foundational learning in facilitating lifelong investment of people in themselves and governments in people. Education and learning are the main investments. The themes and activities of the Bank's Education Global Practice are chosen and organized to maximize human capital accumulation for human development.

THE GLOBAL LEARNING CRISIS IMPEDES HUMAN CAPITAL ACCUMULATION AND PROSPERITY. *The WDR 2018: Learning to Realize Education's Promise*, reports that millions of children are struggling to learn in school.[10] Near-universal enrollment in primary education has not led to near-universal learning.[11] Projections show that, at current rates of improvement, the fourth sustainable development goal (SDG 4) will not be achieved.[12] Fifty-three percent of children in low- and middle-income countries are trapped in Learning Poverty: unable to read and understand a simple text by age 10.[13]



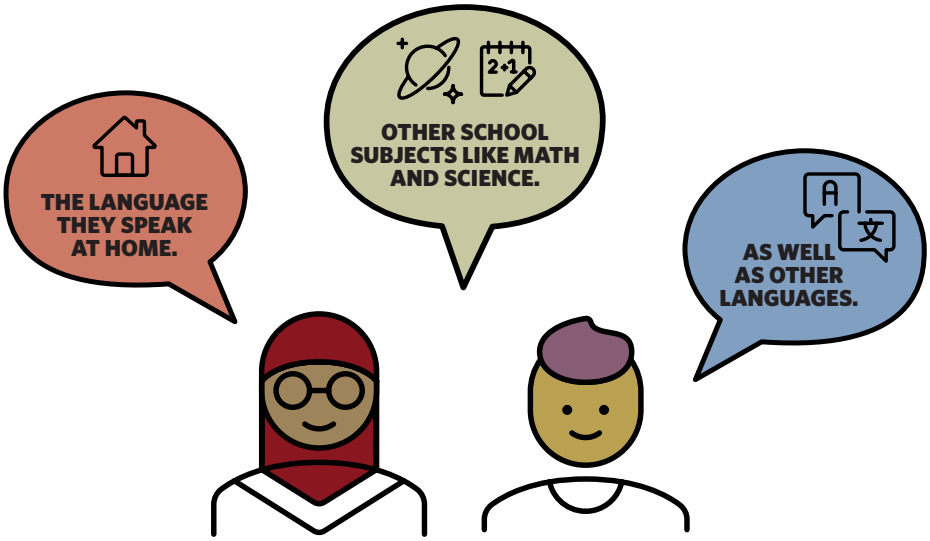
LANGUAGE IS ESSENTIAL TO LEARNING, SCHOOLING, AND HUMAN CAPITAL ACCUMULATION. Instruction unfolds through language—written and spoken—in foundational learning and core academic subjects. Almost all schooling is intimately tied to language. Teachers carefully select words and themes in ways to unlock or transmit the meaning of the words and the concepts that underlie them for students. Some school subjects, like physical education, art, and music, may draw less on verbal tools, but students cannot participate if they do not understand the language used to support instruction. In some school settings, reading, writing, listening, and speaking with understanding and competence amount to the main or only requirement for students. A first essential task of school is to have children gain command of written

language, through reading and writing. Those who fail to do this by age 10 are unlikely to succeed in school without intensive remediation. Choosing the right LoI is an exceptionally important undertaking. The right choice is the language that allows students to successfully begin their school careers.

GOOD LOI POLICIES MANDATE THE USE OF STUDENTS' L1 FIRST. The essence of good LoI policy is to provide instruction in a language that students best speak and understand—their L1—from their participation in ECEC services through roughly their first eight years of school. A second language can be taught too, as a foreign language at first. Gradually, if students master the basics of literacy in their L1, a second language can become the medium of instruction, with L1 learning continuing in some form through 12th grade. Voluminous research supports this practice.[14] Providing instruction in this way allows students to link the new concepts they learn in school to words they already know and thereby affirms a bedrock principle of cognitive science: that new knowledge builds on existing

CHILDREN SHOULD BE TAUGHT IN A LANGUAGE THEY UNDERSTAND.

When children learn in a language they understand, children have a greater chance of learning:



While promoting the development of general cognitive abilities.

knowledge. Conversely, when children are expected to acquire language abilities and simultaneously master new concepts via those abilities, they struggle. Using an L1 for foundational learning is consistent with the science of learning. It promotes the variety of benefits discussed below. When children are sequentially taught two languages through appropriate, high-quality LoI policies, they achieve higher aggregate learning in both languages.[15]

LEARNING FIRST IN AN L1 IMPROVES FOUR TYPES OF LEARNING OUTCOMES. Literacy (speaking, listening, reading, and writing) is typically the dominant subject and key learning task in primary school. Becoming literate in an L1 at the start of ECEC and primary school promotes the improvement of three types of learning outcomes and general cognitive abilities.

- ***It promotes better learning outcomes in the L1.*** Box 1 summarizes evidence from numerous studies from a range of regions, contexts, ages, languages, income levels of countries, and lan-

BOX 1: A Wealth of Evidence for a Variety of Positive Outcomes from Teaching in L1

Impact on Literacy Skills: Evidence suggests that children who are taught in a language that is not their L1 perform significantly worse than their peers. A study across 48 countries found that students who did not speak the language of the test before starting school had much lower average achievement on PIRLS 2011 (479 versus 516). In South Africa, SACMEC data from 2005 shows an even larger difference (37 percentage points between students who use their L1 versus those studying in an L2). Other studies show similar results across a diverse set of countries. However, mother-tongue based multilingual programs (MTB-MLE), which start in an L1 and later introduce an L2, can remedy these gaps. In Mali's pédagogie convergente program, children who began their schooling in their L1 scored 32% higher on French proficiency tests at the end of primary school than those in French-only programs. Similarly, a recent study of Somali MTB-MLE in Swedish schools found that participation in MTB education contributed positively to participants' results on Somali reading comprehension, and these results were associated with higher results in Swedish reading comprehension.

Impact on Mathematics: MTB-MLE instruction has positive effects on student performance across curricular areas, including mathematics. An experiment in Cameroon that provided a treatment group of schools with MTB-MLE instruction during the first three years of schooling found that these students exhibited gains in both English and mathematics of 1.1 to 1.4 of a standard deviation in grades 1 and 3 as compared to control students. A study in Peru found that indigenous Quechua children who attended Quechua-medium schools scored 0.54 standard deviations higher in mathematics than indigenous children who attended Spanish-medium schools, even after controlling for variables such as school resources. By contrast, evidence from TIMMS 2007 shows that the mathematics scores of students who 'never' (368) or 'sometimes' (438) spoke the language of the test at home were lower than those who 'always or almost always' spoke the language at home (483).

Impact on other Educational Outcomes: Beyond academic achievement, L1 instruction has effects on other aspects of schooling, such as attendance and overall attainment. A study of a 1994 Ethiopian policy change that introduced mother-tongue instruction to the largest ethnic group in the country found that the policy led to an increase of 0.75 to one year of primary schooling in the affected cohort, and increased the percentage of students completing six or more years of schooling by 31 percent. Similarly, a study of 23 countries representing 153 linguistic groups found that when MTB instruction is available at half or more of the schools frequented by members of a linguistic group, the proportion of out-of-school children is 10 percent lower than in groups for which MTB instruction is not available.

Sources: Mullis, Martin, Foy, Drucker 2012; Bühmann and Trudell, 2008; Ganuza & Hedman, 2019; Hynsjö & Damon, 2015; Martin, Mullis and Foy 2008; Ramachandran 2012; Smits, Huisman & Kruijff, 2008

guage characteristics. Evidence is from randomized control trials (RCTs), international large-scale assessments (ILSAs), and national learning student assessments (NLSAs), and published project reports, among other sources. Findings consistently show large effects, with effect sizes of one-third to one-half a standard deviation being common. Brown's (2011) findings were typical: students in Uganda taught in their L1 identified 20 letters per minute and read seven words per minute versus six letters and one word per minute respectively for the students in the control group taught in an L2. Other studies show similar massive and consequential differences in learning outcomes.

- ***It promotes higher learning outcomes in a subsequent L2.*** Students who become proficient first in their L1 have a greater ability to subsequently learn an L2, especially when the L2 is introduced

at the right time. Goldenberg's (2008) meta-analysis of evidence from high-income countries is matched by growing numbers of studies from low- and middle-income countries; in South Africa, Taylor and von Fintel (2016) considered more than 9,000 primary schools and 800,000 student records. They found that "MTB-MLE instruction in the early grades significantly improves English as measured in grades 4, 5, and 6."

- ***It promotes learning in other academic subjects***—such as mathematics, science and history/social studies. Seid's 2019 findings from the Young Lives Ethiopia School Survey found that "Learning in mother tongue first (in grades 1-4) increases students' mathematics and literacy test scores later after they transition to English instruction (in grade 5) by 0.269 and 0.089 standard deviations respectively"; (cited in Evans and Acosta 2020).
- ***It promotes the development of general cognitive abilities***. Students who are taught in their L1 until at least grade 5 (around age 10–11) develop their cognitive abilities to a threshold that is not generally reached by students who begin school in an L2. Multiple studies conducted by Collier and Thomas from 1997 to 2014 and replicated by other researchers (especially Lindholm and Leary, 2004) provide consistent evidence for this effect. Trudell and Piper (2014) provide evidence for this effect from developing country settings.

L1 instruction is the ultimate student-centered pedagogical practice, as it strengthens teacher-student interactions and it allows teachers to build on students' prior knowledge.

GOOD LOI POLICIES PROMOTE ACCESS AND RETENTION. A growing body of evidence shows that children who are taught in their L1 first stay in school longer than those taught in an L2. Laitin et al. (2019) found that students in Cameroon taught in their L1 were 22 percent more likely to be in school in grade 3, and 14 percent more likely to still be in school in grade 5. Seid (2017) found MTB-MLE in Ethiopia increases the likelihood of enrollment in primary school and of attending the right "grade for age." Ramachandran (2017) similarly found L1 instruction in the early grades leads to an additional half year of completed schooling and a five percent increase in the chance of finishing primary school. Positive impact on enrollment and retention is particularly important, as an estimated 54 million out-of-school children (or 72 percent of the total out-of-school population) live in countries with high linguistic diversity.[16]

GOOD LOI POLICIES PROMOTE EQUITY AND INCLUSION. USAID's "Planning for Language Use in Education" handbook cites multiple research studies confirming that (a) language of instruction issues negatively affect students from lower socioeconomic status backgrounds more than their higher-income peers; and (b) gender equity is promoted by initial L1 education, as its positive effects in the classroom are at least as likely to benefit girls and help overcome some of the bias-related educational challenges they face (USAID 2015). Good LoI policies also allow parents in difficult socioeconomic circumstances to participate more fully in their children's schooling.

L1 TEACHING ALLOWS FOR USE OF EFFECTIVE STUDENT-CENTERED PEDAGOGY. L1 instruction may be the ultimate student-centered pedagogical practice. The use of L1 strengthens the student–teacher interactions which are responsible for a large share of student learning[17] and it allows teachers to build on students' prior knowledge—language skills and background knowledge acquired outside school—as the foundation for new concepts. The sound-based symbols of written language are arbitrary (see Sapolsky 2013) in whatever language they are found—the symbol "B" for instance has no inherent connection to the first sound in the word "basket". Students must learn to match abstract

symbols to the *sounds of words they know*. After some reasonable repetition, most students fully master these alphabetic tasks. If children are asked to map symbols to sounds in words they do not know (and therefore may not be able to disentangle phonemically, or even hear), this becomes the ultimate exercise in arbitrary memorization. Indeed, there are few purely pictographic languages, but where sounds do not correlate to symbols, reading progress is slower. Countries have invented sound-based alternatives, such as pinyin for Chinese, to make the initial stages of learning to read easier. It is hardly surprising that in contexts where mapping is merely an exercise in arbitrary memorization, 98 out of 100 students can barely recognize any written words by the end of third grade. When teachers teach in a language that students do not understand, the teaching of basic letter/sound relationships is impossible, as is the kind of broader class discussion that might otherwise facilitate it. By contrast, when they teach through the medium of a language that their students know, teachers can reduce the use of "chalk and talk" instruction that largely consists of copying and memorizing. Instead, then can deploy a range of more effective strategies, including question and answer exchanges, wider discussion, and small group activities.[18,19]

GOOD LOI POLICIES PROMOTE EFFICIENT AND COST-EFFECTIVE PROVISION OF EDUCATION. The evidence cited above attests indirectly to the efficiency gains and improved cost-effectiveness of education using good LoI policies. Other studies have measured costs and confirmed not only that MTB-MLE is highly cost-effective, but that its costs are consistently lower than most policy makers and other stakeholders believe them to be. In Guatemala, Patrinos and Velez (2009) found cost-savings equivalent to USD five million per year from lower dropout and repetition rates in a program providing bilingual education to over 100,000 students. Grin (2005, cited in Heugh 2011) analyzed several models of provision of MTB-MLE and concluded that there would be: (a) saving in financial outlays due to efficiency gains in teacher training and instructional delivery and, (b) long-term benefits from lower repetition and dropout, plus increased human capital accumulation and use for the skills of graduates.

THE TARGET OF REDUCING LEARNING POVERTY BY HALF IS FOR READING IN L1. The Literacy Policy Package that accompanies this World Bank operational target calls for students to be taught in the language they best speak and understand. Achieving the Learning Target requires the type of acceleration in progress that is associated with L1 instruction. Countries may wish to have graduates who can read, write, speak, and listen equally well in two or more languages; teaching in L1 first for all of primary school and part of lower secondary school (while providing L2 "as a foreign language" instruction) is the most promising way to achieve the needed progress.

GOOD LOI POLICIES INCREASE THE EFFICIENCY OF OTHER EDUCATION INVESTMENTS. Grin (2005) estimated the external and internal efficiency gains likely to result from improved LoI policies. Improved efficiency of teacher training contributes to overall internal efficiency gains through its potential to lower direct cost and raise effectiveness. Instruction by teachers trained in a language they speak and understand is synonymous with effective planning and delivery of instruction. There is also the likelihood of complementary improvements when LoI is integrated into an overall education strategy—and the danger of failure if it is left out. Interventions and investments that combine appropriate approaches to LoI with strong instructional programs will have higher impact than improvements in instruction alone. Teacher training and coaching, classroom observation, early childhood development, and other programs exert more impact when conducted in languages children know. By contrast, investments in activities such as teacher training, classroom observation, and structured lesson plans could suffer a comprehensive "O-ring" failure (Kremer 1993) when conducted in a language that students and teachers do not know: what would otherwise have succeeded in the right language is bound to fail in an L2.

BOX 2: Teaching in L1: A Core Element of the Literacy Policy Package

The Literacy Policy Package (LPP) identifies five core elements for helping students become literate, and start on the path to becoming advanced readers: (i) a political commitment to clear goals for making all students literate; (ii) effective instruction by supported teachers; (iii) adequate teaching and learning materials, including at least one teacher's guide per teacher, one textbook per child and additional reading books for practice; (iv) instruction in a language that the student speaks and understands; and (v) promotion of love of reading.

The elements of the LPP reinforce one another; each makes the others more effective. Clear goals facilitate effective lesson planning and teaching; adequate teaching and learning materials promote efficient use of class time and student practice; love of reading drives students to use early foundational skills to read with pleasure, and read to learn.

Using the student's L1 is the foundation for effective instruction. Instructional goals become more attainable, teaching becomes more effective, textbooks and other TLM can be used effectively. The WBG's new approach to LoI issues is consistent with and promotes the implementation of the Literacy Policy Package.

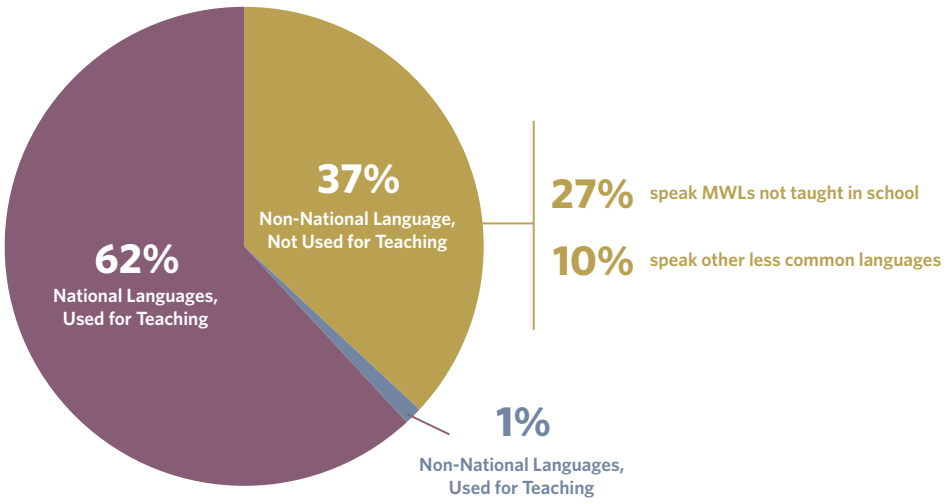
CONTINUOUS ENGAGEMENT WITH LOI IS ESSENTIAL TO THE BANK'S OVERALL EDUCATION APPROACH. The Education Global Practice regards foundational learning as the indispensable cornerstone of an individual's educational success, and, by extension, the underpinning of entire education systems. This represents an evolution from earlier approaches, which paid scant attention to foundational learning or LoI issues. With task teams having to engage with LoI issues as a way of improving foundational learning, a need has arisen for an approach to LoI issues that can help strengthen, sustain, and increase these efforts for greater impact. The Bank's current goals—and more importantly the goals of students, parents, and families in client countries—are best achieved if significant and sustained attention to LoI issues is fully integrated into World Bank education policy.

SECTION 2:

How big is the problem?

IN LOW- AND MIDDLE-INCOME COUNTRIES, AN ESTIMATED 37 PERCENT OF CHILDREN LEARN IN A LANGUAGE OTHER THAN THEIR L1. In some countries, more than 90 percent of children learn in a language that is not their L1. UNESCO (2016) states that "globally, close to 40 percent" of children are learning in a language that is not their L1. An original estimation done for this paper of the figure for low- and middle-income countries (LMICs) finds a very similar figure: 37 percent of all students are taught in a language other than their L1. In absolute numbers, this means that of about 1 billion students in LMICs, 370 million are not being taught in the language they best speak and understand. Unsurprisingly, the figure is more than half of the overall headcount of the roughly 550 million children in Learning Poverty.

FIGURE 1: Share of Students in Low- and Middle-income countries by Type of Language Spoken



MINORITY WRITTEN LANGUAGES: LANGUAGES SPOKEN BY LARGE LINGUISTIC MINORITIES. Policy makers have expressed concern about the cost and difficulty of providing L1 instruction for every child, given the great diversity of languages spoken in the world. This may be true for some small, unwritten languages, where orthographies need to be developed before they can be used for instruction. However, this dialogue has not been informed by data on the number of languages, numbers of speakers, and corresponding orthographies. To overcome this, the concept of a "Minority Written Language" (MWL) was defined as a language that (i) currently has more than 1.5 million speakers; (ii) is written (has an existing orthography); and (iii) is not the official, national, or dominant language of the country in question. Since, globally, one in six people is a school-aged student (1.3 billion of the world's 7.8 billion people), we can expect that any language spoken by 1.5 million people will be spoken by at least 250,000 school-aged children (or more—given the demographic age profiles of many LMICs). For each MWL in which instruction is offered, at least one-quarter of a million students would potentially be reached in their L1.

MANY CHILDREN SPEAK A RELATIVELY SMALL NUMBER OF UNTAUGHT L1S. The figure of 37 percent mentioned above divides into twenty-seven percent (27 percent) who speak a minority-written language (MWL) and 10 percent who speak a less common language. The 10 percent represent a "long tail" of many languages, each with relatively few speakers. The 27 percent share, by contrast, represents a large group of students who speak about 237 languages, or only three percent of the 8,789 languages spoken in these countries. (This figure of 8,789 is arrived at by deliberately counting each language once for every country where it is spoken, hence the total of 7,117 known languages is exceeded.) Teaching this 27 percent of students in this three percent of all languages requires significantly less effort than reaching the entire 37 percent. The analysis confirms a "90/10 rule" whereby 90 percent of students speak either the national (dominant) language or a common, widely spoken and written L1. Globally, teaching in an additional 220 languages could serve the needs of approximately 270 million students. Although such an expansion of instruction shouldnot be portrayed as a trivial undertaking, it would demonstrate the relatively easy gains on offer: the "low hanging fruit" presented by a modest augmentation of languages taught.

TEN PERCENT OF STUDENTS IN LOW- AND MIDDLE-INCOME COUNTRIES (LMICS) SPEAK A LANGUAGE IN THE "LONG TAIL" OF MANY LANGUAGES WITH RELATIVELY FEW SPEAKERS. Those not included in either national L1s or MWLs are less than 10 percent of the population of LMICs. This group is composed of fewer than 100 million students who may any one of more than 6,000 languages that are not national L1's or MWLs. The student population in this group is likely to be even smaller than this estimate, however, as this count includes endangered languages that are very rarely effectively spoken or learned by young people. The value of these languages and the associated cultural capital they represent is unquestioned. However, as countries pursue the goal of providing equitable education for all children, when national programs cannot cover all languages in the short- or even medium-term, consideration of language coverage and costs may factor into choices. Flexible, context-specific strategies must be developed for children speaking demographically very small languages. In many cases, when these children come to school, they are bilingual in a small language and a larger language used across communities. In those cases, the larger language can be effectively used for instruction. In other cases, community teaching aides and materials may be needed to support children in learning foundational learning skills before an appropriate L2 is introduced.

WHAT WOULD IT TAKE TO REACH MORE THAN 80 PERCENT OF L1 SPEAKERS IN ALL LOW- AND MIDDLE-INCOME COUNTRIES? The analysis above yields a total of 220 languages by counting each individual additional language only once, even if it is a potential L1 LoI in more than one country. Two or more countries developing learning materials in the same language

could, in theory, partially share or collaborate in the creation of curricula and teaching and learning materials. In practice, this type of beneficial sharing would not drastically reduce the financial and time costs associated with curriculum and language program creation. If each country's languages are counted individually, instruction in a total of an additional 559 languages (or "country-languages") would be needed to reach 84 percent of students in each country in their L1. Thus if Hausa, for example, is an L1 for both Niger and Nigeria, in this estimate it is counted twice. Although this number is significantly above the 220/3% estimate, one sees that teaching in 12 percent of the world's languages reaches five-sixths-fifths of learners.

TABLE 1: National (Official) versus "Minority Written" Languages in WB Client Countries[1]

	National (Official) LANGUAGE				"Minority Written" Languages			
	POP.[2]	POP. FOR WHOM NATIONAL LANG = L1	POP. WHO SPEAK AN MWL[1]	MWL SPEAKERS AS A SHARE OF TOTAL POPULATION	TOTAL # OF LANGS.	TOTAL # OF MWLS	MWLS AS SHARE OF ALL LANG.	AVERAGE # SPEAKERS PER MWL (MILLIONS)
EAP	2,148	1,359	653	30%	3224	56	2%	11.7
ECA	690	603	32	5%	706	5	1%	6.5
LAC	620	580	14	2%	1058	6	1%	2.4
MNA	414	55	316	76%	55	39	12%	8.1
SA	1,694	1,192	400	24%	757	53	7%	7.5
SSA-Central	309	66	182	59%	1158	22	2%	8.3
SSA-East	324	67	155	48%	636	41	6%	3.8
SSA-West	175	26	59	34%	944	15	2%	3.9
WB Client Countries	6,371	3,947	1,811	28%	8,798	237	3%	7.6

[1]Source: Estimations based on 2020 Ethnologue data – total number of languages exceeds 7,117 from double-counting the same language used in more than one country (i.e., Spanish counted once per Spanish-speaking country in the 8,798 figure but only once in the 7,117 figure.)

[2] Counts shown in millions

[3]17 of these languages are currently used as official LoI; 237-17 = 220 untaught MWLs.

MOST LEARNING POVERTY IS IN LANGUAGES THAT TOGETHER USE ONLY A FEW WRITING SYSTEMS. One should consider not only the number of languages but also the number of writing systems required for instruction, since foundational literacy involves mastery of the use of written language. The congruence between languages and their writing systems varies. Few languages are purely either sound- or symbol/image-based, and a small number of alphabets are very widely used. Among alphabetic languages, some more easily ("transparently") represent the sounds of the spoken

language. Learning to "decode" in these language/writing system pairs generally takes less time and effort than for language/writing system pairs where the sound-symbol relationships are less straightforward. English is an example of a language that takes longer to learn. Languages whose current writing systems have been developed or adopted more recently, and/or whose , orthographies may have been developed by linguists for ease of use, will often have greater sound-symbol alignment and be highly transparent. This is the case for many languages in sub-Saharan Africa. The preliminary analysis conducted for this paper shows that: (i) Learning Poverty is concentrated in languages that use a small number of writing systems; and (ii) alphabetic languages are very heavily represented, with 50 percent of Learning Poverty in languages written with an alphabet derived from Latin alphabet. This issue is important as approaches to foundational learning are affected by language difficulty and the relative complexity of the language/writing system combination. Countries that teach multiple L1s and countries that teach L1s and an L2 with a simpler writing system like those with Latin-derived alphabets—with its 23 letters[20] —may be able to standardize certain aspects of orthography and grammatical conventions across languages. This makes it easier for children to learn L2s, provided that instruction explicitly teaches the similarities and differences between languages.

LEARNING POVERTY IS CONCENTRATED IN LANGUAGES USING NO MORE THAN 14 WRITING SYSTEMS. The 20 countries with the highest percentages of students in Learning Poverty use only three writing systems: Latin, Arabic, and Ethiopic. Consideration of absolute numbers of students in Learning poverty involves more writing systems, but still a relatively small total number: the 20 countries with the highest Learning Poverty by headcount use a total of 14 writing systems. Of these, 12 are alphabetic and more than half are used in. India, which uses eight writing systems to write widely spoken regional languages. China's two widely used writing systems (Bopomofo and Han) are both non-alphabetic. Developing tools for instruction in additional languages can concentrate on a small number of writing systems and a small share of the world's languages.

MORE AND BETTER EMPIRICAL MEASURES OF THE PROBLEM ARE NEEDED. The analyses presented above are preliminary, but they demonstrate that: (a) at the global level, coverage of L1 speakers can be vastly increased with a relatively modest increase in the number of LoI; and (b) quantification of the problem with at least first-order estimates is possible. This work must be done at the country level.

