

Assessment of the USAID Lao PDR Learn to Read Activity

Baseline Report

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Victoria Rothbard

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Executive Summary

In response to challenges facing students and teachers in Lao People's Democratic Republic (PDR), the United States Agency for International Development (USAID), Save the Children (SC), and partners are implementing the Learn to Read (LtR) activity to improve Lao reading ability at the pre-primary, first-, and second-grade levels; improve classroom instruction; and strengthen community engagement and support for reading. SC contracted the American Institutes for Research (AIR) and our local partner, Indochina Research Laos (IRL), to lead a mixed-method study and assessment of the LtR activity and examine the change in students' literacy outcomes over time. This report presents the results from the baseline round of the study to serve as a basis from which to examine these changes.

The baseline round of the LtR assessment was conducted between March and May 2021, however, quantitative data collection was disrupted due to the resurgence of COVID-19 in Lao PDR and resultant school closures and travel restrictions. Prior to these restrictions, our team was able to complete planned qualitative data collection in all provinces and all quantitative data collection in Xiengkhuang Province. We supplemented this partial quantitative data with other existing datasets to generate a proxy baseline of student literacy outcomes for the LtR program.

Baseline Results

In general, we find relatively low levels of mastery of students' reading readiness and early grade literacy skills in Xiengkhuang Province as well as in our proxy baseline, suggesting these students have much to gain from the LtR project. Speaking a language other than Lao at home, having a lower socio-economic status, living in a rural area, having a disability, and being in a multigrade classroom predicted lower performance on literacy subtests. Multigrade classrooms were only associated with lower scores for the higher-level literacy skills. Further, classrooms with a larger number of students present, with fewer learning materials, and in which teachers do not ask open questions were also found to be associated with lower student performance on the assessments in both pre-primary and Grades 1 and 2. In line with these results, stakeholders from Group 2 schools suggested that the learning materials provided by the LtR project helped to improve student reading skills in those schools. Therefore, baseline evidence suggests the LtR program activities are well suited to improve student literacy outcomes at the pre-primary, Grade 1, and Grade 2 level.

Parents in our study sample overwhelmingly expressed their support for and value of education for their children, though time was consistently noted as the largest barrier to actively supporting their child and the schools. Further, socio-economic barriers, long distances to school and a lack of teachers were the most frequently cited challenges to school attendance. However, educational stakeholders expressed mixed views about parental engagement in children's education, with some suggesting that parents were rarely engaged and that students did not receive enough educational support at home. To support this idea, most parents and students reported having no access to storybooks at home, with the exception of some parents and students from Group 2 schools who had borrowed books made available by the LtR program. Even so, there was a high number of students reporting being read to at home, just likely not with storybooks. Respondents from Group 2 schools also reported more interaction and engagement between parents and teachers than those who did not receive the LtR intervention, noting that teachers communicated with parents about student attendance and performance and discussed how to support children's learning at home. This suggests that the LtR program facilitates parental engagement.

Lastly, we find that classroom management was generally equitably distributed because teachers walked around classrooms and girls and boys were distributed evenly throughout the classroom. Teachers used a variety of teaching methods even though many lacked sufficient teaching and learning materials. Teachers took steps to ensure that minority students were not overlooked, whether due to sex, language, or pre-primary background, though they lacked knowledge on how to teach students with learning difficulties. Finally, teachers felt that the trainings they did receive were insufficient and they wanted additional training, especially training focused on literacy instruction.

Introduction

Despite rapid increases in school enrollment, children in Lao People's Democratic Republic (PDR) still struggle to learn to read. A recent early grade reading assessment found that more than 30% of all Grade 2 students could not read a single word, and among those able to read, more than 50% could not comprehend the words they read (United Nations Children's Fund [UNICEF], 2015). Further, the percentage of nonreaders is significantly higher for non-Lao-speaking children, and children from non-Lao-Tai ethnic groups continue to have lower educational achievement than their more urban Lao-Tai counterparts (UNICEF, 2015). As of 2017, a mere three percent of all teachers in Lao PDR meet the 80% passing rate on the Systems Approach for Better Education Results (SABER) teacher assessment (World Bank, 2017a). In addition, teachers receive limited pre- and in-service training opportunities and little coaching support from government pedagogical advisors (PAs) (World Bank, 2017a).

In response to these challenges facing students and teachers in Lao PDR, the United States Agency for International Development (USAID), Save the Children (SC), and partners are implementing the Learn to Read (LtR) activity to improve Lao reading ability at the pre-primary, first-, and second-grade levels; improve classroom instruction; and strengthen community engagement and support for reading. SC contracted the American Institutes for Research (AIR) and our local partner, Indochina Research Laos (IRL), to lead the assessment of the LtR activity and examine the change in students' literacy outcomes over time. The remainder of this report details our approach to the assessment, including the theory of change, research questions, study design, and baseline results.

Context

In Lao PDR and across the world, there have been rapid increases in school enrollment. In Lao PDR, children receive five years of free and compulsory basic education. Primary school enrollment in Lao PDR increased from 92% in 2009 to 97% in 2011 (Save the Children, 2019). Despite these advances, many countries around the world, including Lao PDR, still face a learning crisis. Approximately 250 million school-aged children worldwide are unable to read a single word, even after many of them have been in school for up to four years (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2013; World Bank, 2018b). In Lao PDR, an early grade reading assessment found that more than 30% of all Grade 2 students could not read a single word, and among those who were able to read, more than 50% could not comprehend the words they read (UNICEF, 2015). These reports also showed that the percentage of nonreaders was significantly higher in the non-Lao-speaking groups.

Although a multitude of problems contributes to the low quality of learning, large-scale meta-analyses and other robust studies have highlighted one factor that is present in most high-impact learning programs: effective pedagogies that focus on the “teacher-learner interaction” (Evans & Popova, 2016; World Bank, 2017b). The precise details of the effective pedagogies may vary, but teaching students at their level (skill-based teaching) has been shown to have a significant impact on learning outcomes in varied contexts (World Bank, 2018b).

Teachers in Lao PDR face several challenges, including poor-quality and limited training as well as little support from government advisors (World Bank, 2017a). The World Bank reports that as of 2017, only three percent of all teachers in Lao PDR met the passing rate of 80% on the SABER (World Bank, 2017a). In addition, 53% of teachers reported receiving their salaries late at least once a year (World Bank, 2017a). These data make it clear that Lao teachers face many obstacles and that support for teachers is urgently needed.

Lao PDR is a multilingual, multicultural, and multi-ethnic country in mainland Southeast Asia, bordering Thailand, Myanmar, China, Vietnam, and Cambodia. Lao PDR has about 50 different

ethnic groups (Simons & Fennig, 2018) and more than 200 ethnic minority subgroups (Australian Council for Education Research, 2015), representing all four major mainland Southeast Asian ethnic groups: Tai-Kadai (~24%), Austroasiatic (~57%), Hmong-Mien (~5%), and Tibeto-Burman (~13%) (Simons & Fennig, 2018). Even so, Lao is the official language of instruction at all education levels in the country. In many remote communities, the population does not speak Lao, and children in these areas have very limited exposure to print before they start school (Australian Council for Education Research, 2015).

Moreover, ethnic minority groups in Lao PDR usually settle at different elevations on hills and mountains, whereas the majority population (Lao-Tai) traditionally grow paddy rice in the valleys. In addition, about 67% of Laotians live in rural areas (Lew, 2014). Non-Lao-Tai ethnic groups in remote areas with difficult agricultural conditions form a large part of the 55% of the country that is poor (Chamberlain, 2007). Such remote and rural areas typically face a shortage of teachers. Accordingly, approximately 45% of village schools only go up to Grade 3, and 20% of villages have no schools at all (Save the Children, 2019). Children from non-Lao-Tai ethnic groups continue to have significantly lower educational achievements than do their more urban Lao-Tai ethnic group counterparts (UNICEF, 2015). Although urban Lao-Tai and non-Lao-Tai women have a similar rate of school completion, non-Lao-Tai women in rural areas have, on average, 6.6 fewer years of schooling than do Lao-Tai men (World Bank, 2018a).