QUANTIFYING THE PROBLEMS BRINGS MULTIPLE ADVANTAGES. First, governments and development partners, including the World Bank, have known that LoI is "an issue" but have generally not known how significant an issue it is or what it would take to make progress in solving it. These estimates allow for better dialogue. Second, as data are improved, the relationships between Learning Poverty and language diversity and proficiency can be analyzed and investigated. Third, other actors, potentially including private developers of teaching and learning materials and education technologies, can access information about potential investment opportunities.

REALITY CHECK: MULTIPLE PERMUTATIONS OF LANGUAGES, PROFICIENCY LEVELS, AND USE. These initial analyses tend to paint the differences among language speakers as uniform and even binary. For example: this student speaks an L1 but not an L2. In fact, students often fall somewhere along a continuum of proficiency levels for their L1 and any other languages spoken. Policies should pay special attention to where proficiency differences are greatest between L1s and LoI for both students and teachers, as learning outcomes are at the highest risk in these situations.

SECTION 3:

Political, economic, and sociological considerations influence language choices

LANGUAGE POLICIES ARE SHAPED BY HISTORY AND SERVE POLITICAL AND ECONOMIC GOALS. LoI policies are related to national language policies. These are influenced in turn by history and by political and economic goals such as political identity, cultural identity, economic modernization and integration into global trading communities. National language policies routinely seek to facilitate communication among all citizens. Some languages are part of regional or global communities such as "la francophonie." These goals can be contentious. Their ends may be in direct conflict with education policies that promote equitable learning. Attempting to create or preserve national unity through a common language of communication may confer advantages to speakers of the chosen language while linguistic minorities must learn a new language. Using an official language that is only spoken by a small number of citizens may preserve the advantages of the elite. Governments have also used language policies and LoI policies to signal a break with past political groups, eras, and practices.

POLITICAL LEADERS HAVE USED LANGUAGE POLICY TO BUILD NATIONAL UNITY. Languages can define cultural identity and create communities. For some countries, national identity, a common language, and a common culture and heritage are synonymous. The original source of linguistic unity may be in the remote past. The language may have been imposed as a result of a long-forgotten military conquest, a period of colonialism, or as the result of one linguistic group gaining hegemony within national territory. Nonetheless, citizens see themselves as Italians, Armenians, Koreans, or Russians because they speak that national language. In other cases, the efforts to create this unity are more explicit and deliberate. When Tanzania gained independence, Julius Nyerere promoted Kiswahili to increase communication among citizens who spoke more than 100 indigenous languages. He linked it to social and cultural policies under the banner of "ujamaa." The connection of Kiswahili to Pan-Africanism helped consolidate its position beyond Tanzania's borders. Singapore's leaders balanced pragmatism in communications with cultural policies that have sought to recognize the linguistic heritage of its main ethnic groups, and promote the continued use of several L1s. Canada's Constitutional Act of 1867 defines French and English as its official languages, but it was not until 1969 that it became a bilingual country where all public services and education would be made available in both languages. In some cases, the struggle for national unity is conflictual, and languages may be imposed by force through internal or external strife and subjugation. Linguistic minorities are often marginalized socially, economically, and politically.[21] Metropolitan prestige languages often exclude linguistic communities, even when these constitute the large majority of citizens. In Haiti, for example, a small French-speaking elite based primarily in the capital controls social, economic and political oppor-

tunity. Meanwhile, Haitian Creole is spoken by more than 99 percent of Haitians, but it has been a struggle to have it used for education.

PARTICULAR CONTEXTS MAY FAVOR THE INTRODUCTION OF IMPROVED LOI POLICIES. The links between language and history, politics and conflict do not prevent policy discussions on LoI. Experienced observers have identified four contextual conditions that may increase the likelihood of adoption of sound LoI policies. Box 3 outlines these and provides examples of countries that have successfully introduced and implemented improved LoI policies.[22]

BOX 3: Enabling Contexts and Conditions for Adoption and Implementation of Education Language policies

LoI policy, regardless of its content, thrives when the following criteria are met:

1. It is seen as reflecting a new national direction (e.g. post-revolution policy), and/or
2. The national policy reflects a stronger commitment to national identity.
3. The state is stable and strong enough to resource and align other policies to support it.
4. Local appropriation of language policy aligns with national policy, even if it is not enforced.

Examples:

Ethiopia's post-revolution constitutional support for the development and use of all Ethiopian languages, instead of only Amharic (the language of Ethiopia's dominant ethnic community for generations before). Criteria met: 1, 2, 3, to some extent 4.

Eritrea's policy statement of 1991, reflecting its new independence from Ethiopia, supporting the use of all nine Eritrean languages as languages of instruction as a fundamental democratic right. At least seven of those languages are currently in use in Eritrean classrooms. Criteria met: 1, 2, 3, 4.

South Africa's post-apartheid policy includes 11 languages of instruction. The list includes English and Afrikaans, as well as nine additional South African languages, indicating the government's determination to provide opportunity for all. Criteria met: 1, 2, 3, 4.

Rwanda's move away from French towards English in the education system, beginning after the genocide and change of regime in the early 1990s. Kinyarwanda, the first language of more than 90 percent of the population, has been included as part of this evolution in language policy. However, the recent policy change from Kinyarwanda-plus-English to 100 percent English-medium instruction demonstrates how policy changes may advance or retard the cause of L1 instruction for all through at least the end of primary school. Criteria met: 1, 2, 3.

PERCEIVED OR REAL ECONOMIC VALUE OF LANGUAGE PROFICIENCY SHAPES POLICIES AND POLITICS. Language policies reflect economic aspirations. Economists have shed light on the economic value of different languages as well as the real and perceived effects of linguistic attributes on earnings.[23] These are intrinsically linked to language preferences and policy decisions. Countries want to take advantage of global trade and economic integration, and therefore seek to build skills in

international *linguae francae*. An international language, used for commerce and diplomacy, may acquire or retain status because of perceived high value outside the economic sphere.[24] A study of the economics of language has documented the labor market value of language abilities in a variety of contexts.[25] A persistent empirical finding is the disadvantage of being in a linguistic minority or failing to speak and understand the dominant language.[26] Explanations of wage premia include factors directly related to productivity such as communication costs and language-mediated access to networks as well as factors such as discrimination. The literature on the economic value of language pertains to their use by adults in the labor market.

Especially in low resource contexts, children who start school in an L1 learn an L2 more effectively than students who start school in the L2.

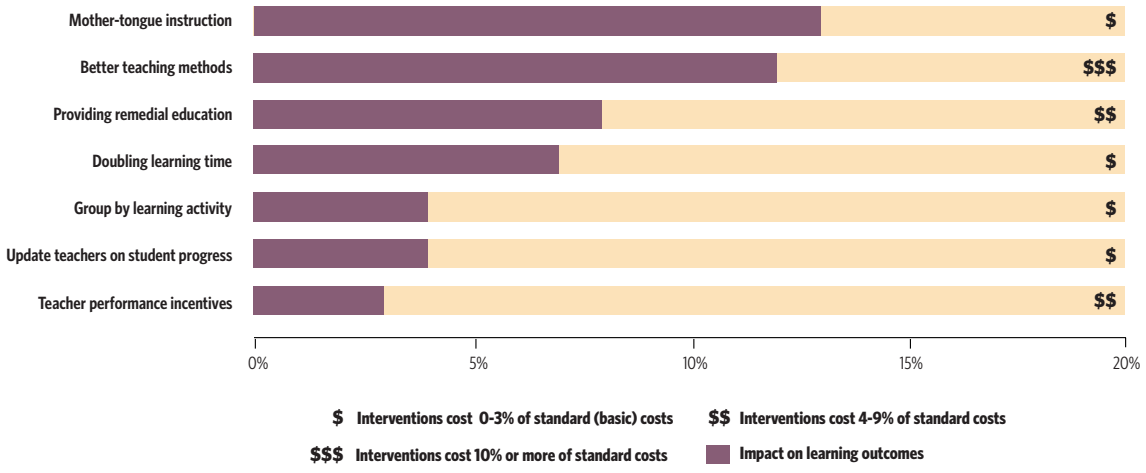
THE PERCEIVED VALUE OF L1 PROFICIENCY AND USE VARIES. In many contexts, speakers of an L1 take pride in their language and the culture and values they feel it represents. In others, biases against L1 instruction exist, often among a range of stakeholders: teachers, parents, community leaders, school authorities, and students.[27] In many countries, policies implemented during the colonial period and continued since independence have created and perpetuated an aversion to L1s and a preference for metropolitan, generally European, L2s as languages of education and government more broadly.[28] These historical considerations are often mixed with perceived labor market biases, especially in the formal economy.[29] A strong attachment to L1s by community stakeholders may be present alongside a preference for L2s in education. This becomes especially problematic when education policy is communicated as either L1 or L2 instruction, not the L1 and L2 additive bilingualism endorsed by evidence and this paper. Kalenjin-speaking parents in rural Kenya, for example, told researchers that L1 was "a distraction from learning".[30]

LABOR MARKET VALUE DOES NOT INDICATE THE BEST WAY TO ACQUIRE LANGUAGE PROFICIENCY. Especially in low resource contexts, children who start school in an L1 learn an L2 more effectively than students who start school in the L2. The perception of labor market value for specific languages in business, commerce, and administration strongly influences preferences with regard to school language among parents and policy makers. However, strong disconnects are common between a legitimate desire for schools to provide graduates with specific valuable language skills and the best means of structuring learning trajectories to arrive at this end point. Selection of an inefficient means of teaching languages—such as early use of an L2 as the medium of instruction for all school subjects—decreases the chances of a student ever obtaining the labor market premia. Policy makers are well served to separate goals for school language policies from the means for obtaining these goals. Other stakeholders, especially parents, should be well-informed that MTB-MLE provides the best path to their children becoming bilingual, preserving their L1 and becoming stronger speakers of the L2.

INCOMPLETE INFORMATION ABOUT THE COST-EFFECTIVENESS OF LOI POLICIES CREATES CONCERN. Many governments and development partners raise concerns about costs during LoI policy discussions.[31] However, estimates show that the cost of implementing appropriate LoI policies averages only four to five percent of additional expenditure in countries where an additional language is added.[32] At the same time, successfully implementing strong LoI policies tends to result in cost-saving benefits such as a decline in the repetition rate, a decline in the dropout rate, an increase in graduation rates, and better learning outcomes. These promote higher productivity and growth, which in turn generate higher tax revenue. Even under conservative assumptions, the value of the benefits (lower

costs and higher productivity) consistently exceeds the additional investment costs.[33] These identified benefits result in cost-savings not just in countries with a small number of languages, but also in linguistically diverse countries. For instance, in Mali, a World Bank study found that French-only programs cost about eight percent less per year than mother-tongue schooling, but the total cost of educating a student through the six-year primary cycle was about 27 percent *more*, largely because of the difference in repetition and dropout rates.[34] Studies looking at the provision of MTB-MLE in Guatemala, Senegal, and elsewhere confirm these conclusions.[35] Net benefits are positive even without including any valuations of considerations wholly external to the labor market such as the preservation of languages as living cultural assets.[36] Figure 2 compares the impacts and cost-effectiveness of different teaching interventions. Among them, MTB-MLE stands out as the one that yields the most learning gains per equivalent investment costs. For more information regarding the cost implications of MTB-MLE, refer to *Chapter 6 in Optimising Learning, Education and Publishing in Africa: The Language Factor*.[37]

FIGURE 2: Highly Effective Practices to Increase Access and Learning Outcomes



Source: Education Commission analysis (2016). Note: The improvements are calculated from a baseline of 50 percent (of enrollment, completion, or reaching learning targets) and measured as percentage points gained. The costs are estimated relative to average baseline costs—with average class size, materials, support, and salaries.

RATIONAL GOALS LEAD TO SEEMINGLY IRRATIONAL EDUCATION POLICIES FOR LOI. The high prevalence of LoI practices that ignore evidence of the effectiveness of L1 instruction point to a critical disconnect between the end goals of language policies and the means of achieving these goals. Reducing or eliminating this disconnect should be a main goal of national policies to issues of LoI. Examples abound of both negative and positive experiences. Whereas Box 3 presented some positive experiences, Box 4 presents the Rwandan case, which exemplifies the notion of rational goals leading to LoI decisions that go against the evidence (please see case study on Rwanda, Annex B). This paper recommends that governments: (a) clarify the goals of LoI policies; (b) review their past and current experience with LoI policies; (c) analyze their language landscape from technical and political perspectives; and (d) systematically plan and employ the most effective means for achieving high learning outcomes across school subjects.

BOX 4: Rwanda: A Changing Education System for a Changing Time

Rwanda has made impressive progress in education over the past few decades, having achieved a gross enrollment rate of over 100 percent and maintaining a low rate of out-of-school children. Learning, on the other hand, has not advanced at the same pace. While Rwanda has not yet participated in any international assessments, it implemented several Early Grade Reading Assessments (EGRAs) in Kinyarwanda. A 2011 EGRA found that only 32 percent of grade 4 students and 47 percent of grade 6 students could read and understand a grade 2 text. At the core of this learning crisis is the issue of language.

In Rwanda, Kinyarwanda is the national language, spoken by all ethnic groups. English is spoken by only 190,000 people in a population of nearly 13 million. Yet, for the past 25 years, Rwanda has consistently introduced reforms to LoI policies that have almost exclusively given priority to the use of English for instruction instead of Kinyarwanda beyond grade 3. The latest policy change came in December 2019, when the Government of Rwanda announced a new LoI policy, mandating the use of English as the primary language in all grades in basic education.

This shift can be explained by the pursuit of political and economic goals. The Government of Rwanda has ambitious economic goals for the future of the country, and a reliable education system is a key part of that plan. In 2007, Rwanda joined the East African Community. In 2009, Rwanda joined the Commonwealth. These factors, plus a decision to cease using the language associated with the country's Franco-Belgian colonial period,, provided a strong impetus to favor English.

Societal pressures have a role to play as well. With the goal of an increasingly globalized economy, Rwandan parents want their children to gain English proficiency. This push is driven by wealthier parents who can send their children to private schools better able to support English instruction. In both the short and the long term, children from poorer households bear more of the brunt of hasty decisions that prove difficult to implement.

Rwanda is an example of how political and economic goals requiring educated adults are often at odds with best practice to improve learning for young children. Achieving desired L2 proficiency by the end of basic education is best done through initial instruction in L1 in primary school for at least 5–7 years, accompanied by L2 "foreign language" instruction and a well-planned, skill-based transition to L2 instruction in secondary school. (Annex B considers the case of Rwanda in more detail).

THE COVID-19 PANDEMIC IS A CHANCE TO ADVANCE IMPROVED LOI POLICIES. The global COVID-19 pandemic will exacerbate the learning crisis and worsen inequality in education. School closures have affected almost all children worldwide. It is expected that Learning Poverty will rise 10 percentage points in LMICs (from 52 percent to 63 percent).[38] The combined shocks of school closures and the economic impact of the pandemic are expected to result in higher dropout rates. Adjustment requires schools and school systems to quickly develop or adapt new curricula for new modes of delivery, especially distance learning. Sound policy engagement can mitigate negative effects and allow countries to "build back better",[39] with evidence-based LoI policies and programming.

SECTION 4:

Language of instruction policy should be multifaceted

LOI POLICY CONTEXTS ARE NOT MONOLITHIC. Language, cultural and political contexts vary within and across countries. In formulating effective policy, there are several key factors to consider (see Table 2):

- ***Absolute number of languages spoken.*** Overall language diversity is first a function of the number of languages within national territory. Low- and middle-income countries (LMICs) span a spectrum from being monolingual to having several hundred languages. The sizes of language communities vary, as do the number of languages and dialects spoken in them and the range of proficiency levels.
- ***Number of major languages used in education.*** Countries may seek to have graduates of basic education who are proficient in several national languages. It is common for one of these to be an international or colonial language that may share few characteristics with local languages. A typical situation in Sub-Saharan Africa, for example, may include local L1s, a Language of Wider Communication (LWC—sometimes referred to as a *lingua franca*), an official language or languages, and various additional national or official languages.
- ***Education model for language instruction and schooling***. Countries may use "L2 only from the start of primary school (and even in ECEC)," which is the least effective model. Slightly, but only slightly more effective, are "early-exit" bilingual models, which provide a minimal amount of L1 instruction, often in parallel with L2 instruction. More effective for learning are models such as two-way (language learners and language-proficient students in the same classroom), dual language education, and late-exit models whereby language and academic content in other school subjects are taught in L1 first, then gradually in L2 under explicit transition plans that are informed by research.
- ***Numbers and distribution of students and teachers.*** Countries may not have enough teachers who are literate in L1s or they may not be posted appropriately around the country. Teachers in larger cities may be proficient in the official languages but lack L1 language skills for teaching. Teachers in rural areas may have the opposite skills, namely proficiency in L1s, but not in the official language.
- ***Homogeneity of speech communities.*** Rural communities may be characterized by a single widely spoken L1 or by

several. Geographically, the boundaries of speech communities may be sharply or weakly defined. Section 6 suggests the best ways to develop policies according to the number of languages spoken in a classroom, school, or school system.

- ***Proficiency levels of students and teachers.*** Since L2-only education leads to lower graduation rates, assessments of upper secondary or lower secondary students will understate the learning gaps between L1 and L2 speakers. L1 speakers who persist in school to upper grades will have better L1 and L2 abilities than a randomly chosen peer from their age cohort, due to more schooling and likely interaction effects associated with having remained in school.
- ***Similarity of languages, writing systems, or both.*** LoI policies will be affected by levels of similarity among languages in question. It must also be borne in mind that dialects can vary widely. In some cases, such as formal Arabic versus colloquial Arabic, the distinction is between versions (and registers) of a single language (Box 5). In other cases, languages may be closely related and share common word roots and mutually intelligible vocabulary (as do Spanish and Portuguese). At the other end of the spectrum, languages—even those found within the same country or community—may share very few characteristics. Similarity between languages and writing systems facilitates learning. Achieving bilingual proficiency is easier when languages and writing systems share characteristics. Overlapping sounds and symbols in L1 and L2 will shorten the instructional time required for proficiency in L2, if instruction is designed to facilitate bridging between languages.[40] In Kenya, studies found that reading skills in L1 (Gikuyu, Dholuo, and Kiswahili) and L2 (English) were strongly correlated.[41] Similar findings have been found in myriad other studies in low-, middle-, and high-income settings.[42]
- ***Ages of language learning. LoI policies need to be contextualized to reflect the languages children know when they start school.*** In some contexts, children are bilingual or even multilingual at a very young age. In other countries, children are monolingual until they leave home to go to school. In yet other countries, there are differences by gender due to differences in gender roles. Ages of language learning can also vary according to parental occupation, and other factors. When children first arrive in school, typically at age five or younger for ECEC and six or seven for primary school, their instruction needs to be in a language they speak at that time in their lives.
- ***Special considerations.*** Refugees and internally displaced school-age children require instruction in a language they speak and understand. Continuity with the LoI of their earlier schooling is ideal, but circumstances may not permit it. Language of instruction for learners with disabilities should also be considered. This may involve accessible learning materials, along with additional support, such as specialized staff, or community volunteers. For example, deaf children's language of instruction should be a sign language in which instruction may be offered. A multiplicity of other language-related considerations applies to those with learning difficulties and other communication challenges (but lies beyond the remit of this paper).

CONTEXTS AND CONSULTATIONS ARE ESSENTIAL TO POLICY FORMULATION AND IMPLEMENTATION. Since so many factors influence LoI policies, it is critically important for all involved to (a) understand the context; and (b) consult widely with stakeholders during policy development and implementation. Stakeholder consultations help policy makers understand the diversity of the language context and allow those most affected by policy to articulate their goals and concerns. Understanding and respecting diverse perspectives makes it more likely that LoI policies will align with stakeholders' goals, which in turn increases the likelihood of a policy's long-term acceptance and viability

TABLE 2: Factors for Consideration in Language of Instruction Policy Formulation and Implementation

		SINGLE/ MONO NO DIFFERENCES	DUAL BI, SMALL DIFFERENCE, LITTLE HETEROGENEITY	MULTIPLE /TRI OR MORE GREAT HETEROGENEITY
LANGUAGE	Number of languages spoken	1	2	More than 2
	Number of languages to be learned	1	2	More than 2
	Language education model	Mono-lingual +	Bilingual- dual + Duration? Language only or subjects?	Trilingual Duration? Language only or subjects?
DISTRIBUTION OF SPEAKERS	Distribution of speakers (learners)	Uniform	Geographically dispersed, but concentrated in communities of homogenous speakers	Diversity and numbers of languages spoken & heterogeneity in linguistic communities
	Distribution of teachers by target language skill	N/A	Matches distribution of speakers	Does not match number and distribution of speakers/ learners
PROFICIENCY	Proficiency levels of learners in target language	Little variation	Moderate variation within and across learner groups	High within and across learner groups (starting with no proficiency)
	Proficiency levels of teachers in target language	Little variation	Moderate variation within and across teaching groups	High within and across teacher groups (starting with no proficiency)
LANGUAGE CHARACTERISTICS	Diversity of language characteristics by language pairs	N/A or Dialect only	Similar Same language family	Very different Multiple language families
LEARNERS WITH DISABILITIES	Additional Considerations	N/A	FCV Refugee populations Marginalized groups Deaf children	Learners with disabilities in linguistic minorities

BOX 4: Mastering Arabic: The Transition from Colloquial to Formal

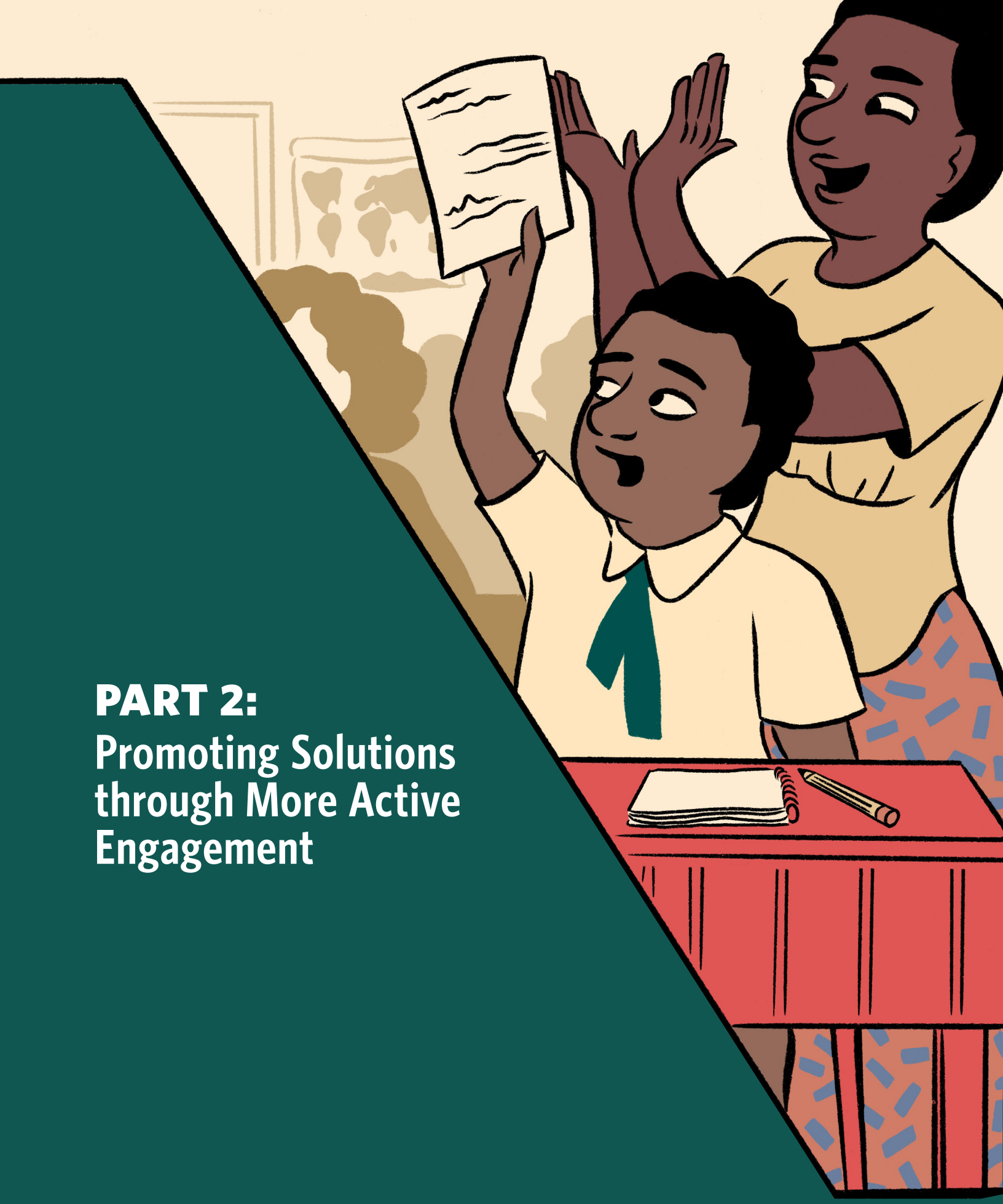
Arabic is spoken by more than 420 million people, making it the sixth most spoken language across the world. Arabic exists in a continuum of forms, from Classical Arabic—the language of the Qur'an—to the many informal, colloquial versions used in everyday communication. Modern Standard Arabic (MSA) lies near the formal end of the continuum, and is described by some linguists as a version that dates back to the 19th century, having dropped some words and phrases over the intervening decades, and added new technical vocabulary. MSA is the written form of Arabic that is used across Arabic-speaking countries in literature, official documentation, mass media, and educational institutions. However, MSA is not an L1; it is learned through formal education.