For these reasons, designing more inclusive learning and reading materials, coupled with regular teacher training, is essential to increase literacy and educational attainment for a diverse student body in Lao PDR.

Project Description

SC, in partnership with Room to Read and Humanity & Inclusion, is implementing the USAID-funded LtR project in Lao PDR. The LtR activity represents a promising approach for improving educational outcomes for children in the pre-primary and early primary grades. The project aims to address deficiencies in reading skills acquisition for all children in Lao PDR, with an emphasis on non-Lao-speaking children and children with mild disabilities. Over a period of five years, the project will create learning materials for teachers and students; provide training and support to teachers on literacy instruction, including the use of the new materials; and engage communities to support education and reading acquisition, with the overarching goal of building capacity and providing technical assistance for further use of the materials by the Ministry of Education and Sports (MoES). The LtR project is implemented in phases to enable systems strengthening by progressively developing technical and managerial knowledge within MoES.

The LtR activity is rolling out over three phases. Within each of these phases, materials will be adapted to the appropriate learning needs of children, and additional teacher training will be provided to better align with students’ needs. To assist with these incremental programmatic changes, the project is being phased in through three groups of schools from across project districts. The schools were purposively selected to ensure an equal distribution of schools with different levels of key identifying characteristics such as size, ethnicity, urbanicity, and presence of pre-primary classes. Exhibit 1 shows the phased structure of the LtR project.

Exhibit 1. LtR phased project structure

	Phase 1	Phase 2		Phase 3
	AY 2019-2020	AY 2020-2021	AY 2021-2022	AY 2022-2023
Group 1	Pre-Primary	Pre-Primary	Pre-Primary	Pre-Primary
	Grade 1 – BEQUAL Support	Grade 1	Grade 1	Grade 1
		Grade 2 – BEQUAL Support	Grade 2	Grade 2
Group 2		Pre-Primary	Pre-Primary	Pre-Primary
		Grade 1	Grade 1	Grade 1
			Grade 2	Grade 2
Group 3			Pre-Primary	Pre-Primary
			Grade 1	Grade 1
				Grade 2

Theory of Change

Policy-relevant research should be based on a theory of change (ToC) that outlines the causal chain among activities, inputs, outputs, outcomes, and impacts as well as the underlying assumptions (White, 2009). To inform our study design, AIR is using the ToC developed by project partners for improving reading skills for children in pre-primary, Grade 1, and Grade 2 (see Appendix A). The guiding theory that underpins the LtR activity suggests that investments in more inclusive early-grade reading materials and instruction, coupled with capacity building for MoES and community engagement, can help achieve the LtR project’s overarching goal of improving children’s reading skills.

A number of key assumptions underlie this ToC and the link between components of the LtR activity and improvements in children’s reading outcomes. First, the model begins with the assumption that the initial conditions are in place for a child to be “ready” to acquire literacy

skills in any language, including access to reading materials, nutritional access (given the known linkage between hunger and malnutrition and the inability to learn; Jomaa et al., 2011), and a safe and secure learning environment. Without these initial conditions, a child is unlikely to benefit from literacy instruction in any form, regardless of the quality of the program. This so-called “opportunity to learn” is a prerequisite for any learning to take place.

The extent to which the LtR project will relate to children’s reading outcomes is also likely to be moderated by factors such as the parents’ education and literacy background, the socio-economic status (SES) of the child, and the language(s) spoken at home. For instance, a child who does not speak the Lao language at home may need more support and longer exposure to the LtR materials to acquire comprehension skills in Lao, relative to a child who speaks Lao at home. Parental literacy levels are a strong proxy for how much print may be at home, which in turn is one of the strongest predictors of early graphophonological skills and decoding ability (Sénéchal et al., 2012). Other moderating variables include individual variables such as age, gender, disability status, and the quality of the school and instructional infrastructure. Any of these variables might lead to differential impacts of the LtR project on student learning outcomes.

Based on the ToC and the description of the LtR activity, the AIR team designed a mixed-methods research approach to track progress on key indicators and to measure program output and outcomes. The next section describes our methodological approach in detail.

Research Approach

In this section we describe our approach to the overarching assessment. In particular, we provide details surrounding the research questions our assessment strives to answer, the sampling methods used, baseline data collection tools and techniques, and analysis of the baseline data for the LtR program.

Research Questions

AIR is assessing progress toward the expected outcomes using the results framework and will analyze the USAID LtR activity’s approach. The research questions aiding us in meeting these objectives fall under three primary themes: (a) effectiveness of the program, (b) program performance, and (c) sustainability of the program. Addressing these questions enables us to assess the program design and implementation as well as identify factors that facilitate the scale-up and sustainability of the program. We discuss the research questions for each theme in more detail below.

Effectiveness

Analyzing effectiveness means assessing to what extent project inputs and activities led to intended outputs, such as production of higher quality literacy instruction and materials, and to what extent they are likely to lead to desired outcomes, such as improved quality of literacy instruction. The effectiveness of the various elements of the USAID LtR activity is measured by the extent to which the project achieves its objectives relative to the results framework. Furthermore, we assess how these outcomes are distributed by SES, sex, disability status, and language spoken at home.

Performance

To conduct an in-depth analysis of the potential mechanisms and external factors that affect program effectiveness, we focus on the project's performance and implementation processes. These questions investigate experiences of project implementation and perceptions of impact, as well as how these vary across program districts and stakeholder groups.

Sustainability

This theme requires us to assess the delivery of inputs and project activities as well as the linkage between activities and desired outputs to determine to what extent the benefits of the intervention are likely to be sustained and replicated after ownership is transferred to the MoES. We will assess whether the USAID LtR activity successfully strengthened the capacity of both the Government of Lao PDR and MoES in such a way that the benefits of the project are likely to be sustained in the future.

The overall USAID LtR study comprises a student assessment and a performance evaluation, both of which answer different research questions. AIR will employ both quantitative and qualitative methods for the assessment and performance evaluations. We designed a mixed-methods approach to answer all research questions, creating synergies in the process. For example, quantitative methods are typically better suited to answering questions about what happened, whereas qualitative methods can better answer why or how something happened. We summarize the research and methods that will address each research question in Exhibit 2.

Exhibit 2. Research questions and methodological approach

Research Questions	Research Type		Method	
	Assessment	Performance	Quant	Qual
Effectiveness				
1.1. How have student outcomes changed over time in USAID Learn to Read schools, and how do these outcomes differ across different groups (i.e., Lao language proficiency, lowest quintile of performance, ethnicity, socio-economic status,	●		●	

Research Questions	Research Type		Method	
	Assessment	Performance	Quant	Qual
teacher exposure to teacher training, home learning environment, exposure to pre-primary interventions)?				
1.2. How effective are the key interventions—i.e., Reading Readiness Program with Caregiver Engagement sessions, Inclusive Education pilot, teacher training and teacher coaching, and Summer Reading Camps—at contributing to student learning outcomes?		○		○
Performance				
2.1. What factors have inhibited or facilitated the achievement of project goals, objectives, and expected results?		○		○
Sustainability				
3.1. What lessons can we learn about the potential for scaling and/or sustaining this program?		○		○
3.2. What evidence do we have to support program scaling and/or sustainability?		○		○
3.3. What elements should be modified (including additional support required), if any, to ensure the success of scaling and the sustainability?		○		○
3.4. Considering the context of Lao PDR, what interventions are ineffective that should be dropped during the remaining life of Learn to Read and/or for future programming?		○		○

Next, we describe our specific approaches in greater detail. We first present our quantitative approach to conducting the assessment, followed by a description of our qualitative approach.