Formal Arabic (Classical or MSA) differs significantly from colloquial Arabic. There are many types of colloquial Arabic, including Iraqi, Gulf Arabic, Levantine, Yemeni, Sudanese, Egyptian, Maghrebi (North Africa excluding Egypt), and Hassaniya (mainly Mauritania) and even differences within some of these. The strictly formal version of Arabic has barely changed over time, unlike the rapid development of colloquial Arabic, resulting in widening gaps between the two.[43]

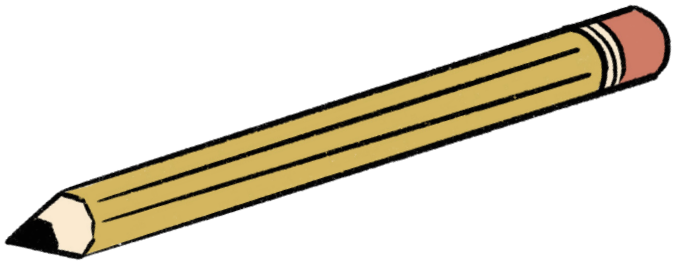
Children grow up hearing colloquial Arabic in their homes and communities, but are expected to learn to read and write in formal Arabic as soon as they enter school. Given that oral language proficiency is a prerequisite for reading acquisition, this results in delays in reading. Parents in Arabic-speaking countries are less likely to have children's books in the home and are less likely to read to their children when they are young than parents in other countries (See Annex D). This is a concern, as children transition more easily from their L1 colloquial to formal Arabic if they are exposed to children's literature.[44]

Low quality instructional materials and ineffective teaching methods make it difficult for children to learn formal Arabic. Teaching and learning materials in schools use MSA. Children are often taught to read and write in a rigid way, with a focus on grammar and accuracy and a lack of playfulness and inquiry.[45] Teachers correct children as they learn to read and write, while inventive or spontaneous engagement with words or spellings is considered inappropriate.[46] Likewise, phonics-based methods are rarely used as they rely on breaking words down and assessing using non-words. Teachers do however sometimes use colloquial Arabic to help to explain features of the formal Arabic language, but this tends to add a level of complication.[47] In fact, teachers are themselves frequently the products of poor Arabic language education, meaning they rarely have the knowledge and skills in formal Arabic to be comfortable using it as a medium of instruction. Furthermore, those training to become Arabic language teachers rarely experience the in-depth training they need on how to teach Arabic, with very few university teacher preparation courses in the region including Arabic pedagogy.

Teaching and learning approaches for Arabic have not enabled all students to reach their potential. Improving Arabic language teaching and learning would boost overall learning outcomes. This should include (1) encouraging parents to read to children from an early age to help develop vocabulary, (2) developing more, and more engaging, children's literature, (3) using evidence-based pedagogical methods in the early grades, and (4) devoting sufficient time within the curriculum to the development of Arabic language skills. (Annex D considers the case of Arabic in more detail).



PART 2:
Promoting Solutions through More Active Engagement



GREATER USE OF EXISTING SOLUTIONS AND MORE PROACTIVE ENGAGEMENT BY THE BANK. Although there are examples of excellent engagement with LoI issues within Bank teams, the Education Global Practice has too often found itself reacting to unhelpful LoI policy changes instead of engaging proactively. It is not unusual for the Bank to confront the LoI question with considerable verve in the wake of a client government's announcement of a new policy to make an (often international) L2 the official LoI for all of primary education. The Bank then coordinates development partners to marshal evidence illuminating the policy's shortcomings. But this is generally too late—the decision has been taken, and the government is already implementing the intended change. In other cases, the Bank simply omits analysis of LoI from lending or country dialogue. In practice, few impending projects have been slowed down for lack of a comprehensive LoI plan. This pattern of reactivity and neglect is clearly unsustainable: the Education Global Practice needs to work proactively on LoI policy, building on existing solutions. Section 5 reviews existing policy solutions and proposes ways to increase their use. Section 6 proposes a roadmap for the Bank to move from reactivity to proactivity and then to leadership on LoI in education.

BOX 6: Use Existing Resources to Accelerate Progress

Many development partners have worked on LoI policy and implementation. Familiarity with their policy discussions, use of their resources, and an analysis of lessons learned from the implementation history of their programs can accelerate reading progress for children in World Bank Group client countries. A great many organizations and initiatives have produced policy documents, programing guidance, teaching and learning materials, and assessments in hundreds of languages. Below are some suggested resources:

USAID – USAID has focused intensively on early grade reading since 2011, with programs in more than 40 countries. Most produced student books, teacher's guides, and supplementary materials, often in multiple languages. These materials can be accessed through USAID in many World Bank client countries. Storybooks are also often available through the Global Digital Library[48] and other digital platforms. Other resources include research reports on language topics and language maps.

BOX 6: Use Existing Resources to Accelerate Progress cont.

The Global Reading Network (GRN) – The GRN is hosted on USAID's Leading Through Learning Global Platform. Many GRN-hosted resources[49] support work on LoI policy and programing, including the Handbook on Language of Instruction Issues in Reading Programs (Pflepsen 2019).

The Global Book Alliance (GBA) – The GBA is a partnership of donor agencies, multilateral institutions, and civil society organizations committed to bringing books to every child in the world by 2030. Its initiatives include the Global Digital Library, tools for analysis of the book supply chain in a given country, support for publishers, and Begin with Books, a program to create thousands of open source books in underserved spoken and signed languages.[50] The GBA also hosts extensive resources on the book supply chain, copyright and licensing, and other key topics.

Eddata II – Eddata (funded by USAID and implemented by RTI International) produced the Early Grade Reading Assessment (EGRA), the Early Grade Math Assessment (EGMA), conducted the assessments around the world in multiple languages, and produced other important research, such as the Survey of Children's Reading Materials in Eleven African Languages (RTI 2016).[51]

SIL International – SIL has developed a host of resources to support LoI issues.[52] These include Good Answers to Tough Questions in MTB-MLE (Trudell and Young, Eds. 2016) and the MTB-MLE Resource Guide (Malone 2018). SIL also runs the Ethnologue, the primary source of information for languages around the world.[53] SIL's technology resources include:

- *Bloom:* Bloom includes software to quickly and easily develop books for young readers, hundreds of titles in hundreds of languages, and a large image bank. [54] SIL also facilitates author & publisher workshops using Bloom, which can produce multiple titles over the course of a workshop.
- *Primer Pro:* Primer Pro can analyze text in a given language and suggest a linguistic scope and sequence for reading instruction.[55] It can also search for particular parts of speech and other linguistic features. From this information, it can build word lists that authors can use for creating decodable text.

People's Action for Learning Network (PAL) – PAL is a partnership of organizations working on three sets of material to implement learning assessments, and programs to improve learning.[56] PAL members, including Pratham in India and Uwezo in East Africa, have developed citizen-led learning assessments (often called ASER assessments) in multiple Indian and African languages.[57]

The following additional sources are for storybooks and versioning tools:

- **African Storybook** provides open access (CC BY) to thousands of storybooks in African languages for reading online, downloading for print, and adapting.[58] Its software tools also allow authors to create new titles.
- **Pratham Book's Storyweaver**[59] provides open access (CC BY) to thousands of storybooks from around the world, as well as software to create and version books in other languages.

SECTION 5:

Effective LoI policy examples exist but are not being widely implemented

EFFECTIVE APPROACHES EXIST FOR ALL FOUR PHASES OF LOI POLICY DEVELOPMENT AND IMPLEMENTATION. The cycle for LoI policy and programing can be divided into four phases: (i) planning for language use; (ii) development of curriculum and materials, plus the allocation and training of personnel; (iii) implementation and support; and (iv) assessment and adjustment. Much has been learned in the past decades about the most successful approaches for each of these phases.

Planning for language use

PLANNING REQUIRES INFORMATION ABOUT LANGUAGE USE, ATTITUDES, GOALS, RESOURCES, AND CHALLENGES. Countries would be well-advised to begin their planning processes with a strong understanding of their linguistic context. Educational goals must take into account the language(s) of instruction, including carefully planned, mastery-based language transitions. Some countries and territories, such as Hong Kong (Box 7), have comprehensive and sound policies for LoI. Inventories of human, educational, and financial resources facilitate decision making, as does familiarity with frequently encountered obstacles to implementation. Stakeholders working towards effective LoI policies tend to succeed when they: understand the sociolinguistic and educational context, including prevalent perceptions of language use; support the development of appropriate teaching and learning materials (TLM); attract, select, and support motivated teachers; match teachers' language skills with their instructional mandate; and creatively harness technology in ways that respect the context. Information gathering needs to prioritize local knowledge and consider stakeholder attitudes and beliefs alongside language data, and the implementation landscape (including available resources).

MAPPING THE SOCIOLINGUISTIC CONTEXT. Language use is constantly evolving, so this information requires continuous updating. What languages are spoken by students, teachers, parents and community members? How well? By how many people? Do the languages have standardized orthographies? What are people's attitudes toward the different languages and their use? How are these languages used in classrooms and elsewhere? To all these questions, language mapping will provide the kind of answers needed to fundamentally inform the planning process from the outset. Ethiopia did this to its benefit, as illustrated in Annex A. Mapping exercises showed that of the country's more than 80 languages, five are spoken by nearly 80 percent of the population. These were the appropriate starting point for the development of assessments, materials, and curriculum. Good language mapping

BOX 7: Hong Kong China's Highly Successful Model for Language of Instruction

For primary schools, owing to demographic necessity and the alignment of policies to evidence-based practices, the topic of LoI has been wholly uncontroversial as policy, largely unproblematic in practice, and has resulted in high levels of learning. Teaching students in a language they understand has paid significant dividends for learning outcomes. Hong Kong China (HKC) grade 4 students scored second, first, and third in the world in the Progress in International Literacy Study (PIRLS) assessments in 2006, 2011, and 2016, respectively.

Meanwhile, secondary schools have been at the center of LoI policy debate in Hong Kong.[60] The LoI in public primary schools in HKCong is Cantonese Chinese, whereas at university it is predominantly English. It is the crucial transition from Chinese to English at secondary school that has given policy makers pause for thought.

Policy changes over the past five decades have mirrored historical, economic, and political changes. Language policy in secondary schools in Hong Kong has changed three times. At first, schools were allowed to choose their LoI. Then in 1994 schools were categorized as Chinese-medium, English-medium, or dual-medium. Then there was a period, from 1998, when Chinese was the only permitted medium. The latest change, in 2010, saw the abolition of the above-mentioned classification system that used to attach a single language-medium label to an entire school. Instead, a school can now offer English-, dual-, and Chinese-medium classes.

The current LoI model in HKC is characterized by research-based decisions. The model successfully promotes L1 instruction in the early grades, builds a bridge from L1 to L2, and supports the use of L1 even after L2 has been introduced in secondary school. To ensure that this model works in practice, the Education Bureau of Hong Kong supports many aspects of the policy such as the alignment of assessments to LoI, the provision of TLMs in Cantonese and English, and other interventions to ensure the effective use of English as LoI in the secondary grades. The learning outcomes in Hong Kong are an exemplary example of the power of effectively addressing language in education. (Annex G considers Hong Kong in greater detail).

also considers similarities across languages to facilitate potential economies of scale in development of curricula and TLM where appropriate. Language mapping lays the groundwork for effective strategies to communicate language policy.

DETERMINING LANGUAGE LITERACY FOR TEACHER ALLOCATION. Data on the language proficiency of students and teachers underpin several types of policy decision. Centralized teacher posting systems often result in teachers being sent to work outside their region of language proficiency. In some countries, and for certain languages, systems for the hiring and allocation of teachers need to ensure there is a match between the language knowledge of student and teacher respectively. Effective communication with teachers and teachers' unions or associations will be required to build widespread support among teachers for any changes in teacher employment. Language mapping exercises can gather information on the students' and teachers' level of proficiency in their primary and secondary language (assessed proficiency, rather than reported proficiency, as there can be significant differences between the two), and provide information for matching students and teachers by area, school, and classroom. USAID's language mapping exercises in Mozambique[61] and Ghana[62] are good examples of how this information can be gathered and used.

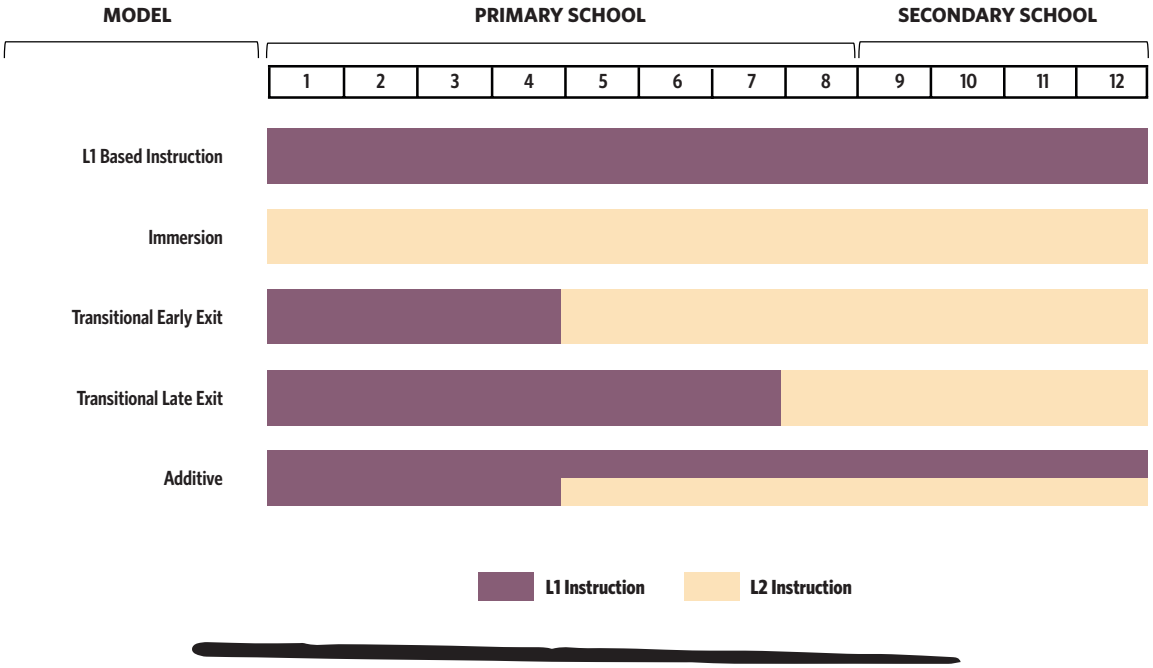
COORDINATING LANGUAGE POLICIES WITH OTHER EDUCATIONAL GOALS. LoI policies serve larger educational goals and must be integrated with these. *Changing the LoI to students' L1 will not improve learning outcomes if instruction is ineffective.* Addressing Learning Poverty requires improving overall instruction as well as using appropriate languages. Improved instructional approaches explicitly consider and coordinate educational goals, curricula, instructional time, teaching methods, teacher preparation and support, teaching and learning materials, parent/community engagement, assessment, and other considerations. Coordinating LoI with other aspects of instruction is essential.

EFFECTIVE LOI MODELS START WITH L1 AND DEVELOP PROFICIENCY IN MULTIPLE LANGUAGES. A language of instruction model sets the basic plan for matching instruction in target languages to linguistic aims, and educational goals writ large. Of the five following models, two have been shown to promote proficiency in L1 and an L2 by the end of basic education.

- ***The L1 model provides instruction without a transition to an L2.*** Countries like Canada that offer parents a choice of instruction in one of two national languages rely on this type of model. In practice, this model is often supplemented with instruction in the L2 as a foreign language.
- ***The immersion model may provide minimal or no L1 instruction.*** Two-way immersion programs build learning around substantial interactions between native speakers of the target language and those who are still learning it (freely using more than one language whenever necessary). One-way immersion programs prohibit or severely restrict the use of anything but the L2 target language. One-way immersion has some record of success in high-resource settings with highly trained teachers, but has not been documented to be effective in a wider range of settings. This is partly the case because in high-resource countries, one-way immersion involves introducing the L2 in a structured manner, with sufficient reinforcement of new knowledge and skills. Meanwhile, in low-resource settings, the less effective[63] submersion approach—sometimes described as "sink or swim"—is more common.
- ***Early-exit transitional models use L1 as the LoI in the early grades of primary school with a transition— prior to the end of primary school—into learning in an L2 and cessation of instruction in the L1.*** This model can improve learning outcomes, but it generally fails to maximize the potential of L1 instruction, especially in low-resource contexts with low learning levels overall.[64]
- ***Late-exit transitional models involve the use of L1 as the LoI through at least lower secondary school for literacy and academic subjects***. L1 instruction may end in secondary school. Academic attainment is generally higher than in early-exit programs, typically with faster development of general cognitive abilities.
- ***The additive approach maintains the use of the language students best speak and understand throughout schooling, from kindergarten to grade 12, while adding instruction in an L2 as a foreign language at some point in the middle grades.***

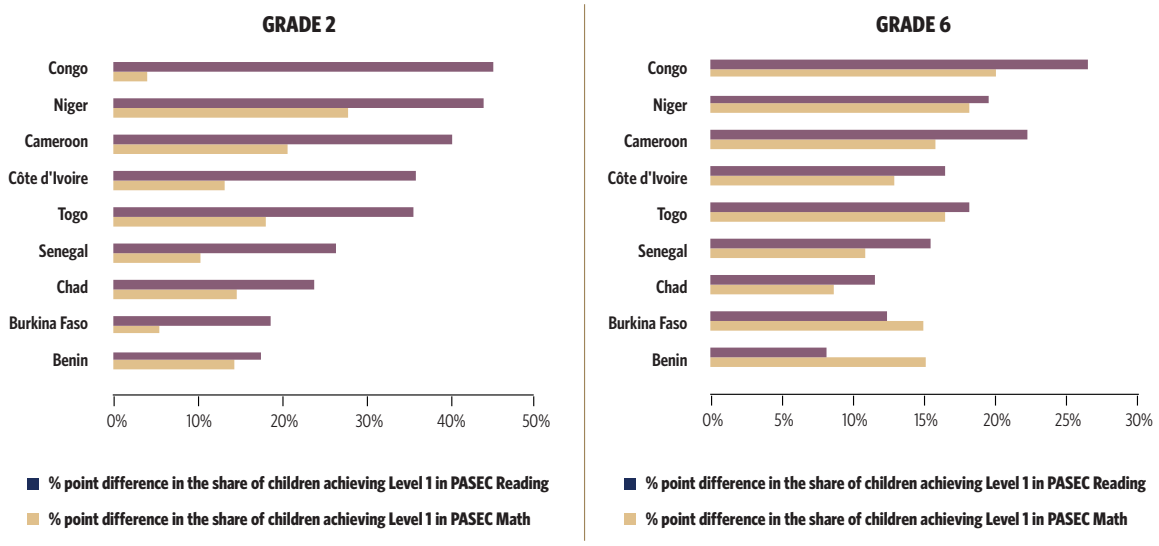
The models are a point of departure for coherent policy choices that take account of other essential factors. However, clarity on choices between models seems to be lacking in policy dialogue and policy formulation processes. Without such clarity, it is difficult to adopt a consistent approach to the following four evidence-based elements of effective policy making: (a) maintaining L1 through the first six years of schooling, (b) using L1 for instruction in other academic subjects beyond reading/writing, (c) introducing L2 literacy and content area instruction only after students have achieved a level of proficiency in L1 literacy and L2 oral language, and (d) continuing L1 instruction after an L2 becomes the principal LoI. During the policy development process, cogent discussion of language models will be essential in order to garner the support of all relevant stakeholders.

FIGURE 3: Language Models



MAINTAINING THE L1 AS THE LOI FROM ECEC THROUGH AT LEAST THE FIRST SIX YEARS OF SCHOOLING. L1 instruction is critical when children are learning to read, write, understand introductory mathematics, and acquire initial content knowledge. Using L1 in ECEC supports the transition from home to school, strengthens relationships between children and caregivers, and furthers children's oral language development, which is the foundation of literacy. L1 ECEC programs more effectively support the development of motivation to read, involving an enjoyable introduction of "concepts of print" (the way print functions, such as left to right and top to bottom, depending on language), letter knowledge, and phonological awareness. Even in monolingual contexts with strong institutional capacity, as many as one-third of children have trouble mastering literacy subskills such as segmenting sounds in words, even when they know several thousand words in their L1.[65] Children learning to read in a foreign language may know only a few words, or none at all, and so the ability to discern (in effect, to hear) word sounds and map them to letters becomes substantially more difficult. Decoding, which should allow students to turn written words into "spoken language in their heads," instead devolves to rote memorization of arbitrary and meaningless relationships. Then reading and literacy skills fail to develop sufficiently, and students are left unable to learn content or progress to "reading-to-learn." Building sufficient literacy and cognitive capacity to progress in school[66] requires a minimum of six years (the precise duration required will be dependent on instructional quality, instructional time, and other factors).[67] Figure 4 shows how children taught and assessed in their L1 outperform students taught and assessed in an L2. Both reading and mathematics scores are higher for the L1-taught children. Burundi was the only one of 10 countries participating in PASEC 2014 to use L1 as the language of the grade 2 assessment; scores were more than 100 points above the test average. By contrast, on their grade 6 assessment, conducted in French, Burundian students' performance is much closer to the average of the participating countries.

FIGURE 4: Percentage Point Difference in Share of Children Achieving Level 1 in Reading and Mathematics between Students Who always or Sometimes Spoke the Language of Instruction at Home and Those Who Never Did— assessment by PASEC, 2014



USING L1 IN OTHER ACADEMIC SUBJECTS. STUDENTS NEED TO LEARN TO USE LANGUAGE IN MANY DIFFERENT CONTEXTS AND FOR LEARNING DIFFERENT SUBJECTS. After mastering the first steps in literacy, children who receive L1 instruction in subject-specific content areas are better prepared to build vocabulary and expand comprehension to new domains. Numerous studies have shown that learner ability in the LoI is often too low for learners to achieve acceptable levels of content mastery.[68] L1 instruction in all subjects enhances not just literacy, but learning outcomes in the broader curricular content.[69] The near-perfect correlation between a country's reading score on the Progress in International Literacy Study (PIRLS) assessment and its math score on the Trends in International Mathematics and Science Study (TIMSS) assessment[70] is consistent with the higher performance in mathematics and science for those who speak the language in which they were tested.[71]

CONTINUING L1 INSTRUCTION AFTER TRANSITION TO L2 AS DESIGNATED LOI. The longer children learn in a language they know, the more they learn. Numerous examples in low-, middle-, and high-income countries have demonstrated that transitioning children from L1 instruction to learning exclusively in an L2 is less effective in supporting children's literacy development, second language acquisition, and subject-specific learning.[72] By contrast, continuing to use the L1 after the L2 has been introduced allows students to further develop literacy skills and learn content area knowledge. These students continue to strengthen their foundation in their L1 and transfer those skills to the L2.[73] It is talking about new ideas and concepts that truly helps students comprehend them.[74] Thus, even if an L2 is already the designated LoI, explaining content in L1 when students are at risk of not comprehending fully, or as a complement to L2, will yield better results than exclusive L2 use in instruction.[75]

INTRODUCING L2 AS A FOREIGN LANGUAGE WITH EMPHASIS ON ORAL LANGUAGE ABILITIES IN L2. Planning for language use means planning to build all the abilities students are meant to acquire by the end of basic education. Research conducted in the United States consistently finds that students

can spend up to half of their instruction time in an L2 with no negative effects on L1 learning (Collier and Thomas, 2017). An overall plan for multilingual proficiency must first of all build students' oral fluency and vocabulary in an L2 (and sense of ease) as a foreign language.[76] Children who receive reading instruction in their L1, have better L2 literacy scores[77] thanks to the transfer of skills from L1 to L2. However, students who do not reach sufficient skill levels in L1 and oral fluency in the L2 have difficulty transferring their reading skills from L1 to L2.[78,79] Whatever the schedule for L2 introduction, teachers need to have a high level of oral and written proficiency in the L2 to teach it effectively.

DEVELOPING AND IMPLEMENTING EFFECTIVE COMMUNICATION STRATEGIES FOR ALL STAKEHOLDER GROUPS. In contexts where the use of L1 in education has been neglected and devalued, effective communication on the importance of L1 instruction will be required for every stakeholder group, from policy makers to teachers' unions to individual teachers to parents to students. Outreach beyond the Ministry of Education to other government departments will build political consensus around the simple necessity in basic education—in terms of human capital, and indeed finance—of using languages that children understand. This outreach and advocacy is critical for policy uptake and sustainability. Communications strategies should use multiple approaches, including direct messaging from one stakeholder group to another (such as Ministry of Finance officials to Ministry of Education officials, and education officials to parents), media (including radio, television, and print, as appropriate), and stakeholder discussion groups (particularly at the community level). For more information and resources, see the *Handbook on Language of Instruction Issues in Reading Programs* (USAID, 2019) and *Good Answers to Tough Questions in Mother Tongue-Based Multilingual Education* (Young and Trudell, 2016).

Language and TLM development

STANDARDIZATION OF ORTHOGRAPHIES FOR WRITING SMALL LANGUAGES. Some languages will require orthography standardization as part of planning for their use. Occasionally, when working in (demographically) very small languages that have not yet been used for any kind of education or written communication, a writing system will not have been devised. Others will have competing orthographies within or across national borders. Before the curriculum and supporting TLM can be developed, it is vital to assess the maturity of the orthography and technical vocabulary of each L1 to be used for instruction. If these are not sufficiently standardized, supporting language development on these two fronts will need to be part of the implementation process.

"ACADEMIC VOCABULARY" DEVELOPMENT FOR CERTAIN SCHOOL SUBJECTS WILL BE NECESSARY. Languages used for instruction require an adequate academic vocabulary for use in subject-specific academic classes. Specialized words and phrases such as "long division", "denominator" or "reciprocal" will need to be selected or even created in a particular L1. This is true for both written and unwritten languages. Support may be needed to develop the technical vocabulary necessary to use students' L1 for content in all academic subjects taught.[80] This may be done with "loan words" from another language, the creation or selection of terms in the student's home language, or a mix. Classroom teachers who toggle back and forth between an L1 and L2 as they seek to explain curricular concepts in multilingual classrooms are an ideal resource for academic vocabulary development. The standardization of terms paves the way for development of high-quality L1 teaching and learning materials, lesson plans, and instruction.

L1 INSTRUCTION REQUIRES HIGH-QUALITY, CONTEXTUALIZED TEACHING AND LEARNING MATERIALS (TLM). Strong curricula require adequate teaching and learning materials. Teacher

guides with structured lesson plans, textbooks, and supplementary reading materials for reading practice and content knowledge development are just a few of the inputs needed. Teacher guides must use language that teachers will comprehend, and include content and teaching methods appropriate to the context and available resources. Content difficulty and instructional pacing must be aimed at the "right level" so that instruction focuses on students' learning challenges. TLM developers should use existing evidence to determine the knowledge and skills of children when they begin to learn, and how quickly they can and should progress. Too many curricula are aimed at the top 10–15 percent of learners and leave more than four out of five students in Learning Poverty. TLM development can draw on existing materials, global and cross-border resources (for cross-border languages). Translation or adaptation of existing material can be mixed with fully local development. Sources could include Ministries of Education, local publishers, local bookstores, local markets, and multilingual digital libraries such as African Storybook, the Global Digital Library, Pratham's Storyweaver, the Bloom Library, or the Asia Foundation resource platform.[81]

THE CREATION OF TEACHING AND LEARNING MATERIALS CAN DRAW UPON LOCAL RESOURCES AND GLOBAL PUBLIC GOODS OR PLATFORMS. Using existing market survey approaches or developing country-specific instruments, teams can review existing resources in each language of instruction, including braille and sign language, to assess whether new TLM are needed. The review should consider all languages of instruction, the quality of the writing, the quality of the pedagogical approach, cultural relevance, inclusion, and all subjects of the curriculum. Resources within the relevant country, cross-border resources (in the case of cross-border languages), and resources available through global platforms should be considered. If new TLM are needed, a decision will need to be made on whether it is best to fill those gaps by versioning (translating and adapting) existing open source (open licensed) resources or whether materials should be newly developed. ICT tools can be particularly helpful for materials development (these are discussed in a later part of this section).

CONSULTATION IS CRITICALLY IMPORTANT TO ORTHOGRAPHY AND TLM DEVELOPMENT. A diverse range of stakeholder perspectives should inform discussions on new resource development for an L1 language. Wide consultations, for example, help a new orthography make its way into the written culture of a language community, in and outside of school. The process requires buy-in from influential stakeholders and institutions that use written language, including the education system, religious and civic institutions, and the publishing and broadcasting industries. Developing language-specific and technically sound TLM requires technical expertise, and knowledge of languages and culture. Successful examples from Ethiopia and Ghana showed that the key to success was to involve (and building the capacity of) government counterparts.[82] Good planning includes stakeholder consultations throughout all stages of TLM development, from planning to use. In some countries, the textbook industry (international or national) is a powerful partner of the Ministry of Education and should be included in stakeholder consultations. This will ensure that the rationale for effective LoI policy is well understood, and that plans for materials development and procurement are supported accordingly.

LOI POLICIES CAN HELP BUILD MORE INCLUSIVE EDUCATION SYSTEMS. Appropriate LoI policies ensure that teaching methods and instructional materials represent and support learning for all children, including children with diverse educational needs. Expanding the use of braille, developing sign languages, and developing additional instructional tools for students who need support will allow the improved LoI policy to benefit all students. Effective policies on language create educational environments that pay attention to the needs of all students, starting with the need to understand instruction and to be able to participate in the classroom. The use of L1 instruction increases the use of child-centered teaching methods, which build environments that are conducive to learning.[83] The choice of L1 instruction empowers teachers to use strong pedagogical practices and allows students

to fully engage with the material, ultimately creating a learning environment in which all students can participate. The use of L1 also allows parents and communities to support children's learning more effectively.

Careful teacher recruitment, selection,support, and matching (of student and teacher language competencies) is critical to effective L1 instruction.

Teacher allocation, professional development, and recruitment as seen through a LoI lens

TEACHERS ARE A CRITICALLY IMPORTANT DETERMINANT OF STUDENT LEARNING IN ANY LANGUAGE.[84] Teachers are the most important factor in student learning. The bilingual or multilingual classroom is no exception, and careful teacher recruitment, selection, support, and matching (of student and teacher language competencies) is critical to effective L1 instruction. Good LoI policies make teachers' jobs easier and ensure that teachers with the right skills are in the right classrooms. Good policies in effect support and develop all teachers in all contexts.

THE PROFICIENCY LEVELS, ATTITUDES, AND BELIEFS OF TEACHERS AND STUDENTS SHOULD BE DOCUMENTED. The primary language competency of effective teachers in a bilingual learning environment is biliteracy: *oral and written fluency in both languages*. Some teachers will have oral competence in L1s, but they may lack corresponding written L1 competence and L2 competence. Other teachers are more likely to be fluent in oral and written L2, but less able or willing to use L1 for classroom teaching. Identifying teacher competencies is an important step for appropriately planning teacher recruitment and posting. This should be done according to language needs and language-specific professional development for teachers. In some countries, particularly those with centralized posting systems, this will entail a significant cultural and political shift and needs to be well-planned, with extensive stakeholder engagement, particularly on the part of teachers' unions. Teachers' beliefs and preferences about L1 instruction will influence the implementation of language policies. Conducting a thorough assessment of these factors and involving stakeholders in policy discussions will provide policy makers with a good understanding of the gaps that need to be addressed to ensure effective language of instruction policy implementation.

LANGUAGE PROFICIENCY SHOULD INFLUENCE TEACHER RECRUITMENT, DEPLOYMENT AND PROFESSIONAL DEVELOPMENT. Language mapping exercises help to identify where teachers lack relevant language proficiency. Short-term solutions have involved contracting community members as teaching assistants or translators. Political and professional sensitivities tend to beset recruitment. Proficiency assessment may make teachers uncomfortable for fear of demotion or demission. Teachers may fear loss of advancement opportunities if their skills are associated with languages used in remote regions with less desirable professional conditions. Development partners, governments, and teachers' unions should participate to determine effective and acceptable approaches to teacher deployment.

TEACHERS NEED LOI-SPECIFIC SUPPORT INTEGRATED INTO LARGER SUPPORT SYSTEMS. Effective teaching in L1, and later L2, requires specific pedagogical skills and tools.[85] Support systems must help teachers to acquire the necessary linguistic, pedagogical and other expertise.[86] Language considerations need to inform professional development before and during employment.[87] This can be as simple in the short term as ensuring that training is delivered in a language that teachers speak

and understand, or become a longer term approach, such as helping teachers strengthen their L1 and/or L2 literacy skills. In Ethiopia, the Reading for Ethiopia's Achievement Developed (READ) program revised preservice training to align it with the new curricula and to support seven regional languages of instruction.[88] Subject-specific pedagogical training, especially for early grade reading instruction, should integrate language and other pedagogical considerations.[89] Adapting in-service training should be a priority, as it is probably the fastest way to reach large numbers of active teachers, but pre-service training is also important, especially in countries with high teacher turnover and rapidly increasing enrollment. Teachers are not generally opposed to upgrading their skillset, but it must be understood that their teaching techniques will have been acquired over the course of several years, through studying and later teaching. The literature highlights the effectiveness of explicit instruction techniques and of coaching. Kenya,[90] Malawi,[91] and the Gambia[92] have documented their success in using structured lessons plans in an L1 as has Pratham in India. Coaching programs likewise have well documented successes.[93] Box 8 and Annex F describe the success in India of the Language & Learning Foundation's comprehensive support model.

Implementation and its challenges

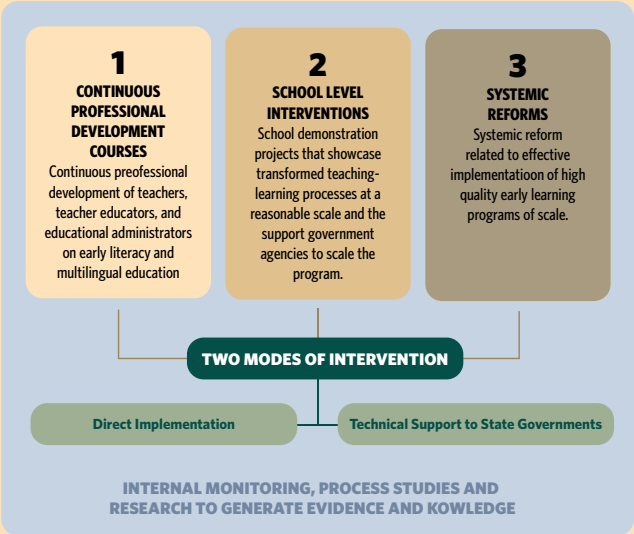
POLICIES SHOULD BE MATCHED TO THE SPECIFIC IMPLEMENTATION CHALLENGES. Too often, the policy dialogue around LoI policies fails to take sufficient account of country contexts. Low- and middle-income countries present a range of contexts, including:

- ***Context 1: Homogeneous L1 speech communities learning in a single L2.*** Often the challenge for LoI policy is to bring a mostly or completely linguistically homogeneous group of students (and teachers) who speak an L1 to proficiency in a single L2. This may be under "additive" or more likely subtractive dual language instruction. It is often pursued by simply mandating instruction in an L2. Fortunately, homogeneous speech communities are more likely to have teachers who are L1 speakers. They can follow the evidence-based approach of (a) teaching in L1 in the primary grades and focusing on establishing literacy and numeracy in L1; (b) introducing L2 as a foreign language once L1 threshold competencies have been achieved and developing initial oral language abilities in L2, also in the primary grades; and (c) developing a transition to L2 instruction once threshold competencies are achieved in L1 and L2 with continued instruction in L1 throughout the primary and preferably lower secondary years. This will maximize literacy levels in L1 and L2, as well as content learning.
- ***Context 2: Moderately linguistically diverse speech communities learning a single L2.*** The second context exists when students within a single classroom speak several languages. The correct policy solution depends on the number of languages spoken, the existence or absence of a common language between students, and the proficiency levels of students and teachers. There may be an L1 that is spoken by many students and learned early by others. There may be two main L1s and teachers may have to teach in both. There may be a regional language that all students will learn as they grow, and with which they are already somewhat familiar when they begin to attend school. Schools can also be so microdiverse that community assistants are required for small groups of children. These situations demand contextual analysis and communication to develop solutions acceptable to all.
- ***Context 3: Homogeneous L1 speech communities seeking to learn two L2 languages.*** Some countries pursue policies that seek to have children master two L2 languages in addition to their L1. One of these is often a Language of Wider Communication, while the other might be an international language whose use is connected to a colonial past. In Kenya, for example, students

BOX 8: Language & Learning Foundation (LLF) - Transforming language teaching in India

Founded in 2015 with the goal of improving language learning outcomes of children in grades 1 to 3 in home and school languages, LLF presently works with seven state governments and will reach 17 million children through their programs by 2021. To build government commitment and capacity to plan and implement early language learning programs at scale, LLF focuses on the three dimensions shown in the figure below.

LLF's Three-Pronged Strategy



As part of continuous professional development courses, LLF designs and implements blended capacity building courses of varied duration on early literacy and multilingual education for teachers and teacher educators. The courses provide conceptual understanding of early language learning as well as classroom teaching and learning activities and materials. Designed with the aim of creating conviction and capacity within the education system at all levels, these courses play a key role in supporting large-scale literacy and multilingual programs and sustaining them over the long term. The courses and workshops precede implementation of school-level projects and range from one-year flagship courses to one-month courses on themes within early literacy and multilingual education. Almost always oversubscribed, the courses have helped LLF build credibility around its leadership for early literacy and multilingual education. Some of the courses are certified by Indian universities. External evaluations of the nine-month course have shown significant gains in teacher knowledge and implementation of positive changes in teaching–learning practice, especially the strategic inclusion of children's home languages.

For school-level interventions, LLF designs and implements projects that demonstrate transformative changes in the teaching and learning of languages and improve student learning. These comprehensive projects aim at building capacity of teachers and school heads through training workshops, orientation of government staff responsible for school supervision and support, regular academic support to teachers through classroom visits, and review meetings. They also offer mobile phone-based sharing of resources, provision of instructional materials like workbooks, grids for decoding and reading materials (such as reading cards and storybooks), the creation of print-rich classrooms and regular student assessments. Each LLF mentor provides academic support to teachers in 50 schools, in collaboration with existing government monitoring staff. External evaluations of LLF's school programs have shown significant learning gains for children.

Lastly, as part of systemic reforms, LLF works with state education institutions to influence the state-wide annual in-service training of teachers, school-based assessments, review and revision of textbooks, and development of an improved curriculum for pre-service teacher training, with a focus on multilingual education.

learn in Kiswahili and English in primary school. For many Kenyan students, neither of these is their L1. Good research on success in more than two foreign languages in the primary grades is limited, but experience suggests that L1 instruction with L2 and L3 taught first as foreign languages produces best results. Clearly, the amount of time needed to teach foreign languages, especially two foreign languages, in the primary grades, will reduce already limited instructional time for the teaching of foundational skills and content knowledge.

- ***Context 4: Highly diverse speech communities seeking to learn at least one L2.*** Traditional settlement patterns, urbanization, migration, displacement, and a number of other factors make multilanguage communities, schools and classrooms a reality. Although they are not as prevalent as sometimes suggested,[94] multilanguage communities in many countries are expanding.[95] Students in multilingual settings still need good LoI policies, with some creativity and flexibility in implementation. Specific needs include the identification of languages, teachers with proficiency to match that of students, linguistically and culturally relevant teaching materials, along with assessment methods and curricula that follow the principles outlined above in terms of alignment with L1 instruction. Strategies for working effectively in these settings include conducting language mapping, using a language with which the majority of students are familiar (often a regional language) instead of each student's L1, using L1 speakers from the community as assistant teachers, involving parents and other community members in classroom support, and providing multilanguage materials. For a more detailed discussion on these strategies, refer to *Good Answers to Tough Questions in Mother Tongue-Based Multilingual Discussion*.[96] Ultimately, while diversity of language in the classroom does obtain in some settings, the approach to successfully ensuring learning for all students relies on appropriate language and educational services. This is particularly the case when there are high levels of linguistic diversity in education systems, often in urban settings, such as the New York City Public School System (see Box 9).

ONE SIZE DOES NOT FIT ALL: DIFFERENTIATED IMPLEMENTATION FOR SPECIAL CIRCUMSTANCES: Additional challenges to implementation exist when situations or student needs are not those of a traditional school system:

- ***Fragile and Conflict-Affected (FCV) Settings:*** FCV settings require a unique approach to LoI. Fragility and conflict often result in long-term population displacement. On average, refugees spend 10 to 25 years[98] outside their home country or region. Their displacement is not a transitory humanitarian crisis, but a long-term one that requires a long-term approach to service delivery. A large influx of displaced populations into host communities requires strategic planning to ensure that children participate in instruction in a language they know. Additional challenges can include gaps in schooling resulting in lower than expected L1 literacy levels, lack of alignment between LoI in the host country and the displaced children's country of origin, socioemotional challenges requiring additional support, and a lack of teachers fluent in children's L1.[99] It is important to consider political sensitivities as well, including community perspectives regarding newly arrived children, the perceived responsibility of host communities to offer and customize education services to the displaced population, and the roles of international actors assisting with the provision of schooling.
- ***Children with Diverse Educational Needs:*** Good LoI policies allow all children to learn in a language they know well. However, attention is needed to ensure that no children are left behind. Many children who do not attend primary school have a disability.[100] In developing countries, 42 percent of children with disabilities are out of school at the primary level and 56 percent at lower secondary level.[101] Estimates from 19 low- and middle-income countries show that children with disabilities are 13 percentage points more likely never to be enrolled in school, 15–18 percentage points less likely to finish primary school, and about 16 percentage points less likely than their peers to be literate.[102] When developing LoI policy, it is critical to consider how learners with disabilities will be supported. Blind children use braille, and thus the LoI policy must address the

BOX 9: New York City's English Language Learner Program[97] Screens and Allocates Students among Three Main Interventions

The New York City (NYC) public education system serves a very diverse student body; its more than one million students speak 176 different languages. More than 42 percent of students enrolled in the city's public schools come from households in which English is not the primary language of communication. To meet the need of its student body, the NYC Department of Education (NYC DOE) has put in place an English Language Learner (ELL) program in all public schools.

To identify students who qualify for ELL, parents or guardians are asked to fill out a Home Language Identification Survey (HLIS). If a language other than English is indicated, the child will take the New York State Identification Test for English Language Learners (NYSITELL) to determine their English language proficiency. Students who score below a State-determined level on the assessment are identified as ELLs and entitled to ELL programs and services.

The NYC DOE offers three modalities of ELL programs aimed at promoting proficiency in the students' home language and English. The modalities are Dual Language (DL), Transitional Bilingual Education (TBE), and English as a New Language (ENL). Parents or guardians of ELLs choose one of these modalities.

1. English as a New Language (ENL) programs are offered in all New York City public schools. These programs aim to develop English language proficiency and are taught in English as stand-alone ENL classes and/or integrated ENL instruction in subject area classes.
2. Transitional Bilingual Education (TBE) programs are designed so that students develop content knowledge in their home language as they learn English. Schools provide English language arts (ELA), home language arts (HLA), and subject-area classes in students' home languages and English. Students' home language is used until the student scores at or above a State-determined level of English proficiency, whereupon they are integrated into English classrooms.
3. Dual Language (DL) programs are designed to develop bilingualism, biliteracy, and cross-cultural understanding. Through these programs, English-proficient students are also given the opportunity to learn a new language. DL programs are offered from pre-kindergarten to high school.

ELL Program Modality

	NO. OF SCHOOLS	LANGUAGES (NUMBER OF PROGRAMS)	ENROLLMENT AMONG ELL STUDENTS (%)
ENL	All public schools	English	125,271 (81.2%)
TBE	291	Arabic (4); Bengali (4); Chinese (41); Haitian Creole (2); Polish (1); Russian (1); Spanish (231); Yiddish (7)	18,047 (11.7%)
DL	267	Arabic (1); Bengali (1); Chinese (26); French (9); Haitian Creole (2); Italian (2); Japanese (1); Polish (1); Russian (4); Spanish (219)	9,583 (6.2%)

Among ELL qualifying students 1,375 (0.89%) are not served. DL programs also serve non-ELL students, whose enrollment figures are not reflected here.

question of whether braille is available for the L1 in question or whether it needs to be developed. Similarly, deaf children who sign will need to learn sign language for L1 and L2. To ensure learning for all, schools, teachers, and students need resources to address specific educational needs such as differentiated instruction, braille, sign language, hearing loops and speech-to-text technology.[103]

ANTICIPATION OF IMPLEMENTATION CHALLENGES INCREASES EFFECTIVENESS. Successfully implementing LoI policies requires early consideration of key implementation challenges. Ethiopia's experience (Box 10) speaks to the importance of persistence when teaching in many languages and sustaining policy implementation over the long term.

BOX 10: Multilingual Education in Ethiopia

Ethiopia is very ethnically and linguistically diverse, with over 80 officially recognized languages and over 200 dialects.[104] The five largest ethnic groups account for about 78 percent of the population (34.4 percent Oromo, 27 percent Amhara, 6.2 percent Somali, 6.1 percent Tigray and 4 percent Sidama),[105] with ethnic and linguistic diversity greatest in the western and southwestern regions of the country.

In 1994, this ethnolinguistic diversity was recognized by the Ethiopian Educational and Training Policy (EETP). The EETP explicitly recognized that L1 education has pedagogical advantages for children's learning and made primary education in 'nationality languages' compulsory, to be followed by a transition to English as a medium of instruction in secondary and higher education. Amharic was to be taught as a language of countrywide communication.

In the early years of policy implementation, larger languages were quickly adopted as a medium of instruction in almost all regions. Gradually, the number of languages used increased and, as of 2015, about 30 languages were being used as a medium of instruction for part or all of instruction in the primary grades, with about 51 languages being offered as a subject.[106] In all regions of the country, English is introduced as a subject in grade 1, while Amharic is introduced as a third language, often starting in grade 3 or 5.

However, despite strong commitment to the policy, implementation continues to face challenges. Three to highlight are:

- Significant variation across languages in their level of development and readiness for use in education: A lack of focus on language development could lead to widening inequality across groups.[107]
- Lack of trained teachers: In the early years of implementation, finding trained and qualified teachers who spoke the needed languages was challenging.[108] However, Ethiopia has made gradual but significant progress in addressing this gap. Pre-service teacher training programs for lower-primary teachers in many of these languages are gradually being introduced in Colleges of Teacher Education; in-service teacher training programs have been expanded to upgrade the qualification of unqualified teachers; and teachers are also recruited locally by woredas (districts).[109]
- High costs of providing textbooks and other teaching and learning materials: For regions where there are many demographically small languages, the cost of printing textbooks and TLM continues to be high, due to fragmented, more localized procurement and smaller print runs. Further, for many of these languages, written materials other than textbooks remain scarce.

Despite the challenges, EETP is yielding promising results. Evidence suggests that L1 instruction is having positive impacts on years of schooling as well as learning outcomes.[110] Nevertheless, the Ethiopian case highlights the issues that must be addressed for linguistically diverse students and countries to thrive. (For further detail on the case of Ethiopia, see Annex A).

Assessing progress and adjusting policies

LANGUAGE(S) OF ASSESSMENT AND INSTRUCTION SHOULD BE CAREFULLY INTEGRATED. Assessment is key if students, families, teachers and policy makers are to understand learning progress. To be effective, the language(s) of assessment should reflect the language(s) of instruction. If it does not, assessments that are meant to reveal levels of mastery of specific material will be stymied by inadequate knowledge of the language of assessment. A mathematics problem expressed in words (rather than figures and symbols) designed to find out if a student can, for example, answer "What does two plus two make?" is meant to reveal a student's knowledge of arithmetic. But many students get such questions wrong even when they do have that knowledge, and could in fact answer correctly in an L1 or a language they speak and understand better. When tests are de facto testing language proficiency, then the ostensible subject-matter tends to be obscured, and the results biased. This is true for a range of assessments, including national large-scale assessments and exams (of much greater consequence for a student's future than regional or international large-scale assessments).

ASSESSMENT OF L1 LITERACY IS FUNDAMENTAL TO PLANNING FOR TIMING OF ANY L2 TRANSITIONS. Children's ability to acquire literacy skills in an L2 depends on their L1 reading skills[111] and their L2 oral language skills.[112] Thus, for L1 to L2 transition to succeed, children's fluency in both L1 and L2 must be assessed. Along with the development of a language-specific scope and sequence for reading instruction and other instructional approaches needed for successful bilingual education programs, emphasis should be placed on consistency across assessments as well as alignment with the curriculum and the LoI model.[113]

THE LANGUAGE OF EXAMINATIONS SENDS STRONG SIGNALS ABOUT WHAT LANGUAGE ABILITIES ARE VALUED. Subjects that are tested are subjects that are taught; effective LoI implementation requires the inclusion of L1 competencies in classroom testing and on national exams, particularly high stakes exams. In many countries, exam results dictate access to higher levels of education and employment. As such, exam success is the highest priority for teachers, school administrators, students, and parents. Fair, transparent, and consistent language policies should govern examinations, and these should be clearly communicated to stakeholders.

MISMATCHES BETWEEN LANGUAGES OF ASSESSMENT AND INSTRUCTION MAY INVALIDATE ILSA SCORES. International large-scale assessments are less important to local stakeholders, but still important to policy makers. As Figure 4 showed, millions of children are being assessed in a language that they do not understand and in which they are not taught. This results in assessment outcomes that give an unfair advantage to the few who use the assessment language at home. These assessments serve better as a measure of foreign language learning than of skills or content knowledge.

Technology could greatly improve implementation effectiveness if used well

LEVERAGING TECHNOLOGY TO SUPPORT IMPROVED LOI POLICIES AND PROGRAMING. Various forms of technology—educational, communications, and others—are powerful tools to help students reach proficiency in their L1 and any L2s. Becoming literate, learning a language as a foreign language, and mastering academic content in a given LoI can all be aided by astute use of technology. Perhaps more importantly for the near term, technology can help provide the information needed to make and implement good LoI policies, develop effective teaching and learning materials, and aid in their monitoring and evaluation.

TECHNOLOGY CAN HELP IMMEDIATELY, AND IN THE MEDIUM AND LONG TERM. Technology is available to help solve immediate problems in LoI policy and programing. It also holds great promise for providing additional tools. Successful harnessing of ICT for LoI will proceed on two fronts: a greater ability to use existing technology effectively, and the ever-growing power of technology to provide tailored solutions for diverse education needs. Discussions of technology's use for LoI will

BOX 11: How does Language of Instruction affect Test Scores?

Students are normally tested in the official language of instruction, especially for international large-scale assessments (ILSAs) and national large-scale assessments. This works well in monolingual contexts but creates numerous problems in multilingual ones. Students for whom the language of instruction is not L1 systematically score lower than students for whom it is.

The literature documenting lower scores in L2s is voluminous and consistent. Mullins et al. (2012) found that 92 percent of students from the 48 countries tested in the 2011 PIRLS assessment spoke the language of the test at home. Those not tested in their L1s scored significantly lower: 479 versus 516, or more than one-third of a standard deviation. Glewwe et al. found that linguistic minority students fall behind very early in their school experience and have a hard time catching up.[114] Other authors have documented the strong correlation between being taught in one's L1 and persisting in primary school.[115]

Do those lower scores indicate lower achievement, test bias, or both? If there is test bias, is it due to bad translation, or to deeper "configural problems" when the constructs themselves fundamentally differ between languages? These are the key questions. Translation problems are relatively easy to spot and fix with enough resources, but configural problems pose a greater challenge.

At the heart of the problem is the fact that tests in a single language cannot distinguish between students who answer incorrectly because they truly do not know the construct and others who could have answered correctly if only the question had been posed in their L1. When students are grouped and tested in their respective L1s, post-test analyses can in theory estimate the extent of bias between test versions. In practice, this way of testing and analyzing results is rare outside the main languages spoken in OECD countries.[116]

One part of the story is clear: the problem is not the inability of bilinguals or multilinguals to achieve as well or better than monolinguals. Collier and Thomas[117] found that when students receive enough high-quality instruction in both languages, bilinguals will eventually outperform monolinguals even in the monolinguals' L1. But instruction is almost invariably suboptimal, and so it remains of crucial importance to find out by how much a linguistic minority is lagging behind: and why.

The problem is becoming more important as testing coverage expands globally. ILSAs were initially designed for—and first undertaken in—OECD member countries, which tend to be more linguistically homogeneous than non-OECD countries.[118] In 2000, PISA (Program for International Student Assessment) had 41 national test "versions" in 25 languages for 30 participating (OECD member) countries; by 2006, 77 versions in 42 languages were given (the increase accounted for by non-OECD member countries). The expansion "added considerably to the challenge of ensuring equivalence and fairness of instruments across all participating countries."[119] The challenge may well be formidable, but it is only by testing students in their L1s, and appropriately analyzing differences between language groups, that stakeholders can be confident that assessments are measuring learning.

be most effective if they focus on the following questions: (a) what can we use right now and what can we use it for? (b) what can help us in the medium term and what would we need to do for it to be helpful? (c) what exists now but can only be used effectively if traditional barriers to technology use are overcome? and (d) what new technologies will further improve learning opportunities if their potential can be actualized to help students everywhere to learn at the right level?

Technology is available to help solve immediate problems in LoI policy and programing. It also holds great promise for providing additional tools.