Research Design

The primary objective of this assessment is to assess the extent to which the LtR activity is able to improve the reading skills of all children in early primary grades, from pre-primary through Grade 2, especially those who are non-Lao-speaking. The second objective is to examine how performance indicators changed in program schools over time. To achieve these objectives, AIR designed a mixed-methods approach—including primary qualitative and quantitative data collection through key informant interviews (KIIs) with stakeholders; focus group discussions (FGDs) with beneficiaries; and assessments of children, classrooms, and home environments—to comprehensively examine the USAID LtR activity in Lao PDR.

Our approach combines a student assessment and a performance evaluation to assess the LtR project activities. Specifically, the student assessment will enable us to measure the changes in literacy and early childhood development outcomes over time by comparing changes in

outcomes for students in Group 2 and Group 3 schools. The performance evaluation will supplement student assessments by examining whether the elements of the LtR project enabled the successful achievement of program outcomes, whether any of those elements presented challenges to achieving results, the perceived impacts of both LtR stakeholders and beneficiaries, the fidelity of implementation of program activities, and the likely sustainability and scalability of the program. As discussed in the previous section, our overall study is designed to investigate the outputs achieved, the assumptions, and the role of moderators illustrated in the ToC for the USAID LtR project (Appendix A).

Sampling Methods

In this section, we describe our sampling strategy for the performance evaluation, starting with the quantitative design and continuing with the qualitative approach.

Quantitative Sampling

Originally, AIR randomly selected 120 schools across two of the phase-in groups: 60 schools from Group 2 and 60 schools from Group 3. We then used stratified random sampling such that we obtained a sample encompassing a split of schools based on the presence of pre-primary classes and the language/ethnicity makeup of the student body. From each selected school, we planned to randomly sample a cross-sectional cohort of 10 students per grade from pre-primary, Grade 1, and Grade 2 at each assessment round. For schools without a pre-primary class, we would randomly sample 15 students per grade from Grades 1 and 2. This sampling approach aimed to yield a total sample of approximately 3,600 students at baseline and endline.

Since class rosters were unavailable a priori, we planned to sample only from the students present at school on the day of the assessments for the cross-sectional student sample. To minimize this approach biasing our results, we will include school-level attendance variables as control variables in our endline analyses.

Revised Sampling

Our baseline data collection was disrupted due to COVID-19 lockdowns; as a result, we were unable to assess the full, selected sample of students from all provinces. The AIR team worked with the SC team to develop contingency plans to collect the remaining quantitative data at the beginning of the following school year (2021–2022). We devised three options: (a) recollect all quantitative data from all schools in fall 2021, (b) maintain the previously collected data and finish the data collection from the remaining sample of students in fall 2021, or (c) use the data collected in spring 2021 and supplement those data with additional datasets to generate a proxy baseline. While the team was hopeful that we could implement one of the first two contingency plans, the continuing lockdown, school closures, and limited access for

enumerators to travel meant that data collection could not resume in fall 2021, and the third option was our only viable way forward. Even so, the quantitative data in Xiengkhuang Province have been collected in full.

Although a few schools did not have enough students to fill all planned quotas, these data provide a robust number of student assessments in each grade, and a reasonable number of caregiver interviews and classroom observations to act as a proxy baseline against which targets could be set for the endline against indicative data. However, halting further quantitative data collection in the remaining three provinces means that the baseline data are no longer truly representative of the Ltr project. Any differences among regions, provinces, or specific ethnic or language groups was not collected. Therefore, to supplement the Xiengkhuang data, we gathered data from secondary sources to use as a proxy baseline for the Ltr project. For full details of the quantitative sampling approach, including suggested secondary data sources, see Exhibit 3 (primary sources) and Exhibit 6 (secondary sources).