EXISTING TECHNOLOGICAL RESOURCES CAN ALREADY MAKE THE CREATION AND ADAPTATION OF TLM EASIER. Existing software programs and other tools make the development of TLM in target languages much easier, faster, and cheaper. Numerous tools, including many that are freely available public goods, expand and accelerate the creation of key TLM resources. This is most true right now for early grade reading materials: critical for literacy and lacking in many countries and languages. Existing tools to create or adapt reading books for practice include Bloom software from SIL, African Storybook, Pratham's Storyweaver, and the Global Digital Library. Tools to develop and adapt student textbooks and teacher's guides include Primer Pro and SynPhony. A wide range of linguistic information and materials is available on the Ethnologue database. These programs help determine appropriate linguistic scopes and sequences and produce "decodable" word banks and then help create and adapt "decodable story books" that children need to practice the skills they learn during early grade reading instruction. Bloom, African Storybook, and Storyweaver have tools for versioning thousands of existing open licensed reading books into new languages. Early-grade reading programs supported in more than 40 countries by USAID, such as the Uganda School Health and Reading Program (SHRP)[120] or the Ghana Learning program,[121] have used these software programs to produce TLM in more than 80 languages. An additional USAID-supported initiative used Bloom to develop books through author workshops in six countries, a process that resulted in 3,000 decodable and leveled books in 15 languages.

EXISTING SOFTWARE CAN IMPROVE LINGUISTIC SCOPES AND SEQUENCES FOR CURRICULA. Good early grade reading instruction follows a scope and sequence consistent with the characteristics of the language of instruction. More common and easier sounds and letters (symbols) are taught before less common and more complex ones. These differ by language, and existing software can identify them. Once identified, they can be properly integrated into effective "scopes and sequences" for the introduction of letters and sounds in reading instruction in alphabetic languages. For alphabetic languages (those that use a set of letters to compose words), Primer Pro[122] and SynPhony[123] analyze selected written texts to determine the frequency of individual letters, syllables, and other linguistic information that can then be used to develop a scope and sequence with materials for teaching reading in that language. Quality control processes for TLM and scope and sequence development can also be strengthened with technology, as was the case in Ghana, where an e-filing system was key to developing materials in 11 languages.[124]

ADDITIONAL RESOURCES CAN AID LANGUAGE MAPPING AND LANGUAGE DEVELOPMENT. The Ethnologue database is the most authoritative source of information on languages around the world. It is not, however, a substitute for full language mapping exercises; it lacks granularity and depth of information on speaker numbers and characteristics. It can nevertheless serve as a valuable point of departure for governments to learn or confirm linguistic information and what gaps in knowledge need to be filled through full-scale language mapping. Additional resources exist for languages that require

orthography and/or vocabulary development or standardization. The World Atlas of Language Structures is a large database of phonological, grammatical, and lexical properties of languages.[125] Manuals for orthography development[126] or standardization[127] also exist. No technological resources currently exist to support the development of academic vocabulary, but these could easily be developed as a database of words in mathematics, science, social studies, history, art, music, foreign languages, physical education, and so forth, for use in instruction of all school subjects, through the medium of any given language.[128]

DATA MINING COULD MAP LANGUAGE USE AND PROFICIENCY LEVELS IN THE MEDIUM TERM. Countries need to know who speaks what languages and to what levels of proficiency. This information needs to be periodically updated. Mining data from electronic communications represents the best option for doing this on an ongoing basis. Smartphones with social media and communications apps are becoming ubiquitous in many countries. With appropriate safeguards, the data they produce could be used to analyze what languages are used and how they are used. Similar to how cellphone data is revolutionizing "contact tracing" for public health purposes, language use online could become the cost-effective source of information on language use needed for LoI policy formulation and implementation. Analysis and processing of this data could be aided by, and in turn help strengthen, existing networks of linguists and language experts and planners such as the African Linguistic Network.[129] To collect information about community perspectives on L1 as well as educational policies, a variety of cost-effective tools such as Survey Solutions, Geo-Enabling initiative for Monitoring and Evaluation, Survey CTO, among many others, can be used as appropriate.[130] Adaptation and use of tools for automation of phone surveys in multiple languages, such as Viamo, could and should be expanded.[131] Existing and new resources to address issues related to cost-effective language mapping are emerging almost daily.[132]

TECHNOLOGY CAN TEACH INDIVIDUAL STUDENTS "AT THE RIGHT LEVEL" IF USED WELL. This paper advocates that countries adopt policies under which each student first learns in their L1 throughout primary school and most of lower secondary school. It argues that instruction in roughly 550 additional languages worldwide would serve 84 percent of all students in their L1s. The problem is massive, and solutions will need to be conceived on a commensurate scale. Existing software programs such as Duolingo's "Duo ABC" are designed to make children literate; such programs will continue to proliferate. Their use is constrained by the myriad of challenges affecting the use of technology in classrooms, especially for young learners, and in low-income or generally under-resourced settings. As these all too familiar challenges are overcome, more tools will be available for students for individualized learning in L1 and for transition to L2 proficiency.

The pandemic heightens the need for language and technology solutions.

ARTIFICIAL INTELLIGENCE (AI) FOR LANGUAGE LEARNING WILL CONTINUE TO IMPROVE. Technology is gaining the ability to analyze spoken language and compare it to "correct" pronunciation, and to quiz students on the meaning of words, phrases, and spoken or written discourses. It can automatically review any interaction and has the potential to present a learner with a tailored next task. All aspects of language learning, literacy instruction, and other school tasks are likely to be improved by AI technology. The equivalent of more than USD five trillion per year is spent on education (four percent of the world's 142 trillion GDP); by contrast, in 2012, Facebook used the labor of fewer than 4,000 employees to create a network

reaching one billion people. This means technology in theory at least allows solutions to be developed and delivered at global scale with massive cost-effectiveness and economies of scale. The cost of developing and delivering tailored, effective instruction to every student globally would in theory cost a minuscule share of annual spending on education. The obstacles to effective use of AI may continue to be organizational and sociological—or, to put it more bluntly, it cannot be assumed that just because it can be done, it will be done well (or done at all). Nonetheless, it is vitally important to maximize the power of AI and new technologies to expand individualized language- appropriate learning.

THE PANDEMIC HEIGHTENS THE NEED FOR LANGUAGE AND TECHNOLOGY SOLUTIONS. The COVID-19 pandemic has significantly increased demand for distance learning. At its best, remote learning allows students to engage with material in an individualized way, according to the learning levels and languages of each student. While programs to date have primarily focused on mitigating the impact of school closures, programs that work well during the pandemic could be retained and integrated into education on a permanent basis. Distance printing and virtual approaches could also support in-service training and coaching programs for teachers.[133]

SECTION 6:

A new approach to language of instruction for the World Bank

ATTENTION SHOULD BE COMMENSURATE WITH THE IMPORTANCE OF THE CHALLENGE. Issues linked to LoI are at the heart of many global education policy considerations. Addressing them will present short-term challenges around retooling and retraining, but will provide long-term benefits in improved learning outcomes. For too long, the existence of multiple languages within a country has been perceived, by development partners and national stakeholders alike, as an unfortunate problem for education service delivery. National linguistic realities have simply been ignored, leaving teachers and children without the communication skills needed for successful learning. The Bank and development partners should lead the way to ensure, not only that LoI issues receive the attention they deserve, but that they are seen as a welcome opportunity for unleashing learning potential. The first thing the Bank should "do differently" regarding LoI is to address it consistently as integral to an overall strategy to improve learning.

IMPROVING LOI AND LEARNING OUTCOMES WITH FIVE FUNDAMENTAL PRINCIPLES. The losses of learning and foregone human capital can be mitigated with good evidence-based policies on language of instruction. Evidence accumulated over the past several decades provides a clear and consistent picture: students learn more when taught in their L1. In fact, there are very specific insights on the type of LoI model that will yield the best results for students to achieve L1 literacy, L2 literacy, and improved overall learning outcomes. The evidence presented in this paper points specifically to five key principles that together comprise a new approach to enhance learning in low- and middle-income countries:

- ***Principle 1: Teach children in their L1 from ECEC through at least the first six years of primary schooling.*** It is critical that instruction be in the language most students speak and understand best.
- ***Principle 2: Use L1 for instruction in academic subjects beyond reading/writing.*** Students need to master reading and writing in a broad range of disciplines and in all school subjects.
- ***Principle 3: Introduce L2 as a foreign language with a focus on oral language skills.*** Advance to L2 literacy and content area instruction only after students have achieved a level of proficiency in L1 literacy and L2 oral language. Students can master two languages in basic education if instruction and sequencing are optimized.
- ***Principle 4: Continue L1 instruction after an L2 becomes the principal LoI.*** Some L1 instruction continues to improve L2 performance in important ways even after the L2 becomes the language of instruction.

- ***Principle 5: Continuously plan, develop, adapt, and improve the implementation approach for LoI policies according to country contexts and goals.*** The World Bank should work closely with client countries and development partners to create and share resources as well as advocate for the equitable and high-quality schooling opportunities that appropriate LoI policies provide.

THREE STRANDS OF WORK TO OPERATIONALIZE THE NEW WB APPROACH TO LOI.

It is proposed that the Bank adopts a three-strand approach to addressing LoI issues and promoting policy dialogue:

STRAND 1	**Getting up to speed for proactive client engagement.**	WB staff will work together to assess the current situation with respect to LoI in a given country, the related political economy issues, and the ways this affects overall education goals and strategies;
STRAND 2	**Supporting proactive dialogue and actions to improve LoI policies.**	World Bank will move from being reactive to being proactive in engaging countries in policy dialogue on LoI issues. Rather than efforts to mitigate the impact of previous policy decisions (such as those that ask teachers to teach in a language they do not know) the Bank will engage client governments and other stakeholders early to "get ahead" on LoI issues and policies. It will seek to work with governments on a range of measures that address language policy as an opportunity to improve instructional practice and learning, consistent with the existing evidence base; and,
STRAND 3	**Leading on LoI issues.**	The World Bank will work with other partners to focus attention on LoI issues while creating, collecting, and disseminating the full range of cutting-edge knowledge and policy solutions and promoting long-term solutions for language issues in education. Building on existing work, the Bank will define priority areas for research, convene research networks and sponsors, conduct new analytic work, and disseminate work done by others related to LoI. This will include the engagement of private sector partners and foundations, along with the full range of stakeholders and development partners.

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- Under Strand 2, the Bank will move from being reactive to being proactive in engaging countries in policy dialogue on LoI issues. Rather than efforts to mitigate the impact of previous policy decisions (such as those that ask teachers to teach in a language they do not know) the Bank will engage client governments and other stakeholders early to "get ahead" on LoI issues and policies. It will seek to work with governments on a range of measures that address language policy as an opportunity to improve instructional practice and learning, consistent with the existing evidence base; and
- Under Strand 3, which will be parallel to Strands 1 and 2 and not sequential, the Bank's Education Global Practice will work with other partners to focus attention on LoI issues while creating, collecting, and disseminating the full range of cutting-edge knowledge and policy solutions and promoting long-term solutions for language issues in education. Building on existing work, the Bank will define priority areas for research, convene research networks and sponsors, conduct new analytic work, and disseminate work done by others related to LoI. This will include the engagement of private sector partners and foundations, along with the full range of stakeholders and development partners.

Each strand of work would be appropriately staffed and funded. Specific products and tasks would be agreed with management in annual work programs. Program progress would be regularly assessed by the management team as part of regular Education Global Practice management.

STRAND 1: GETTING UP TO SPEED FOR PROACTIVE CLIENT ENGAGEMENT. The consensus in the Education Global Practice is that to date we are too often in the position of addressing LoI issues when the government is already implementing or has already announced a policy to use an L2 exclusively from the start of primary school. Some of our most vigorous policy engagements have been to dissuade governments from pursuing goals they have already publicly announced. Operations do occasionally include LoI issues directly in lending related activities and in technical dialogue for foundational learning where opportunities present themselves, on an *ad hoc* basis. However, Projects and Project Appraisal Documents on basic education routinely ignore LoI issues even in countries where poor LoI policies are clearly an obstacle to learning. Promoting a new approach to LoI will reverse this reactive stance and replace it with a concerted effort to "get up to speed" on LoI issues. This involves the following activities:

- Understand how language is being used in education at the country level, including the reasons (historical and current) for language choice, number of languages spoken in and outside of school, teachers' linguistic skills in L1 and L2, teacher and community attitudes towards L1 and L2, policies and stakeholders (national and international) that govern school language use, and the state of policy implementation.
- Collect, review, and understand relevant existing LoI-related work, especially from Ministries of Education, national civil society organizations, and development partners. This would include existing language mapping data, assessment results, and all L1 TLM materials, as a start.

- Review the main challenges for every country in light of the stakeholder issues and approaches to good practice described in this document and key related documents.
- Undertake a systematic review of World Bank experience supporting improved LoI policies and implementation in lending and analytical work.
- Create regional focal points for LoI issues, potentially with overlapping responsibilities for foundational learning.
- Expand technical contacts with development partners and national civil society organizations to explore their activities, tools, and lessons learned.
- Include LoI dialogue in country, regional, and global network discussions around learning, programing, and funding.
- Assess LoI issues per country using a scale similar to the one proposed in the chart below.
- Initiate work on consultant rosters and TOR templates for key LoI improvement tasks.
- Prepare an annual work program for LoI issues with prioritized actions and regular progress reporting.

STRAND 2: PROACTIVE, SUPPORTED DIALOGUE AND ACTIONS TO IMPROVE LOI POLICIES. The second strand would be characterized by support for policy dialogue with clients on LoI issues. The prioritization exercises undertaken in Strand 1 would influence the intensity of engagement. Activities in Strand 2 would include but not be limited to:

- Strengthening analytical work at the global and country level, including language mapping for countries that lack clear information on languages spoken by school-age children and teachers.
- Strengthening analysis of the political economy and diverse stakeholders who affect LoI policy development and implementation.
- Increasing support to improve LoI policy implementation in lending, with an expectation that basic education lending in all medium- and high-priority countries would address LoI.
- Developing and disseminating resources and other tools for effective communication and advocacy with diverse groups of stakeholders.
- Engagement on language of assessment/examination issues at the national, regional, and global level.
- Developing specific advice for countries with "multiple L2's" or those that expect students to master a Language of Wider Communication and an L2 along with an L1 by the end of basic education.
- Developing mastery-based approaches to transitions from L1 to L2, including minimal thresholds for literacy subskills in L1 and oral language ability in L2 and agreement on related assessment.
- Supporting the use of L1 in ECEC (with a focus on oral language development and print awareness).
- Advancement of joint activities with development partners, such as the support of L1 instruction in foundational learning.
- Supporting improved classroom observation, teacher training, professional development, and coaching with LoI concerns fully integrated.
- In collaboration with other development partners and organizations, determining gaps in existing instructional materials and supporting the development of sets of materials (textbooks, teacher's guides, and supplemental reading books) in languages needed to reach at least 80 percent of students.
- Determining contextually appropriate strategies to reach the additional 20 percent of students (working in collaboration with other development partners and organizations).
- Ensuring that support for children with disabilities is fully integrated in all materials and instructional strategies.
- Disseminating or developing global public goods for academic vocabulary development by subject area where needed (mathematics, science, social studies, and so forth) to allow countries to benefit from previous experience.
- Initiating work on issues of LoI for tertiary education, adult and lifelong education, nonformal education, and technical and vocational education.
- Fully developing analytical and operational advice for the use of dialects in instruction.
- Deepening policy formulation strategies for FCV, and education for refugees and displaced persons.
- Using open licensing (such as Creative Commons) for all materials developed to ensure widespread dissemination.
- Sharing materials developed on global platforms such as the Global Digital Library (GDL).

More efficient and effective use of resources and improved learning outcomes will be among the positive results of a stronger LoI policy environment.

STRAND 3: LEADING ON LOI ISSUES. GIVEN THE CRITICAL IMPORTANCE OF APPROPRIATE LOI POLICY IN ADDRESSING LEARNING POVERTY, THE BANK WILL WORK WITH PARTNERS TO ADVOCATE FOR EVIDENCE-BASED POLICY AND PROGRAMING. Ongoing research, country contexts, political economy, and student needs are constantly changing, and policy and programing need to be responsive. Advances in technology continue to make it easier and less costly to develop, produce, and distribute instructional materials in multiple languages. Technology is also making teacher coaching and formative assessment more effective and efficient. Economies of scale and collaborative learning within and across languages and countries will enhance success. In order to support country, regional, and global efforts to develop and implement appropriate LoI policy and programing, the Bank, in collaboration with other development partners, will:

- Promote the use of effective data mining tools for monitoring and assessing language proficiency and use by teachers, students, and parents/families as needed for informed policy formulation and implementation.
- Expand support to the private sector for the development, production, and distribution of open source instructional materials in L1 languages.
- Facilitate the rapid and thorough analysis of language characteristics and language family groupings as a means of improving L1 materials, instruction, and assessment.
- Expand and implement technical work in support of assessment as a way to eliminate systematic measurement distortions, in exams, national assessments, and in international large-scale assessments.
- Promote effective policy and programing solutions, including adaptive materials for blind and deaf students, students with developmental language and other delays, and those who use non-written L1 languages.
- Share all materials, strategies, and learning through multiple national and international platforms and channels.

WHAT SUCCESS WILL LOOK LIKE. The Bank's new approach to LoI issues should be organized around a clear principle: to enhance the ability of children to learn throughout their school experience, based on early acquisition of foundational literacy skills. This means that all children will learn in a language they understand, and that all teachers will receive appropriate professional development, including L1 literacy acquisition if necessary and adequate teaching and learning materials. World Bank assistance will result in students who have fully developed their abilities through L1 instruction over appropriate timeframes, and acquired additional languages fully and efficiently. More efficient and effective use of resources and improved learning outcomes will be among the positive results of a stronger LoI policy environment.

ANNEXES

ANNEX A:
Ethiopia: Multilingual L1-Based Education

Context

Ethiopia is a large and diverse land-locked country in the horn of Africa. The country has a population of over 109 million people, which is projected to reach 190 million by 2050. The country has a federal structure consisting of nine regional states and two federally chartered cities,[134] which are administratively divided into zones and woredas (equivalent to districts).

Ethiopia is ethnically and linguistically very diverse, with more than 80 officially recognized languages and more than 200 dialects.[135] The five largest ethnic groups account for about 78 percent of the population (34.4 percent Oromo, 27 percent Amhara, 6.2 percent Somali, 6.1 percent Tigray and 4 percent Sidama).[136] Ethnic and linguistic diversity is greatest in the western and southwestern parts of the country. The Southern National and Nationalities and Peoples (SNNP) regional state has about 56 languages, far more than any other state. Historically, Amharic has been used as a *lingua franca* and as the national language. Ethiopia does not have a former colonial language as it was never colonized by a European country (apart from a five-year occupation by Italy).

Ethiopia's language policy in education

Primary and secondary education in Ethiopia follows a 4–4–2–2 structure, with eight years of primary education (split into a lower cycle covering grades 1–4 and an upper cycle covering grades 5–8) followed by four years of secondary education (split into a first cycle, grades 9–10; and second cycle, grades 11–12). At the end of primary school, a regional examination is administered to determine secondary entrance.[137] At the end of tenth grade, students take a national examination, which determines whether they pursue an academic or a technical and vocational education track. For those who move onto the academic track, they must take another national examination at the end of twelfth grade to qualify for university enrollment.[138]

Despite the presence of extensive linguistic diversity in the country, Amharic, a language that originated from the Amhara region, served as the sole medium of instruction in primary schools throughout much of the country's modern history.[139] English was taught as a subject in all grades and used as a language of instruction at upper primary, secondary and post-secondary levels.

In 1991, a new government led by the Ethiopian People's Revolutionary Democratic Front (EPRDF) took power. The EPRDF enacted policies significantly different from previous regimes. It acknowledged the ethno-linguistic diversity of the country and established an ethnic federalist structure that decentralized power to regional governments. The EPRDF promoted the use of local languages for administrative and educational purposes. Amharic continued to be the working language of the federal government.[140] The biggest change in educational language policy came with the introduction of the Ethiopian Educational and Training Policy (EETP) in 1994. The EETP explicitly recognized the advantages of L1 education for children's learning. The EETP made primary education in 'nationality languages' compulsory followed by transition to English as a medium of instruction in secondary and higher education. Amharic is to be taught as a language of countrywide communication. ETTP also mandated that in any given area the language of teacher training for kindergarten and primary education be the nationality language used there.

Implementation

In the early years of policy implementation, larger languages were quickly adopted as languages of instruction in almost all regions. Gradually, the number of languages used in schools increased and as of 2015, about 30 languages were being used for part or all of the primary grades, with about 51 languages being offered as a subject. [141] In all regions of the country, English is introduced as a subject in grade 1, while Amharic is introduced as a third language, starting in grade 3 or 5.

Implementation in urban areas: Most urban areas of Ethiopia are ethnically and linguistically diverse due to internal migration. Amharic is often used as a common language. In most urban areas, in addition to the regional or local languages, Amharic is offered as a medium of instruction, sometimes within the same school. By contrast, in Addis Ababa, the capital and largest city, only Amharic is offered as the medium of instruction up to sixth grade.

TABLE A-1: Coverage of instruction in L1

REGION	% PUPILS LEARNING IN A LANGUAGE THEY SPEAK AT HOME	
	Grade 4	Grade 5
Addis Ababa	**86.3**	**82.7**
Amhara	**96.8**	**94.7**
Oromia	**88.8**	**88.8**
SNNP	**68.2**	**0.1**
Tigray	**99.9**	**99.8**
Somali	**76.7**	61.6
Afar	**47.0**	47.2
Sample average	**80.5**	59.8

Source: Young Lives Ethiopia survey 2012–13.

Variation in length of L1 instruction: There is significant variation in the duration of mother-tongue instruction across regions. Some of the major languages follow a late-exit approach, in line with the EETP, using L1 languages as the medium of instruction for six to eight years for all subjects (in Amhara, Oromia and Tigray regions) followed by English. On the other hand, most languages in Benishangul-Gumuz, Gambella and SSNP are used only for three to five years, followed by English for all higher grades. While census-based information on the number of students learning in their L1 is not available, a survey by Young Lives (2014) conducted in the seven regions of the country shows that 80.5 percent of grade 4 students and 60 percent of grade 5 students are learning in a language that they speak, with variation by region as illustrated in Table A1.

While there is strong commitment to MTB-MLE from the federal government and regions, the shift from policy to implementation involves challenges, some of which are highlighted below:

- ***Selection of language in diverse communities:*** An important challenge stems from the selection of language of instruction in contexts where there is high linguistic diversity with many demographically small languages concentrated in a small geographic area. This type of situation is particularly apparent in many parts of the SNNP region. In these contexts, a single language (for example, the language of administration at the zone level) is chosen to serve as the medium of instruction, while in reality it might not be the L1 language of many students. Therefore, "mother-tongue education" for many students continues to be education in a regional or zonal administrative language.[142] To address this challenge, the region attempted to harmonize languages with similar linguistic features to create a common hybrid language ('Wogagoda,' created from the harmonization of Wolayta, Gamo, Gofa and Dawro). This effort was very unpopular and was ultimately abandoned.[143]
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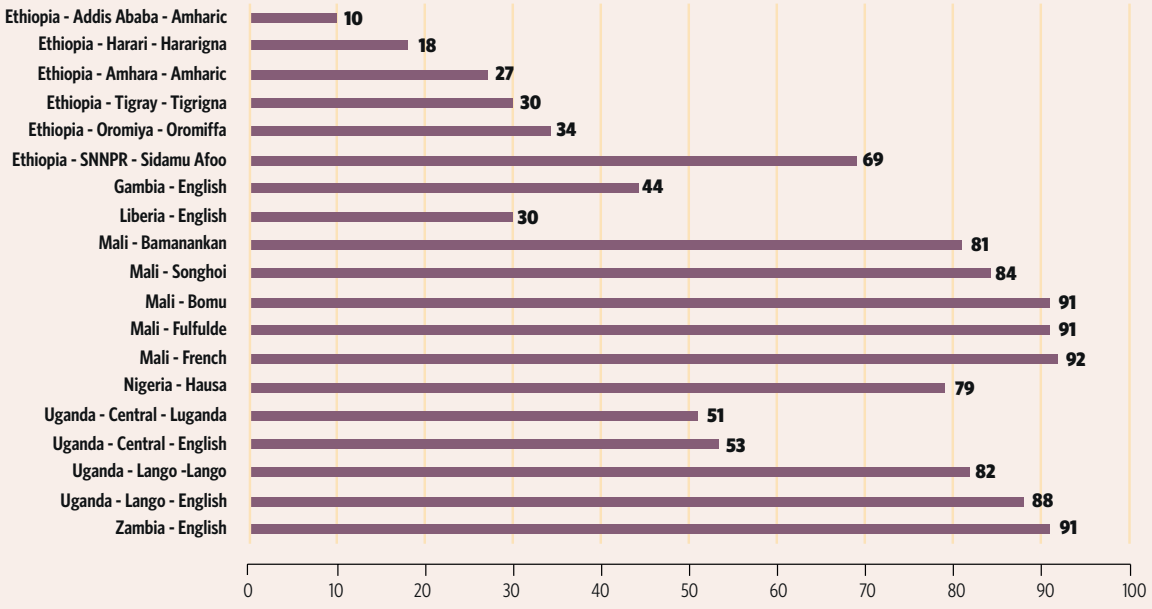
- ***Development of languages to be used in education:*** Another challenge relates to the level of development of languages to meet the demand of the primary education curriculum. Cohen (2007) argues that there is significant variation across languages in their level of development and adequacy for use in education, and the current implementation process can lead to widening inequality across groups.
- ***Lack of trained teachers:*** In the early years of implementation, for many languages, trained and qualified teachers who spoke them were not available, and regions were frequently obliged to use unqualified teachers.[144] However, Ethiopia has made significant progress here. Pre-service teacher training programs for lower-primary teachers in many of these languages are gradually being introduced at Colleges of Teacher Education, which are managed by regions. In-service teacher training programs have been expanded to upgrade the qualifications of unqualified teachers. Primary school teachers are also recruited locally by woredas (equivalent to districts), which is gradually improving the situation.[145]

- ***High cost of providing textbooks and other teaching and learning materials:*** For regions where there are many demographically small languages, the cost of printing textbooks and TLM remains high as current approaches to procurement do not permit economies of scale. Further, for many of these languages, written material other than textbooks remains scarce. Despite these challenges, Ethiopia has made considerable progress in improving provision of textbooks and teacher guides, in large part with support from development partners including the World Bank.[146] By 2013, the country had achieved a 1:1 student to textbook ratio for many subjects, notably English-medium textbooks for the secondary grades, and for most subjects in the four major regional languages for the primary grades.[147]
- ***Difficulty transitioning to English-medium instruction in higher grades***: For many students, the transition to English-based instruction in the upper primary or secondary phases is abrupt and problematic. Most students only have a limited grasp of English, and low reading proficiency in their L1 when they transition to English-medium instruction.[148] The use of English in Ethiopia is very limited in students' lives. As Heugh et al. (2007) describe, students rarely encounter any kind of English-speaking environment outside the classroom. Teachers also lack competency in English, making it very challenging for them to teach in English. [149]

Impact of the mother-tongue language policy on student outcomes

There are very few studies that have rigorously examined the impact of the L1 language policy in Ethiopia on educational attainment and learning. Studies that have looked at impact on years of schooling in the early years of implementation find mixed results. Ramachandran (2012) assessed the effect of the 1994 language policy change on educational outcomes and found that L1 instruction had had a positive effect at all levels of schooling, leading to a 12 percent increase in the number of students completing six years or more of schooling. Chicoine (2019) and Gebre (2015) found a negative impact on enrollment and years of schooling among the first cohorts of students undergoing the policy. These negative results are partly explained by the implementation challenges in the early years of the reform.

FIGURE A-1 Percentage of non-readers at the end of grade 2 or beginning of grade 3



Source: RTI International, 2014

The evidence on student learning is limited; however, the few existing studies show promising results. Findings from the analysis of the national learning assessment at the end of grade eight in 2000 and 2004 show that students taught in their L1 for eight years of primary school perform better than those who were taught in the L1 for five years.[150] Further, comparison of Early Grade Reading Assessment (EGRA) results across Sub-Saharan African countries provides evidence that the percentage of non-readers[151] was lower for several language groups in Ethiopia, compared to other countries that have multiple languages but are not using local languages in education.

Within Ethiopia, there is also evidence that students who learn in their L1 longer have better learning outcomes than those who transition early to English. Heugh et al. (2007) find that in the 2004 Grade 8 regional examinations, the mean scores of students who are taught in a national language through eighth grade and take the exam in that language have higher scores (except in English) than those students attending primary schools where English is the LoI.

TABLE A-2: Mean Grade 8 scores (%) by subject and medium of instruction (2004)

	SUBJECTS				
LOI	**English**	**Math**	**Biology**	**Chemistry**	**Physics**
Oromiffa	39.1	44.4	49.1	43.0	39.5
Amharic	39.1	41.3	48.3	44.6	41.8
Tigrigna	41.6	42.8	48.4	43.6	39.3
Somali	42.4	42.6	36.3	37.6	34.5
English	39.4	35.9	35.9	37.3	31.5

Source: Adapted from Heugh et al. (2007: Table 5.2.4)

ANNEX B:

Rwanda: A Changing Education System for a Changing Time

Between 2006 and 2016, Rwanda's per capita gross domestic product (GDP) grew at five percent per year, one of the fastest rates in the world, and second only to Ethiopia's among African countries. In 2018, per capita GDP was about four times greater than it had been 25 years earlier. Rwanda is now implementing its National Strategy for Transformation (NST) covering the period 2017–2024. This follows the earlier poverty reduction strategy known as EDPRS2, and is a further step toward Vision 2050, which calls for Rwanda's attainment of upper-middle-income status by 2035 and a much higher quality of life for Rwandans by the middle of the 21st century.[152] Due to Rwanda's tumultuous past, there is national unity around these ambitious goals. Among the key drivers identified for sustained, inclusive growth is human capital development, making education a key component in this plan.

Current education context

As of 2013, Rwanda had achieved a gross enrollment rate to over 100 percent, and has since maintained a low rate of out-of-school children. However, the primary school retention rate remains below 80 percent. The gross enrollment rate in upper secondary education increased from 21 percent in 2010 to 30 percent in 2017.[153] Although Rwanda does not participate in international assessments, an Early Grade Reading Assessment was administered to a sample of students in Kinyarwanda. The results clearly leave ample room for improvement: among grade 4 students, 32 percent could read a grade 2 text with comprehension, as could 47 percent of grade 6 students.

While language remains a fraught subject in Rwanda, Kinyarwanda has been given national language status, given that it is spoken by 99 percent of Rwandans, according to the 2002 census. The number of English speakers in Rwanda was estimated to be five percent.

Rwanda currently operates a 6–3–3 exam-based system for public education. The first six years of primary (P1–P6) are a universal right. Students obtain access to three years of junior secondary (S1–S3; also called O Level, "ordinary level") and three years of senior secondary (S4–S6; also called A Level, "advanced level") upon successful completion of qualifying examinations. At the end of sixth grade, students take an exam to qualify for secondary school and obtain their Primary Leaving Certificate. In 2018, 250,000 students sat for this exam and 81 percent passed.

Currently, Rwanda's primary completion rate is about 61 percent, while other low-income countries have a rate of about 66 percent. Likewise, completion rates for lower-secondary school are 34 percent in Rwanda versus 37 percent in low-income countries on average. There are stark urban/rural

disparities. Recent measures indicate that students in P1 (first grade) can read 7.7 words per minute in Kinyarwanda, and students in P2 can read 25 words per minute. As a comparison, norms for English-speaking students learning to read in English in the United States are 60 for the end of first grade and 100 for the end of second grade (fiftieth percentile) (Hasbrouck-Tindal 2017).

A survey by the Rwandan Ministry of Education (MINEDUC) in 2005 found that 74 percent of all Rwandan adults were able to read and 96 percent were able to write—regardless of the level of education attained, including 'never attended.' To achieve its Education Sector Strategic Plan-II goals, the country is investing to enhance teachers' professional competence while also expanding the teaching force.

While examinations remain an important element of the Rwandan education system, a recent shift incorporated competency-based assessments to encourage critical thinking and deprioritize rote learning.

Rwanda is in a quandary comparable to that of several other nearby countries in terms of its dearth of qualified, appropriately trained teachers who are proficient in English and Kinyarwanda. With more and more students enrolling in free, basic education, as well as the new LoI policy, there is an even more urgent need for qualified teachers. In order to improve teacher education standards as well as build capacity within the system, MINEDUC established the Rwanda Teacher Service Commission in 2008 and is hoping to put in place an official licensing process. However, despite these measures, and sufficient funding, there are still substantial shortcomings with regard to teacher quality and efficacy.

Language of instruction policy

Rwanda has long struggled with its LoI in primary and secondary schools, experimenting with trilingual and bilingual models.

Early language policies after independence: Shortly after gaining independence from Belgium in 1962, the Rwandan government designated Kinyarwanda the medium of instruction for grades 1, 2 and 3. Beyond grade 3, the schools shifted to French.

A shift towards the L1: In 1978 the policy of 'Rwandization' was introduced as a decolonizing effort in the country. As part of this initiative, the Ministry of Education (MINEDUC) extended primary education to grade 8 and made Kinyarwanda the LoI for all eight years. This was intended to allow students to gain proficiency in their primary language before moving to an international language.

Additional language policies have since been enacted, including a 2008 Cabinet resolution shifting the LoI in all public schools from Kinyarwanda and French to English (see Table B.1).

TABLE B-1: LoI Changes for Different Year Groups in 1996 and 2008

	LOI + LANGUAGES AS A SUBJECT	
LEVEL	1996 MINEDUC reform	2008 Cabinet change
P1 – P3	Kinyarwanda + French & English	English + Kinyarwanda & French
P4 – P6	French & English + Kinyarwanda	English + Kinyarwanda & French
S1 – S3	French or English + English or French	English + Kinyarwanda & French
S4 – S6	French or English + English or French	English + Kinyarwanda & French

Does more English mean better English?

In 1996, as part of a rehabilitation effort after the Rwandan genocide of 1994, the government designated Kinyarwanda as LoI from grades 1 to 3, with English joining French as LoI for grades 4 to 6. In October 2008, the Rwandan Cabinet issued a resolution requiring the Minister of Education to "put in place an intensive program for using English in all public and Government-sponsored primary and secondary schools and higher learning institutions".[155] This decision meant that English would replace Kinyarwanda, the language of Rwanda and LoI for the first three years of school, and French, the LoI since colonial times for Primary 4 onward. English would be the sole LoI across all grades and levels, primary through tertiary. This new policy was put into effect immediately. Teachers were provided with additional training in English, and were threatened with penalties if they missed training sessions. In rural areas where schools were already burdened with high teacher:student ratios and double shifts, teachers who were primarily graduates from Francophone teacher training institutes faced termination of their employment unless they improved their English skills quickly. In 2010, the MINEDUC retracted this decision to vigorously promote English in early grades following a growing concern that young Rwandans were uncomfortable speaking Kinyarwanda, as well as growing awareness among African academics about the importance of L1 instruction in early years.

The new policy

In December 2019 the government of Rwanda announced a new LoI policy, mandating the use of English as the primary language for all years of education. An official communiqué released by the MINEDUC stated "This is an important requirement, and schools are required to strengthen pupil/students debates, language competitions, appropriate measures to learn and use English language, and supporting and monitoring measures to ensure use of English language in class, on the school premises, and to ensure mastery of the language, so that it enables pupils/students to understand better and obtain higher scores in other subjects. All schools are required to strengthen teaching of Kinyarwanda to promote Rwandan cultural values, and teaching of French language to promote trilingualism for global competitiveness." The new policy overturns a 2015 reform that mandated teachers deliver lessons in Kinyarwanda for the first three years of primary school, and switch to English in year four. The government changed the LoI from French to English in 2008.

These Rwandan developments can be viewed as a reflection of ongoing tensions between global education academics and politicians over LoI. The effective renunciation of L1 is also likely to stem from pressure from parents, many of whom were reportedly against teaching in Kinyarwanda in the first place.

What prompted the shift?

As outlined above, the government of Rwanda harbors ambitious goals with regard to the future of the country, and a robust and global education system is a key lever in that plan. In 2007, Rwanda joined the East African Community, a majority Anglophone conglomerate. In 2009, Rwanda joined the Commonwealth, as part of a conscious move to place the country firmly within several powerful bodies. These factors provide a strong impetus to favor English as the language of business—over and above the post-genocide push to distance the country from its Franco-Belgian colonial roots.

Societal pressures have a role to play as well. With an increasingly global economy, Rwandan parents desire an English education for their children, to arm them with the skills needed to compete in today's world. This desire is particularly evident among parents able to send their children to private schools,

where teachers might possess a stronger grasp of the language as well as more resources to deal with the radical change in policy described above. Children from poorer households tend to experience the adverse aspects of the change, in both the short and the long term.

Causes of concern

There is a growing consensus among the global community that a learning gap in the first few years of school has far-reaching ramifications on all future educational goals. Students who do not learn to read in the early years struggle to learn mathematics, science and social sciences. L1 instruction in the first three years of primary school (as a minimum) is crucial to the attainment of language skills. Students who are taught in their L1 in the early years learn to read faster than those who are taught in an unfamiliar language.

A 2017, a Joint Review of the Education Sector recommended emphasizing quality of education not only in languages but also mathematics, making it crucial to provide teachers with resources on effective mathematics instruction in English.

The swift nature of this decision as well as its execution have left room for concern among several stakeholders, including development partners familiar with local (regional) circumstances. The following issues warrant particular attention:

- Many teachers lack the required competence to provide a good model of English usage.[156] The Building Learning Foundation's baseline study found that only 37 percent of P1–P3 teachers meet the assigned benchmark of English competence.
- Despite several international and national interventions, the quality of language teaching in primary education remains weak.[157]
- Instructional materials in both English and Kinyarwanda remain limited. As of 2018, the average pupil to textbook ratio was 5:1.[158]
- Widespread use of double shifts and large class sizes limit the amount and quality of instructional time available for language and literacy teaching.
- The Competence Based Curriculum[159] (CBC) demands a relatively rich English vocabulary which is beyond the command of most learners, and even many teachers.
- As a result of changing language policies, Rwanda does not have a history of using English as a language of wider communication. Most children, particularly those not in urban schools, encounter English predominantly in schools and rarely in their homes.

These concerns have been widely echoed in discussions within communities and on social media, by families of children impacted as well as by development partners. Local media outlets have questioned the haste of this move as well as the government's ability to efficiently execute this decision, and at the same time follow through on its promise of a high-quality education.

Within days of the announcement, the MINEDUC issued a statement with regard to its decision:

1. *All private schools that were previously using English or French as a medium of instruction at lower primary level are allowed to maintain this practice.*
2. *All public and government-aided schools currently using Kinyarwanda as medium of instruction at lower primary level will gradually transition to using English as medium of instruction, within a determined period to be communicated by the Ministry of Education.*
3. *Kinyarwanda will be taught as a mandatory subject in both private and public schools*

This was followed by the implementation of this decision solely in public schools, with a phased-out approach in private schools.

While it remains to be seen how this decision impacts the education quality of students in schools today, the following four recommendations, derived from the World Bank literacy policy package, should lie at the heart of any future iterations of the policy:

1. Ensure political and technical commitment to clear goals, pathways, and measures for literacy;
2. Ensure effective teaching for literacy;
3. Ensure timely access to more and better texts that are appropriate to age and skill; and
4. First teach children in the language they speak and understand.

In order to adapt to the new policy change proposed, bearing in mind those recommendations, the following steps could be taken:

1. In addition to developing tools for English language proficiency, materials could also be developed to aid early childhood ESL education. Teachers should be trained on effective strategies to engage learners and build language skills in multilingual settings.
2. Age and context appropriate literature should be created (or sourced) and provided to the schools as they transition to locally developing textbooks and other materials in English.

As mentioned in the Ending Learning Poverty report, in many countries, shifting to teaching in the L1 in the early primary years proves to be essential to improving performance. Avenues for further research and analysis include finding out if mother-tongue literacy instruction has positive effects on student learning in other core subjects, including English, Kiswahili and mathematics. It is also prudent to explore the role of a teacher's own proficiency in the language and what kind of training they receive on learning outcomes of students. Finally, if the government of Rwanda seeks to go forward with its 'English-first' policy, it would be wise to explore and learn from successful—and suitably paced—implementation of such a move in analogous contexts elsewhere.

ANNEX C:

Hong Kong: Language of Instruction in Secondary Schools

Introduction and Language Context

The majority of the population of Hong Kong SAR, China (hereafter "Hong Kong") is bilingual or trilingual. Hong Kong has a population of 7.5 million,[160] 95 percent of whom are ethnic Chinese and speak Cantonese—a southern Chinese language—as their L1.[161] Chinese and English[162] are official languages in Hong Kong, with Cantonese being acknowledged as the de facto official spoken variety of Chinese, while Mandarin (also known as Putonghua) is also accepted. Following the Handover of Hong Kong in 1997 from the British to the Chinese, the Education Bureau of Hong Kong (EDB) promulgated the explicit aim for all students "to be biliterate (master written Chinese[163] and English) and trilingual (speak fluent Cantonese, Mandarin Chinese, and English)."[164] As of the 2016 Government Census, 77 percent of the population aged five to 59 were at least bilingual, and 51 percent trilingual. For the age groups that have attended compulsory education since the enactment of the Education Bureau's "biliterate and trilingual" policy (ages five to 29), 87 percent are bilingual, and 63 percent are trilingual.[165]

Language of Instruction in Primary Schools: Historical Context and Demographic Necessity

L1 instruction began as a historical and demographic necessity. Language policy in the British colony prior to World War Two favored English language instruction. Given that education was largely limited to the elite classes, English language education was by and large the norm. Very few local Chinese attended school at this time, and the British were largely unconcerned about the educational attainment of the local population,[166] demonstrated by the fact that, in 1950, only about one-quarter of the population over the age of 15 had completed primary education.[167] Interestingly, for the small population of local Chinese who did attend school, primary education was in the local language (Cantonese), rather than the national language (Mandarin Chinese). This led to Hong Kong being the only place in East and Southeast Asia where a local rather than a national language functioned, and continues to function, as the LoI in primary education.[168]

The end of World War Two brought about immense demographic changes that had a major impact on Hong Kong's language of instruction policy. The influx of Chinese-speaking immigrants and refugees from Mainland China after 1949 was a major factor that propelled the government in

1950 to permit the establishment of primary schools using Chinese as the language of instruction (LoI).[169] Hong Kong had to quickly train a large number of teachers from the local population to teach the Chinese-speaking migrants from the Mainland [170]. Primary education was recognized as an explicit goal in 1965, and became both free and compulsory in 1971. The decision to adopt Chinese as the medium of instruction in primary education was born out of necessity, both in terms of teacher ability and student profile.

With the education sector growing at an unprecedented pace,[171] there was a powerful incentive to align educational policies with best practices emerging from research. For more than half a century, the Government has recognized—and institutionalized—the benefits of L1 instruction on student learning outcomes. The 1974 Report of the Board of Education on the Proposed Expansion of Secondary Education recommended "Chinese should become the usual medium of instruction in lower forms of secondary schools; every effort should be made to develop good textbooks for all subjects written in Chinese, to train teachers capable of instructing through the medium of Chinese." [172] The 1990 Education Commission explicitly stated that students can learn better in their L1, as the use of mixed-code, "can lead to time being wasted on translation of English texts in class and, worse still, learning being reduced to rote memorization of facts in English."[173] In 1994, the Standing Committee for Language Education and Research (SCOLAR) was formed, with the explicit aim of realizing the Education Bureau's ambition for the population to become biliterate and trilingual. The 1997 "Medium of Instruction Guidance" issued to schools by the Education Department described the educational benefits of L1 teaching, whereby the use of Chinese as the LoI would remove language barriers impeding the study of most subjects, and students "...will be better able to understand what is taught, analyze problems, express views, develop an enquiring mind and cultivate critical thinking. Mother-tongue teaching thus leads to better cognitive and academic development."[174] The implementation of L1 instruction was therefore enabled by a policy environment that drew heavily from research and continuous internal evaluation.

Due to demographic necessity and alignment of policies to best practices emerging from the evidence, the topic of language of instruction (LoI) at primary school has been "wholly uncontroversial as policy and largely unproblematic in practice." [175] The teaching of students in a language they understand—and in which they can best express themselves—has paid significant dividends for the learning outcomes of the population. Indeed, Hong Kong has some of the highest learning outcomes in the world. Grade 4 students in Hong Kong scored second, first, and third in the world in PIRLS 2006, 2011, and 2016, respectively.

LoI in Secondary Schools: Politics, the Economy, and National Identity

Secondary—not primary—schools have since been at the center of LoI policy debate over the decades.[176] With the LoI in all public primary schools being Chinese, and the LoI in universities being predominantly English, the transitional period of secondary school has subsequently been the main locus of change and focus of debate over the years. The subsequent section will examine LoI policies in secondary schools in Hong Kong.

Contemporary LoI policies in secondary schools in Hong Kong have mirrored the historical, economic, and political changes experienced by the city state over the past five decades. Language policy in secondary schools in Hong Kong has seen four different and distinct LoI stages.[177] They can be briefly characterized as follows:

1. The decades prior to the Handover (pre-1994);

2. The immediate years before the Handover (1994-97);

3. The decade following the Handover (1997-2010); and

4. The current policy (2010 to present).

The pre-1994 period saw a rather l*aissez-faire* approach to LoI, whereby primary schools were taught in Cantonese, while secondary schools were free to select their own LoI. This led, however, to a preponderance of schools claiming to be English-medium schools but which, in effect, used mixed language teaching. This was seen as a consequence of inadequate English language skills on the part of both teachers and students, and it led to the 1994 streaming policy that split secondary schools into three categories: Chinese-medium, English-medium, or dual-medium schools. Although an individual school could still make a decision regarding its LoI, English-medium schools had to demonstrate that their students had sufficient language ability to be able to learn effectively in English. [178] The change in sovereignty of Hong Kong in 1997 led to a subsequent change in LoI policy, whereby all secondary schools where required to teach through the medium of Chinese only, with the exception of 114 schools granted exemptions to continue with English-medium instruction[179] (see Figure C1). These schools had to meet criteria that showed that their teaching staff and students were capable of teaching and learning effectively through English. [180] At the start of the 1998–99 school year, 307 public secondary schools (the remaining 70 percent of schools) switched to Chinese-medium instruction. [181] The latest change came in 2010, when the Education Bureau abolished the classification system, such that a school could no longer be labelled an English-, dual-, or Chinese-medium institution. Instead, schools could offer English-, dual-, and Chinese-medium classes. This arrangement was brought in at the start of the 2010–11 school year, and still obtains today.[182]

FIGURE C-1: Percentage of students in English- and Chinese-medium secondary schools, 1960–1998, (taken from Evans and Morrison, 2017).

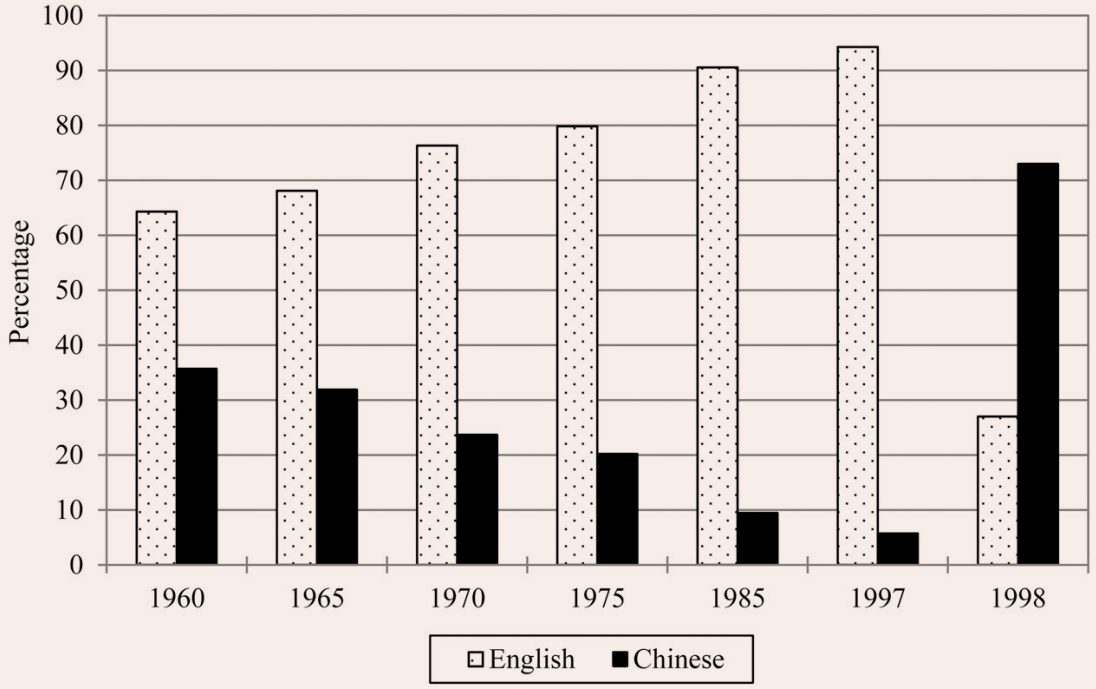
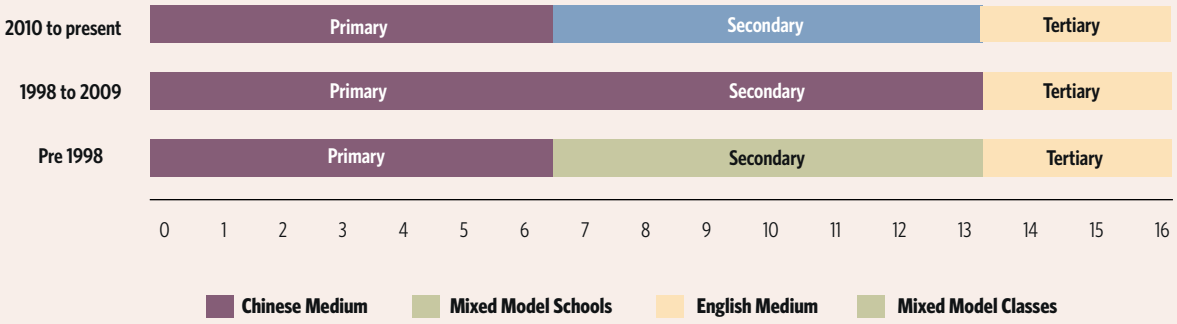


FIGURE C-2: Medium of Instruction in Hong Kong over time (adapted from Evans and Morrison, 2017).



Strengths of Choice/Implementation:

For secondary schools, the government attempted to offer autonomy of choice regarding LoI decisions during different phases, while providing appropriate support and resources (including research). Secondary schools have been, and are, supported to make autonomous decisions on the LoI in their schools as a whole (before 1997) and in their classes (after 2010). Even during the intervening period of Chinese-medium instruction (between 1998 and 2010), the government allowed exemptions if certain criteria were met (teaching staff had to prove capable of teaching effectively through English, while students, conversely, had to be demonstrably capable of benefiting from the content imparted through English). To this day, criteria continue to be applied to schools that host English-medium classes to ensure the effective use of English as a LoI for both students and teachers. These criteria include: ensuring that student ability within the school is such that they can learn effectively in English; maintaining teaching capability, to be based on the principal's assessment and certification; and setting language benchmarks for teachers (with EDB inspectors visiting schools to gather information on their aptitude for using English as LoI).

To support effective English-, Chinese-, and dual-language instruction, the EDB's Curriculum Development Institute (CDI) publishes all curriculum support materials bilingually. Materials include resources such as teaching syllabi, curriculum guides, and subject teaching guidelines. The CDI has produced English–Chinese glossaries of terms commonly used in the teaching of Secondary 1 to Secondary 7 syllabi. Best practices are collected and disseminated to the public in documents such as "The Language Teaching Album: A Collection of School-based Practices", supported by various other resources such as online publications, lesson plans, and sample worksheets for teachers of English and Chinese, available online. A Task Force on Language Support was set up by the Education Bureau (EDB) in 2004 with the aim of raising the standard of language proficiency in Hong Kong. It consists of teaching consultants who provide Chinese (including Putonghua) and English language curriculum development support services to all primary and secondary schools. Language support officers work closely and intensively with teachers in a variety of school contexts on projects initiated by the schools.

Since the early 1990s, public examinations to determine university places have been offered in both English and Cantonese.[183] Students are able to select the language of assessment by subject (with the exception of subjects in which the language used is axiomatic, for example Chinese language) which facilitates alignment between class and assessment languages. Furthermore, to rule out potential inferences or implications that could flow from the fact of having taken a given subject through the medium of one particular language—Chinese, for example—in contradistinction to the

other, the examinations board has mandated that the language of examination is not indicated on student certificates.[184] In 2015, the overall percentage of students who opted to take examinations in English (composite number, derived from all non-axiomatic subjects) was 42 percent.

The EDB has and continues to make research-based decisions on LoI. Over the past few decades, beginning as early at 1982, the EDB has commissioned more than 15 major research studies on outcomes and impact of LoI in schools.[185] The resulting findings have been used to make decisions on LoI policy, with the most significant being the roll-back of English- and Chinese-medium schools in 2010. A seven-year longitudinal study in 2008 (Tsang), found that Chinese Medium of Instruction students were disadvantaged in gaining entrance to universities. Roughly two years later, the Government introduced the policy that replaced the distinction between English-, Chinese-, and dual-medium schools, in favor of English- and Chinese-medium classes (within a single school, as appropriate).

Weaknesses of Choice/Implementation:

Despite the ostensible designation of English-medium classes (and earlier, of English-medium schools), teachers generally use Cantonese to communicate with their students.[186] This code-switching and code-mixing reflect a larger phenomenon that can be seen elsewhere in bilingual (or trilingual) education systems, where many teachers lack the requisite language proficiency to deliver content in a second language. A set of qualitative interviews conducted by Evans and Morrison with students in English-medium classrooms indicated that many of them sit in classes with teachers who "close the door" before embarking upon clandestine explanations in L1.[187] As recently as last year, the Education Bureau conducted an English Language Proficiency Assessment for Teachers in Hong Kong. The results showed a high degree of proficiency in Reading, Listening, and Classroom Language (with attainments rates of 84 percent, 87 percent, and 92 percent respectively). However, Writing and Speaking attainment was significantly lower (42 percent and 58 percent, respectively, EDB, 2019).

The previous retention of an English-medium instruction (EMI) stream was seen to have advantaged students in English-medium secondary schools in gaining admission to local and foreign universities. The 1997 mother-tongue instruction policy was unpopular when first introduced, as parents thought that the English language held more prestige and utility internationally.[188] When the exemptions were granted to 114 schools to continue with EMI, administrators from the remaining (and majority) Chinese Medium Instruction (CMI) schools felt as if they had been relegated to "second-class schools and their students, second class students." [189] A set of questionnaires sent to all CMI schools showed 53 percent of administrators [190] indicated that their schools had suffered the loss of high-ability students, with 32 percent indicating that the academic standards of their students had subsequently dropped. The public perception regarding the utility of English-language instruction for academic and economic outcomes turned out to be well founded. Despite research in the early 2000s that found students in Chinese-medium schools boasted *higher* learning outcomes[191] and that Chinese-medium schools had higher quality teaching-learning processes, [192] a longitudinal study of students who attended English- and Chinese-medium schools published in 2008 showed "significant negative effects on CMI students' chances of success in educational attainments in the HKCEE and HKALE (public examinations)", with the major obstacle being the lower achievements in the subject of English language in CMI schools as compared to EMI students.[193] The public outcry over the misalignment of CMI secondary schools with EMI tertiary institutions led to the subsequent roll-back of English- and Chinese-medium school designations in favor of a class-based approach. As alluded to above, the examinations board continues to combat the stigma attached to Chinese-medium schools by not specifying the language used in a student's examination record.

Related to the issues of alignment between CMI secondary schools and EMI tertiary institutions is the significant impact of students' English abilities on their adjustment to subsequent university study. Attempts to align secondary school LoI with pre-university public assessments belies the fact that all tertiary institutions in Hong Kong are English-medium. There is evidence that students who attend majority English-medium classes enjoy a distinct and substantial advantage in English language over their peers in majority Chinese-medium classes.[194] The same study showed also that graduates who had been taught mainly in English and who sat exams in English self-reported that they had adapted better to local university study.

Lessons Learned

The Hong Kong experience yields the following noteworthy lessons:

1. The necessity to rapidly universalize primary education meant that Hong Kong aligned its policies to two factors: what was available (Chinese-speakers who they could quickly train to become teachers), and what was most likely to be effective (emerging evidence on the effectiveness of teaching children in their mother-tongue). L1 education at primary levels benefited from demographic and historical circumstance: the rapid influx of Chinese-speaking refugees and the universalization of primary education necessitated the use of local Chinese-speaking teachers. In addition, the universalization of primary education was also a time when policy makers drew from international research and best practice to further solidify the policy of L1 instruction as the effective basis for forming cognitive abilities and human capital. At that time, L1 instruction in primary schools amounted to an uncontroversial decision. If it has subsequently evolved, then this has merely to become a largely self-evident policy.

2. At the secondary level, students, schools, and parents were given the autonomy to make LoI decisions, which were supported through a variety of technical means and subject to transparent validation processes to ensure adherence to a predefined level (that is, of teacher and student language proficiency). Supportive policies such as bilingual curriculum materials and examination policies enabled the effective and consistent implementation of these throughout public schools. Explicit policy goals—biliteracy alongside trilingualism—set the stage for the formulation, implementation, and adjustment of comprehensive policies.

3. Economic considerations and the social capital of learning in a more "international" language will be the driving factor behind parents' and students' decisions—and the alignment of assessment and higher education with LoI policies in secondary school should be of paramount importance. Language policies that evolve with the frontiers of research-based best practices, which fit national goals, and are sensitive to economic considerations, are most likely to survive, and hold sway, over future decades.

ANNEX D:

Middle East and North Africa: Mastering Arabic & the Transition from Colloquial to Formal

Arabic is spoken by more than 420 million people, making it the sixth most spoken language across the world. It is the official or co-official language of 25 countries,[195] and is used by more than 1.8 billion Muslims. Arabic can be considered as a continuum of forms, from the formal Classical Arabic—the language of the Qur'an—to the many informal, colloquial versions used in everyday communication. Toward the formal end of the continuum, some linguists describe Modern Standard Arabic (MSA) as a version that dates back to the 19th century, and has since dropped some words and phrases and added some new technical vocabulary in response to the times.[196] MSA is the written form that is used across Arabic-speaking countries for literary works, official documentation, mass media, and educational institutions. However, MSA is not anyone's L1; it is acquired through formal education.[197]

Formal Arabic (Classical or MSA) differs significantly from the various versions of colloquial Arabic spoken daily and acquired in homes as the L1. There are many varieties of colloquial Arabic spoken across countries or groups of countries, including (proceeding very approximately from east to west): Iraqi, Gulf Arabic, Yemeni, Levantine, Sudanese, Egyptian, Maghrebi (North Africa), and Hassaniya (mainly Mauritania). The formal version of Arabic has not changed over time, unlike the fast development of colloquial Arabic (particularly through the media), resulting in widening gaps between the two.[198]

Children grow up hearing a colloquial form of Arabic in their homes and communities. As soon as they enter school, children are expected to learn to read and write in formal, standard Arabic. Their experience with this form of Arabic is very limited until then. Parents in Arabic-speaking countries are less likely to have children's books in the home (Figure D1) and less likely to read to their children when they are young (Figure D2) compared to parents in other countries. For example, only around 20–25 percent of grade 4 students had often been read to as a child before they began school, compared to around 80 percent in Northern Ireland, New Zealand, Australia, and the Netherlands, and to around 54 percent for the average of PIRLS 2016 participating countries. In Morocco and Saudi Arabia, more than 60 percent of grade 4 students have fewer than 10 children's books in their homes, a far more worrying statistic than the PIRLS 2016 participating country average of 19 percent. The concern here derives in large part from evidence that children can transition much more easily from their L1 dialect to formal Arabic if children's literature is read to them early on. [199]

In school, written materials—such as textbooks and children's literature—are all in formal Arabic. Children are taught to read and write, with a focus on grammar and accuracy and a lack of playfulness and inquiry. [200] Teachers correct children as they learn to read and write, while a spirit of linguistic inven-

tion—making up words or spellings—is considered inappropriate. [201] Likewise, phonics-based methods are rarely used on the grounds that they rely on breaking words down to teach sound–symbol correspondences and often assess using non-words. Teachers sometimes use colloquial Arabic to help to explain features of the formal Arabic language, but this adds a level of complication.[202] In fact, teachers are themselves the products of poor Arabic language education, meaning they do not have the knowledge and skills in formal Arabic to be comfortable using it as a medium of instruction. Furthermore, those training to become Arabic language teachers rarely experience the in-depth training they need on how to teach Arabic, as very few university teacher training courses in the region cover Arabic pedagogy.

FIGURE D.1: Frequency of Parents Reading Books to Children Before Primary School

Percentage of grade 4 students whose parents report reading to them often, sometimes, or never

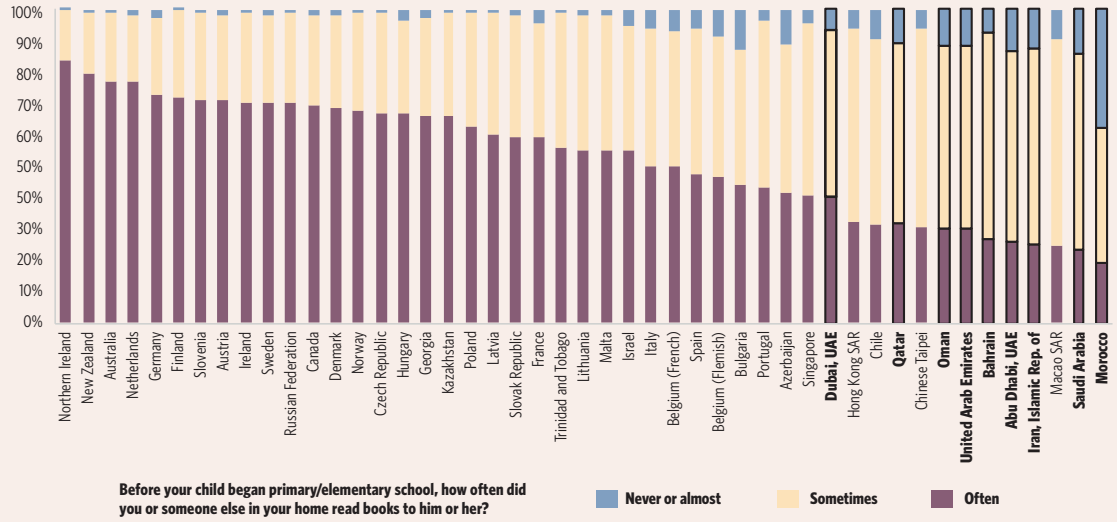
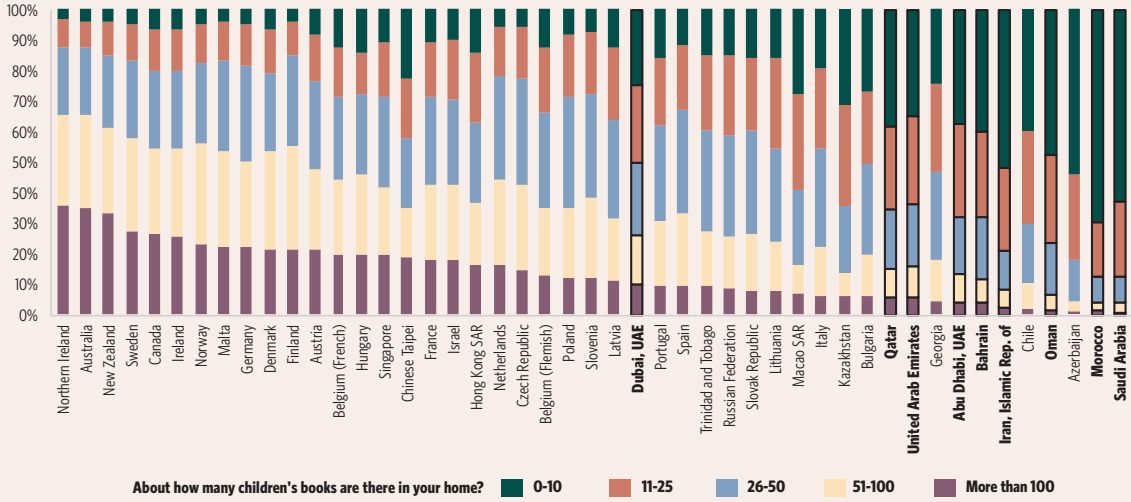


FIGURE D.2: Number of Children's Books in the Home

Number of children's books in the home as reported by parents of grade 4 students



Source: IEA PIRLS 2016.

Students frequently dislike Arabic language studies, feel insecure about their abilities, and do not enjoy reading and writing owing to: (1) a lack of exposure to formal Arabic vocabulary and literature in the early years, (2) rigid and didactic teaching methods, and (3) an inability to use play and creativity in language learning experiences.[203] To compound the problems, countries in the region have low instructional hours and overcrowded curricula, resulting in less than adequate time for Arabic learning. Preschool enrollment is very low across the region, although some countries are seeing a rise in non-Arabic-based preschool programs (such as English). Some of the visual features of the Arabic language can exacerbate the difficulties, including differentiating letters, which can be more difficult in Arabic than in Roman script, the use of small font sizes, and the deletion of vowels at grades 3-4, which results in reliance on context and memorization.[204] Taken together, these issues mean that the fundamental skills that make up reading are slow to develop in Arabic. The result can be seen in the poor outcomes of Arabic-speaking countries in international student assessments such as the PISA, TIMSS, and PIRLS.

There is no reason to assume that any student would fail to reach their potential if only they were enabled to benefit from the insights gained over the past few decades into teaching and learning practices for Arabic. Strengthening Arabic language teaching and learning, while allowing flexibility for students to engage with the language in creative ways, would provide the foundations needed to boost overall learning outcomes. This should include: (1) encouraging parents to read to children from an early age, (2) developing a broader library of more engaging literature for children, especially stories that use both colloquial and standard Arabic as appropriate, (3) using evidence-based pedagogical methods in the early grades, and (4) devoting sufficient time in the curriculum to the development of Arabic language skills.

ANNEX E:

Peru: Bilingual Intercultural Education

In Peru, a country with a population of nearly 32 million, approximately four million people speak an indigenous language as their L1. Of these, approximately 1.5 million are school-age children and youth who speak one of 40 indigenous languages and thus have a need for educational resources in those languages.[205] Estimates suggest that 20% of the schools in Peru should be offering these services, but only 40% of them are estimated to de facto provide them appropriately (with TLMs, teachers who speak the languages, specific pedagogical strategies, and pedagogical support).[206]

Peru has a long history of gradually elevating the status of indigenous languages and integrating bilingual education into its education system. The notion of bilingual education was first introduced in 1952, but early programs focused primarily on isolated indigenous communities in the Peruvian Amazon rainforest. These programs were heavily supported by international NGOs and did not present a comprehensive national approach to language issues since the much larger Quechua speaking populations were excluded from these programs. Subsequent actions like the Education Reform of 1972 that expanded educational services to indigenous populations in the Andean and Amazonian regions, the recognition of Quechua as a language in 1975, the creation of a national Directorate of Bilingual Education within the Ministry of Education in 1988, and the establishing of Articles 2 and 17 in the 1993 Constitution helped create the right environment for effective bilingual education policies. Article 2 of the 1993 Constitution gave official language status to all indigenous languages in Peru, and Article 17 outlined the obligation to promote bilingual and intercultural education in accordance with the individual characteristics of each zone.

Following the enactment of the 1993 Constitution, significant efforts made bilingual education in Peru a reality. Bilingual intercultural education (*Educación Intercultural Bilingüe*, EIB in Spanish) in Peru is characterized by the use of L1 in the early years, to learn how to read and write, while introducing Spanish as a second language. Over time, Spanish becomes the language of instruction (LoI). Peru's EIB specifies that the shift from the L1 to Spanish should depend on the child's proficiency in Spanish. For example, children who enter school as monolingual in an indigenous language use their L1 as the LoI and study Spanish as a second language during grades 1 and 2. In grade 3, Spanish is introduced as LoI for 20 percent of class time, and this proportion increases by 10 percent per year, to reach 50 per cent by grade 6. [207] An important aspect of the Peruvian model is the emphasis on the culture of the students, which is captured in the curriculum as well as teaching and learning materials. The EIB program does not change the curriculum for children, since all children in Peru are expected to learn the same content, but it does introduce culturally sensitive and indigenous-language materials to promote learning among indigenous communities.[208]

Starting in 1996, various programs have worked to develop and distribute high-quality TLM for bilingual education and to train teachers in the pedagogical skills required. From 1996 to 2000, 94 bilingual teaching manuals were produced, more than 10,000 teachers were trained in bilingual teaching, and other relevant materials were distributed.[209] Starting in 2004, the Rural Education and Teacher Development Project, which was funded by the World Bank Group, also worked to strengthen the EIB program. As part of this project, TLM was developed including: (i) workbooks for the six primary grades in 10 Peruvian languages and five dialects of Quechua; (ii) teachers' guides on how to maximize the use of classroom instructional materials; (iii) teachers' guides on effectively teaching a multigrade class; (iv) play kits to strengthen language acquisition and use both in Spanish and the Peruvian languages; and (v) an outreach package for teachers to use in introducing parents and community members to the advantages of bilingual instruction.[210] The practice of developing suitable TLM to strengthen and facilitate bilingual language education continues today. As the COVID-19 pandemic has led to school closures around the country and the Ministry of Education manages the continuity of learning through the school closures, high-quality TLM enables children all around the country to continue learning in the language that they know and understand best. *Aprendo en Casa* offers online resources for children to continue learning remotely in their L1. [211] The site currently offers online lessons in nine languages. In addition to this, a network of 35 radio stations broadcast structured educational material in L1 to support remote learning. [212]

A variety of factors hinder implementation of bilingual intercultural education in Peru. While large amounts of materials have been developed, many schools still lack appropriate materials to meet their language-grade needs.[213] Finding qualified teachers who have the right language skills has also proven to be difficult in some areas, and even when those are available, the level of support they receive may be insufficient.[214] Another complication relates to multi-grade classrooms, in which it can be difficult to follow LoI guidelines.[215] A further challenge involves community perspectives. Many indigenous parents do not support the idea of bilingual education because they fear that it will interfere with Spanish acquisition, and ultimately keep their children from gaining access to social and economic opportunity.[216]

Despite challenges, bilingual intercultural Education in Peru has shown promising results. Evidence suggests that the EIB program results in positive cognitive and emotional impacts on indigenous children. A meta-analysis of the various evaluations highlighted improved overall learning outcomes, higher numeracy outcomes, more self-confidence in the use of Spanish, more student participation in the classroom, and decreased (albeit still significant) disparities in learning outcomes between rural and urban students. [217] When used to investigate the effect of Quechua-medium instruction on academic achievement, the Peruvian school-level data from the Young Lives international study of childhood poverty showed that indigenous children who attend Quechua-medium schools achieve mathematics scores 0.54 standard deviations higher than indigenous children who attend Spanish-medium schools.[218] The same data, however, fails to demonstrate conclusively whether or not literacy scores reflect a comparable effect.

ANNEX E:

India: The Language & Learning Foundation, Transforming Teaching

Despite massive gains in access to education (97 percent of children enrolled in primary schools), learning assessments reveal that by the end of grade 5 almost half the children in India have not achieved minimum proficiency levels in literacy and numeracy. [219] About 50 million children enrolled in government schools [220] in grades 1 to 3 are at the highest risk of not acquiring basic literacy skills.[221] Children who study in an unfamiliar language face a huge learning disadvantage. It is estimated that 25 percent of primary school children in India face a moderate to severe learning disadvantage as a consequence of the fact that the language used at school is not their home language.[222]

Language & Learning Foundation's (LLF) vision for change

Goal: Language and Learning Foundation was founded in 2015 with the goal of improving the language learning outcomes of children in grades 1 to 3 in their home and school languages by working in collaboration with state governments. LLF is currently working with seven state governments to reach roughly 17 million children through its programs, thus helping more than one-third of the at-risk children in these states.

Objectives: To reach this goal, LLF focuses on three strategies:

1. Enhancing state governments' commitment to improving language and literacy instruction;
2. Persuading governments to include children's home languages (L1) in school; and through multilingual approaches; and
3. Developing capacity in the public education ecosystem to implement and sustain high quality interventions in early literacy and multilingual education at scale.

LLF's core operating principles

Program Design

- *Transform classroom teaching and learning* processes for language.
- *Incorporate children's home languages* in varied and pragmatic ways, such as using these non-dominant languages as language of instruction (LoI) in the early primary years or strategic use of children's L1 to support instruction through a different LoI.
- *Focus on equitable learning* for all children, without exception, through active engagement strategies, frequent review of lessons (within a carefully structured "spiraling" curriculum), differ-

entiated instruction, and extra support for struggling learners as a part of the regular teaching–learning process.

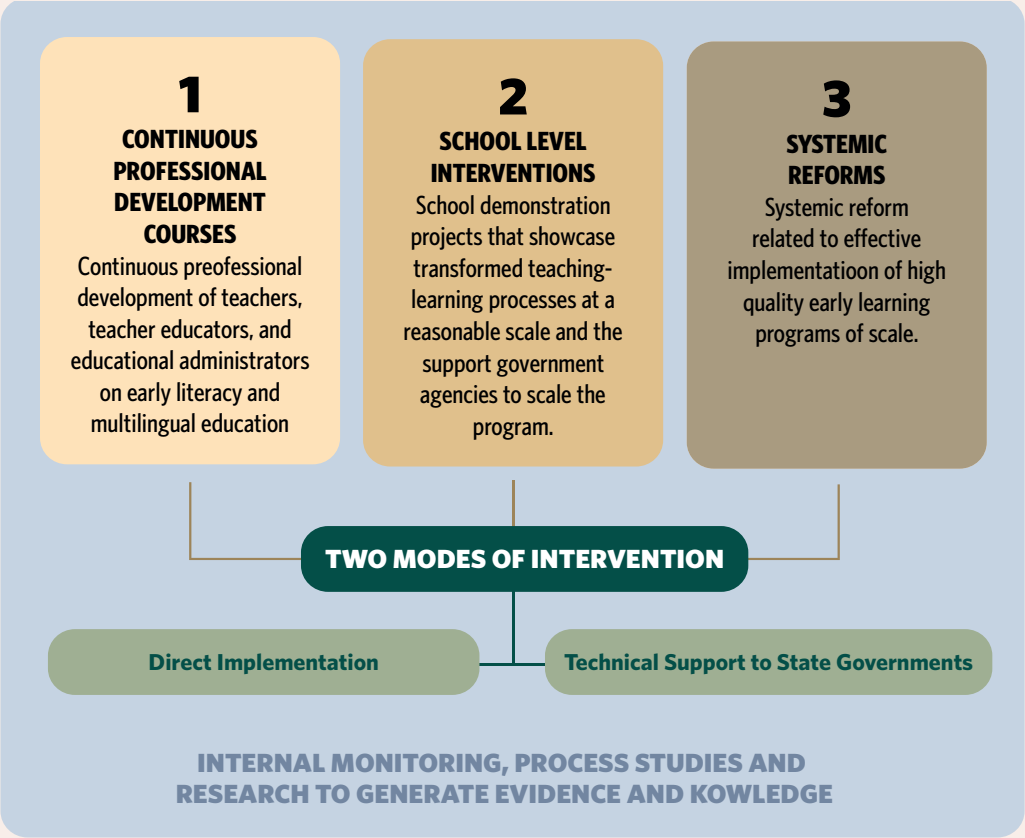
Functionality

- *Target educationally disadvantaged areas*, especially where children's home languages are different from the LOI at school.
- *Work at scale in collaboration with state governments.* Focus on system-oriented work through continuous professional development and support for basic reforms.
- *Contextualize and co-create* instructional design, materials, and training at each location, building on research and evidence-based principles and strategies.
- *Generate and share knowledge and evidence* through internal monitoring, evaluation, and process studies.

LLF's three-pronged approach for implementing early language learning programs at scale

As LLF's goal is to build commitment and capacity within the government education system to plan and implement early language learning programs at scale, LLF works in collaboration with state governments from the beginning on the three main dimensions shown in Figure F1.

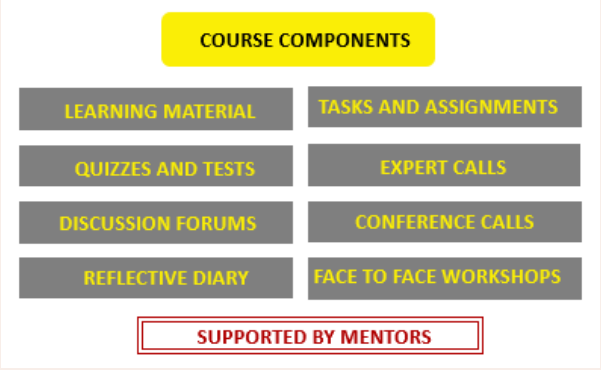
FIGURE F.1: LLF's three-pronged strategy



Continuous professional development courses: LLF designs and implements blended capacity building courses on early literacy and multilingual education for teachers and teacher educators. The courses provide conceptual understanding of early language learning as well as classroom teaching and learning activities and materials. Designed with the aim of creating conviction and capacity within the education system at all levels, these courses play a key role in supporting large-scale literacy and multilingual programs and sustaining them over the long term. The following list shows the main themes covered in the courses of longer duration (Figure F2).

BOX F.2: Major themes included in LLF courses

1: Understanding, language, literacy and multilingualism
2: Language teaching practices in primary classrooms: A reflective analysis
3: Principles of teaching and learning in early grades
4: Importance of using children's home languages and introducing multilingual education
5: Balanced approach for language teaching in primary grades
6: Oral language development
7: Emergent literacy, print awareness and phonological awareness
8: Learning to decode
9: Reading with fluency and comprehension
10: Teaching–learning strategies for reading
11: Development of writing skills
12: Approaches and strategies for multilingual education
13: Framework for grades 1 to 3 for language teaching–learning
14: Addressing multi-grade teaching and multiple learning levels in the classroom
15: Providing regular academic support to teachers



The courses and workshops precede implementation of school-level projects. They range from month-long courses on specific themes within early literacy and multilingual education to a year-long flagship course. These courses have helped LLF build credibility around its academic leadership for early literacy and multilingual education. Some of the courses (which tend to be oversubscribed) are also certified by universities in the country. External evaluations of the nine-month course have shown significant learning gains for the participant teachers and implementation of positive changes in teaching–learning practice in their classrooms.

School-level interventions: LLF designs and implements projects that demonstrate transformative change in the teaching and learning of languages as well as improved student learning. Their programs are initially implemented in 150–200 schools and are later scaled up to cover more schools with state government support. These comprehensive projects aim at building the capacity of teachers and school heads on English-language learning or multilingual education (ELL or MLE) through: training workshops; orientation of government staff responsible for school supervision and support; regular academic support to teachers through classroom visits; review meetings and mobile phone-based resource sharing; provision of instructional materials (such as workbooks); decoding and reading materials such as reading cards and storybooks; and the creation of print-rich classrooms and regular student assessments. One LLF mentor provides academic support to teachers in 50 schools, in collaboration with existing government monitoring staff. External evaluations of LLF's school programs have shown significant learning gains for children.

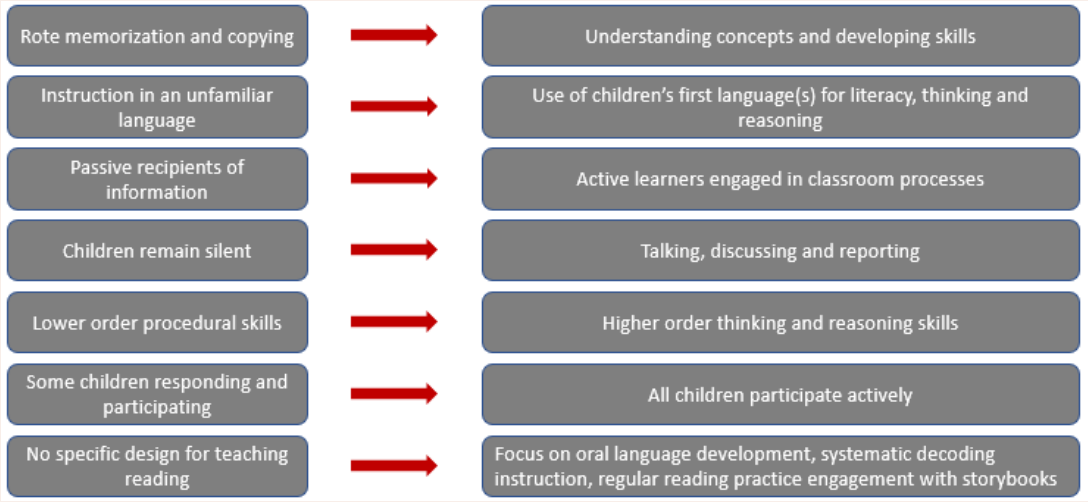
Systemic reforms: LLF works with state education institutions to influence the state-wide annual in-service teacher training, school-based assessments, textbook review and revision and the development of improved preservice teacher education curricula. LLF also supports state governments for formulating policies on first-language-based multilingual education. LLF develops and disseminates public goods like instructional design and assessment frameworks, teaching and learning practices videos, handbooks for teachers and mentors, course materials, resource packs and playbooks that can support implementation.

Technical support to state governments: In the technical support model, LLF works with state level institutions to co-create instructional design; develop children's learning materials, training manuals and teacher guides; and orient state-level master trainers for training of teachers. In this model, LLF does not post its staff in the field. The responsibility for local implementation lies with the state governments, with only technical support from LLF. This model has the potential to influence the teaching–learning process and student learning outcomes in about 200,000 primary schools across three states, starting in 2021.

Pedagogical Underpinning

1. **Transforming the teaching and learning process:** LLF believes that sustainable improvement in learning outcomes happens only when the teaching and learning process is transformed along the dimensions in Figure F3.

FIGURE F.3: Vision of change in teaching and learning



2. Including children's home languages

The best way to support children from non-dominant language backgrounds is to use their language as the medium of instruction for several years, while gradually introducing additional languages. However, sociolinguistic situations in India are varied and complex and a 'one-size-fits-all' approach for using children's languages is not appropriate. An understanding of the language contexts of schools and classrooms is a prerequisite for developing appropriate strategies for inclusion of children's first languages. A simple sociolinguistic mapping exercise is necessary to identify the approach and strategies for including children's languages.

Multilingual Education

LLF supports the following three approaches for the use and sequencing of languages in bilingual or multilingual programs. The proportion of schools included under each of these approaches (as a percentage of total schools where LLF is implementing programs or providing technical support) is indicated in brackets:

1. ***Multilingual education based on L1***, whereby children's L1 is used as LoI for the primary years; with L2 taught as a subject before being introduced as LoI using bilingual methodology. (15%)
2. L2 used as LoI with development and extensive use of L1 in the oral domain. Purposeful, strategic and flexible use of languages as part of teaching and learning. (80%)
3. ***Using multiple L1s*** in the classroom as a resource to develop competence in L2 and additional languages through strategies of translation, multilingual communication, comparing and contrasting languages, and so forth. Few working models are available currently. A local *lingua franca* to which most children are already exposed could be used as a means of communication, or even as LoI. (5%)

Essential elements of multilingual education

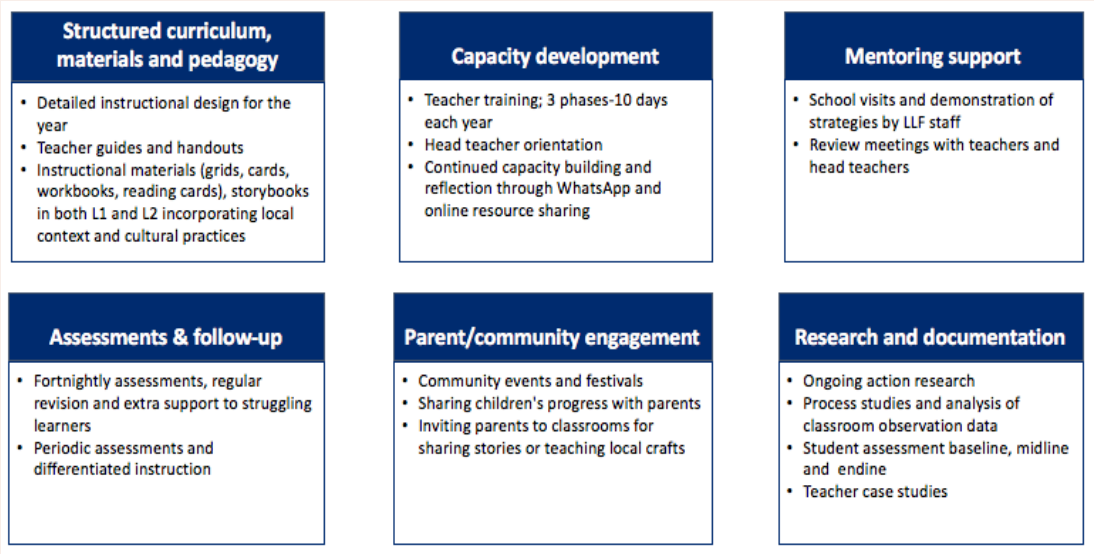
LLF has identified the following essential elements for their work:

- Children's first languages (L1s) are used formally in the classroom.
- Languages are not taught and learnt in water-tight compartments; fluid and flexible use of languages is encouraged.
- An MLE classroom reflects tolerance and mutual respect for all languages and cultures.
- A multilingual approach to teaching and learning is used across the curriculum.
- Appropriate second-language teaching and learning methods for gradual learning of unfamiliar languages.
- A multilingual approach is also multicultural, bringing children's cultural practices and experiences into the classroom.

Ajuvaroo (light), LLF's Multilingual Education Program, has been implemented since 2019 in 40 schools in the Dungarpur district of Rajasthan in Western India. Most children in these schools belong to indigenous tribes and speak a language called Wagdi and its dialects. They have little or no understanding of Hindi, the language used as the LoI, when they start grade 1. The program aims to maintain and develop Wagdi (children's L1), while gradually building basic vocabulary and understanding of Hindi. The main components of the program are shown in Figure F4.

The emphasis is on the use of children's orality and developing Wagdi for higher order thinking, reasoning and oral expression through activities like interactive read aloud and conversations. During this period, strategies like Total Physical Response (TPR) are used to help children pick up about 200 words, phrases, and simple sentences. L1 is used extensively and strategically to scaffold L2 learning in the first two years; for example, L1 is used for new or difficult concepts and for higher order comprehension, while L2 is used for simple texts with recall-type comprehension. Teachers use and promote purposeful mixing of languages ("translanguaging"), to enable full comprehension and expression. The classrooms have seen a transformation in terms of children's language skills and their active engagement in the classroom process. Learning assessments at the end of the first year show significant gains in learning outcomes.

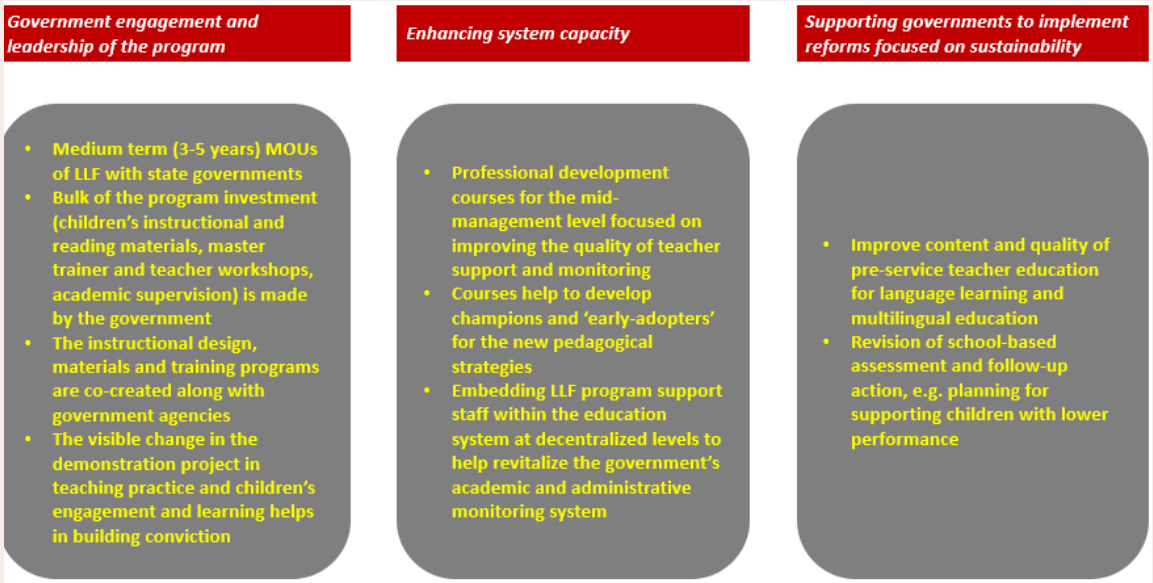
FIGURE F.4: Main components of Rajasthan's MLE program



Strategies for building strong partnerships with governments

To ensure sustainable change, LLF's work is focused on partnership with governments. Figure F5 outlines the key levers for strong partnership with governments.

FIGURE F.5: Strategies for building government partnership and ownership



Lessons Learned and the Way Forward

Here are some challenges and suggestions based on LLF's experience:

1. ***Extend language and literacy development programs to later primary grades:*** Large-scale early grade reading projects need to evolve into systematic, holistically designed bilingual or multilingual programs for the entire primary cycle. Early grade reading programs cannot be effective unless children's first languages are formally included and used for oral language development, including thinking and reasoning and early literacy. Additionally, the development of bilingual or multilingual abilities and multiliteracies require a commitment to building a scope and sequence that spans several years in the child's primary language.
2. ***Program designs must include multiple grades of curriculum development and instruction to support multigrade teaching situations and multiple learning levels within classrooms:*** 70 percent of primary schools in India have multigrade teaching situations and students with a wide range of learning levels. However, most NGO and government programs to improve learning are implemented with monograde teaching designs. Program designs must include ongoing assessment, differentiated instruction and extra support for children falling behind as integral parts of the instructional strategy.
3. ***School preparedness*** must be prioritized by all stakeholders: Investment in high-quality early childhood education programs in children's home languages will significantly help to improve learning outcomes in early primary grades.
4. ***Working with governments enables scale and sustainability***: It is important to work with several levels of the government education system, from the middle level of field supervisors all the way up to the senior education leadership at the state and national level.

Overview of Program Costs

LLF has managed to keep program costs within reasonable limits due to the significant contribution made by the state governments (see Table F1).

TABLE F.1: Overview of LLF program costs

PROGRAM	PARTICIPANT EFFORT (IN HOURS)	LLF COST PER PARTICIPANT/ CHILD (USD)	GOVERNMENT CONTRIBUTION PER PARTICIPANT/ CHILD (USD)
Professional Development Courses			
1-year blended course*	300	400	125
3-month course*	85	125	135
1-month course*	20	**28**	n/a
School Level Interventions			
Demonstrated projects (150-200 schools) including developmental costs	n/a	**13**	9.5
Programs at scale**	n/a	**6.2**	3.5

*One mentor for 20-25 participants

**In scaled programs, one LLF academic mentor is available for 5o primary schools.

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ENDNOTES

[1] Based on SDI data estimates.

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[3] Alidou et al. 2006.

[4] Ethnologue, 23rd edition, published 2020 (https://www.ethnologue.com/about/country-info)

[5] World Bank. 2019. "Ending Learning Poverty: What Will It Take?" Washington DC: World Bank. p.6.

[6] UNESCO. 2018. Mother Tongue-based Multilingual Education [Infographic]. Bangkok, Thailand: UNESCO Asia and Pacific Regional Bureau.

[7] It is important to quickly improve the estimates of the effect of LoI on these key indicators of school effectiveness and human capital development, as a step toward improving LoI policies, their implementation, and learning outcomes.

[8] The Ethnologue database is the most authoritative source on the number of languages and where they are spoken. It identifies 7,106 languages currently spoken worldwide.

[9] Evans and Mendez Acosta 2020.

[10] World Bank 2018b.

[11] Pritchett 2013.

[12] World Bank 2019b.

[13] World Bank 2019b.

[14] Collier and Thomas 2017.

[15] Ibid.

[16] Pinnock 2009.

[17] Dobbie & Fryer 2013; Hamre 2014; Muijs et al. 2014.

[18] Malone and Malone 2011.

[19] Alidou and Brock-Utne 2011.

[20] The relationship between languages and writing systems is complex and the subject of voluminous linguistic research. The intuitive conclusion is that writing systems with fewer symbols make it easier to become literate in a given language. That is true up to a point, but the level of difficulty is also dictated by the specific sound-symbol relationships involved. Since few languages have more than about four dozen basic sound components, it has been conjectured that the "perfect alphabet" would have one symbol for each sound and therefore roughly 48 letters (Moats 2020; in press). English uses 26 letters to represent about 44 sounds and needs over 100 key letter combinations to accomplish this—making English a relatively difficult language in which to become literate.

[21] Kone 2010.

[22] Trudell 2020.

[23] Grin 2003.

[24] Kone 2010.

[25] Grin 2003.

[26] Grin 2003.

[27] Trudell 2007.

[28] Adegbija 1994.

[29] Muthwii 2004.

[30] Alidou and Brock-Utne 2011.

[31] Grin 2004.

[32] Grin 2003.

[33] World Bank 2005.

[34] Patrinos and Velez 2009; Vawda and Patrinos 1999.
[35] Grin 2004.
[36] Heugh 2011.
[37] Azevedo 2020.
[38] World Bank 2020.
[39] Alidou et al. 2006; Baker 2001.
[40] Piper, Schroeder, and Trudell 2015.
[41] Ball 2011; Goldenberg 2008; Brown 2011; Diarra 2003; Harris 2011; Walter & Chuo 2012.
[42] UNESCO 2019.
[43] Feitelson, Goldstein, Iraqi, and Share 1993; Abu-Rabia 2000.
[44] Taha-Thomure 2019.
[45] Taha-Thomure 2008.
[46] Taha-Thomure 2019
[47] https://digitallibrary.io/
[48] GRN (https://www.globalreadingnetwork.net/)
[49] Global Book Alliance (https://www.globalbookalliance.org/)
[50] Resources are available at: https://shared.rti.org/content/education-data-decision-making-eddata-ii-national-early-grade-literacy-and-numeracy-survey
[51] https://www.sil.org
[52] https://www.ethnologue.com/
[53] https://bloomlibrary.org/landing
[54] https://software.sil.org/primerpro/
[55] https://palnetwork.org/
[56] Assessments and related tools are available at https://palnetwork.org/tools/
[57] https://www.africanstorybook.org/
[58] https://storyweaver.org.in/
[59] Choi 2010; Evans and Morrison 2017.
[60] USAID 2017.
[61] USAID 2018.
[62] Fazio & Lyster 1998; August & Shanahan 2006.
[63] Heugh 2011; Ball 2011; Alidou and Brock-Utne 2011; Walter & Benson 2012; Cummins 2009.
[64] Denton, Fletcher, Taylor, Barth, and Vaughn 2014.
[65] Sampa 2005; Heugh, Benson, Bogale, Yohannes 2007; Walter and Chuo 2012; Skutnabb-Kansas & Heugh 2012.
[66] Boateng 2019.
[67] Clegg 2005; Brock-Utne et al. 2011.
[68] Martin, Mullis, Foy 2008; Alidou and Brock-Utne 2011; Ramirez & Merino 1990.
[69] World Bank 2019b.
[70] Martin, Mullis, Foy 2008.
[71] Pflepsen & Pallangyo 2019.
[72] Cummins 2009; Cummins 2012; Thomas & Collier 2002.
[73] Vygotsky 1986.
[74] Trudell and Young 2016.
[75] Pflepsen & Pallangyo 2019.
[76] Goldenberg 2012.
[77] Clark 1979; Cummins 1979.
[78] Benson 2008.
[79] Spolsky 2009.
[80] Asia Foundation – Let's Read (https://www.letsreadasia.org)
[81] Pflepsen & Pallangyo 2019.
[82] Pflepsen and Pallangyo 2019.
[83] Beteille and Evans 2019.
[84] Clegg 2005; EdQual 2010.
[85] Milligan et al. 2016; Clegg and Simpson 2016.
[86] RTI International 2015.
[87] USAID 2013.
[88] Pflepsen & Pallangyo 2019.
[89] Piper et al. 2018.

[90] USAID 2015.
[91] Eble et al. 2019.
[92] Rackham 2001.
[93] Benson 2000; Benson 2003.
[94] Dryden-Peterson 2015.
[95] Trudell and Young 2016.
[96] New York State Education Department 2020.
[97] Crawford et al. 2015; Devictor and Do 2016; Milner and Loescher 2011.
[98] Dryden-Peterson 2006, 2016b; McBrien 2005; Mendenhall, Bartlett, and Ghaffar-Kucher 2017; Waters and Leblanc 2005.
[99] UNESCO 2006.
[100] UNICEF 2016.
[101] Male and Wodon 2017.
[102] Kulbir Singh, R. and O. Abu Alghaib 2019.
[103] Gebre 2010; Demilew & Sekeroglu 2019.
[104] CSA 2007.
[105] Derash 2013; Gebre 2015; Bashir et al. 2018.
[106] Cohen 2007.
[107] Gebre 2015.
[108] Bashir et al. 2019.
[109] RTI International 2014.
[110] Goldenberg 2012.
[111] Clark 1979; Cummins 1979; Benson 2008.
[112] Pflepsen & Pallangyo 2019.
[113] Glewwe, P., et al. 2012.
[114] Ramachandran, 2012.
[115] Ibid.
[116] Collier, V., and Wayne P. Thomas, 2017.
[117] Ethnologue, 2020. Author's analysis.
[118] Grisay, A. et al. 2007 p.250
[119] https://www.sil-lead.org/ugandashrp.
[120] https://www.sil-lead.org/ghana-learning.
[121] PrimerPro (https://software.sil.org/primerpro/)
[122] SynPhony Software (https://www.sil.org/about/news/synphony-tool-creating-sequenced-learning-resources-0)
[123] Boakye-Yiadom, F, M. Matthews, E. Miksic, and B. Trudell. 2018.
[124] World Atlas of Languages Structures (https://wals.info/)
[125] Schroeder 2010.
[126] SIL Lead 2017 (https://www.sil-lead.org/sil-lead-mtb-mle-resources)
[127] Trudell 2020.
[128] African Linguistic Network https://alnresources.wordpress.com/
[129] Survey Solutions (https://mysurvey.solutions/); GEMS (Geo-Enabling Initiative for Monitoring and Supervision); SurveyCTO (https://www.surveycto.com/)
[130] Viamo (https://viamo.io/)
[131] E.g. Pflepsen & Pallangyo 2019.
[132] Kotz, Fleisch, and Taylor, 2018; Piper et al., 2016; Akmal, Musa, and Silverman, 2020.
[133] These regions and cities are Addis Ababa city, Amhara, Afar, Benishangul-Gumuz, Dire Dawa city, Gambella, Harari, Oromia, Southern Nations, Nationalities and People (SNNP), Somali and Tigray.
[134] Gebre, 2010; Demilew and Sekeroglu, 2019.
[135] CSA 2007.
[136] This exam is administered in the medium of instruction used at the grade 8 level in the region.
[137] Grade 10 and 12 examinations are administered in English. Post-secondary education is also conducted in English.
[138] Before western education was introduced, the traditional system of education (religious education) in the nineteenth century was in the Ge'ez and Amharic languages. When modern schools were opened in 1908 French and Arabic were used a medium of instruction. As modern schooling expanded in the country, Amharic and English became the medium of instruction. The first official Ethiopian educational language policy emerged in 1944 in the form of a directive that Amharic was to be the general language of instruction with English being used in upper primary and higher levels (Getachew and Derib 2006).
[139] The use of Amharic as the working language of the federal government is a frequently debated issue.
[140] Derash, 2013, Gebre, 2015, Bashir et al., 2018, Heugh et al., 2007, identified 24 languages, while Gebre, 2015 identified an additional six languages that were included as a medium of instruction in SNNPR.

141 Woldemariam and Lanza 2014.

142 Getachew and Deriba 2006.

143 Gebre 2015.

144 Bashir et al. 2019.

145 Woldetsadik & Raysarkar 2017.

146 Woldetsadik & Raysarkar 2017.

147 Heugh et al. 2007, Cohen 2005.

148 Azubuike et al. 2017.

149 Heugh et al. 2007.

150 Non-readers are students, tested at the end of grade 2 or beginning of grade 3, who are unable to read a single word in the language of instruction.

151 World Bank 2018, Future Drivers of Growth in Rwanda. http://documents.worldbank.org/curated/en/680671541618477651/pdf/131875-V2-WP-PUBLIC-Disclosed-11-9-2018.pdf

152 UNESCO 2020. http://uis.unesco.org/en/country/rw

153 World Bank 2011, Rwanda Education Country Status Report.

154 http://documents.worldbank.org/curated/en/677741468107072073/pdf/579260SR0P11151353788B01PUBLIC10Web.pdf

155 Republic of Rwanda, 2008.

156 https://planipolis.iiep.unesco.org/sites/planipolis/files/ressources/rwanda_essp_2008-2012.pdf

157 DFID 2018, Learning for All Annual Review.

158 https://devtracker.dfid.gov.uk/projects/GB-1-204463/documents

159 BLF (2018), Baseline Report (unpublished).

160 MINEDUC/RES, Rwanda Education Statistics. http://197.243.16.104/~mineduc/newweb/fileadmin/user_upload/pdf_files/2018_Rwanda_Education_Statistics.pdf

161 MINEDUC/REB, 2015, Competence Based Curriculum.

162 http://old.reb.rw/fileadmin/competence_based_curriculum/syllabi/CURRICULUM_FRAMEWORK_FINAL_PRINTED.compressed.pdf

163 HK Census 2019.

164 Poon and Lau 2016.

165 English is widely used in government, academic circles, tertiary institutions, and courts of law.

166 Written Chinese can take two forms—either Simplified or Traditional characters. The digital era has rendered the basic labor-saving distinction between the two (number of strokes per character written) slightly less important than it used to be. Mandarin Chinese tends to utilize Simplified characters. Cantonese Chinese is a dialect—also described, correctly, as a Sinitic language—without its own formal writing scheme. However, it does informally and straightforwardly borrow either written script, with the addition of a few ad hoc, non-standard orthographic innovations. The history of Hong Kong as a British colony during the 1950s and 1960s (the period when Mainland China shifted to Simplified characters), has resulted in the widespread retention of Traditional Chinese (likewise retained in Taiwan). The "biliterate and trilingual" policy does not specify whether written Chinese pertains to Traditional or Simplified characters.

167 EDB 1997a.

168 HK Census 2016.

169 Wong, 2017; An important point to note is that the British colonization of Hong Kong was not, in its essence, a proselytizing mission, and local Chinese students generally did not attend religious schools where they were required to learn English.

170 Barro-Lee 2011.

171 Kirkpatrick et al. 2011.

172 Kan 2011.

173 Wong 2017.

174 The 1950s and 60s saw the doubling of primary school enrollment.

175 Government Secretariat, 1981; Wang and Kirkpatrick, 2015.

176 Education Commission, 1990.

177 EDB 1997b.

178 Evans 2013.

179 Choi 2010; Evans and Morrison 2017.

180 Poon and Lau 2016.

181 Students' scores on average had to be no less than 85% of the 3-year average of Secondary 1 students grouped in Medium of Instruction Grouping Assessment (MIGA) Groups I and III. Group I: able to learn effectively in either Chinese or English; Group II: able to learn more effectively in Chinese; Group III: able to learn better in Chinese but may also learn effectively in English. The groupings are based on students' performance in their primary 5 and 6 internal school assessments.

182 After widespread opposition from the public.

183 Lai 1999.

184 Zeng 2007.

185 Wang 2019.

186 Evans and Morrison 2017.
187 Evans and Morrison 2017.
188 EDB 2012.
189 Education Commission 1990; Evans and Morrison 2017.
190 Evans and Morrison 2017.
191 Tsui et al. 1999.
192 Tsui et al. 1999.
193 The survey response rate was 50%
194 Yip, Tsang, and Cheung 2003; EDB 2002.
195 Ng 2007.
196 Tsang 2008.
197 Evans and Morrison 2017.
198 Algeria, Bahrain, Chad, Comoros, Djibouti, Arab Republic of Egypt, Eritrea, Iraq, Jordan, Kuwait Lebanon, Libya, Mauritania, Morocco, Oman, Qatar, Saudi Arabia, Somalia, Sudan, Syrian Arab Republic, Tanzania, Tunisia, United Arab Emirates, West Bank and Gaza, and the Republic of Yemen.
199 Versteegh 1997.
200 Al-Huri 2015.
201 UNESCO 2019.
202 Feitelson, Goldstein, Iraqi, and Share 1993; Abu-Rabia 2000.
203 Taha-Thomure 2019.
204 Taha-Thomure 2008.
205 Taha-Thomure 2019.
206 MINEDU 2018.
207 MINEDU 2018.
208 DIGEIBIR 2013; Hynsjö & Damon 2015.
209 Garcia 2010.
210 Buhman & Trudell 2008.
211 World Bank 2002.
212 Aprendo en Casa.
213 Andina 2019.
214 Montoya Rojas 2001; Garcia 2010.
215 Kudó 2004.
216 Rodriguez Lozano 2012.
217 Buhman & Trudell 2008.
218 Lopez & Kuper 2000.
219 Hynsjö & Damon 2015.
220 ASER 2018 Feitelson, Goldstein, Iraqi, and Share 1993.
221 80 percent of primary schools are funded and managed by central and state governments and local bodies
222 Based on School Education in India, Flash Statistics published by NUEPA in 2016. http://dise.in/Downloads/Publications/Documents/U-DISE-SchoolEducationInIndia-2015-16.pdf
223 Jhingran, D. (2005). Language disadvantage: The learning challenge in primary education. Delhi. APH Publishing.