Exhibit 3. Quantitative Sample

	Planned (Total)	Actual (Xiengkhuang Only)
Student Assessments	120 Schools 10 Students per Grade (i.e., 30 Students per school) (3,600 Students Total)	40 schools ~30 students per school (i.e., 10 students per grade) (1,059 students total)
Classroom Assessments	1 per pre-primary class (100 Classes Total)	1 per pre-primary class (32 total pre-primary classes)
Classroom Observations	1 per class (Grade 1 and Grade 2) (240 total classes)	1 per class (Grade 1 and Grade 2) 36 Grade 1 classes 43 Grade 2 classes (79 total classes)
Caregiver Surveys	5 pre-primary per pre-primary class (500 Caregivers Total)	~5 per pre-primary class (169 total caregivers)
<i>Sub-total</i>	<i>3,600 students from 120 schools</i> <i>100 pre-primary classrooms</i> <i>240 G1 and G2 classroom observations</i> <i>500 caregivers</i>	<i>1,059 student assessments in 40 schools</i> <i>32 pre-primary classroom observations</i> <i>79 G1 and G2 classroom assessments</i> <i>169 caregiver surveys</i>

We conducted margin-of-error (ME) calculations based on only using Xiengkhuang data to determine the number such that we can be 100(1 – α)% confident that an estimate from our analysis will not differ from the true value by more than the ME. Using the assumptions provided in the Request for Proposals, we calculated the ME of our study, assuming an intraclass correlation of 0.25, an alpha of five percent, and the sampling as laid out above.

When analyzing the cross-section of students in Xiengkhuang Province only, we estimate an ME of 0.08 for outcomes for all students and an ME of 0.09 for outcomes disaggregated by grade level.

Qualitative Sampling

AIR selected four districts for qualitative data collection based on criteria such as ethnolinguistic, socio-economic, and regional diversity. We selected two schools in each district, for a total of eight schools. Selection criteria for schools included the school's group designation, presence of pre-primary classes, and inclusion in the quantitative sample.

At the national, provincial, and district levels, we conducted KIIs with officials from MoES, PESS, and DESB, as well as from PAs. At each school, we conducted KIIs with principals and teachers from Grades 1 and 2 as well as pre-primary (if applicable). Further, we conducted FGDs with parents/caregivers and students in pre-primary and Grades 1 and 2, as well as members of Village Education Development Committees (VEDCs). Full details about the baseline qualitative sample (including the number, types, and locations of respondents) are presented in Exhibit 4.

Exhibit 4. Qualitative sample by location

Province: Xiengkhuang		Vientiane		Attapeu		Champasak	
District: Kham		Feuang		Sanxay		Bachiangchaleunsook	
School 1 (PP–G2, Group 2) Thandtho	School 2 (G1–2, Group 3) Kornhiew	School 1 (PP–G2, Group 3) Mouengfoueng	School 2 (G1–2, Group 2) Naang	School 1 (PP–G2, Group 2) Mainakok	School 2 (G1–2, Group 3) Daksang	School 1 (PP–G2, Group 3) Thongthing	School 2 (G1–2, Group 2) Kengkia
<ul style="list-style-type: none">• 1 Principal KII• 2 Teacher KIIs (PP–G2)• 3 Student FGDs• 2 Parent FGDs• 1 VEDC FGD	<ul style="list-style-type: none">• 1 Principal KII• 2 Teacher KIIs• 2 Student FGDs• 2 Parent FGDs• 1 VEDC FGD	<ul style="list-style-type: none">• 1 Principal KII• 3 Teacher KIIs (PP–G2)• 3 Student FGDs• 2 Parent FGDs	<ul style="list-style-type: none">• 1 Principal KII• 2 Teacher KIIs• 2 Student FGDs• 2 Parent FGDs• 1 VEDC FGD	<ul style="list-style-type: none">• 1 Principal KII• 2 Teacher KIIs (PP–G2)• 3 Student FGDs• 2 Parent FGDs• 1 VEDC FGD	<ul style="list-style-type: none">• 1 Principal KII• 2 Teacher KIIs• 2 Student FGDs• 2 Parent FGDs• 1 VEDC FGD	<ul style="list-style-type: none">• 1 Principal KII• 3 Teacher KIIs (PP–G2)• 3 Student FGDs• 2 Parent FGDs• 1 VEDC FGD	<ul style="list-style-type: none">• 1 Principal KII• 2 Teacher KIIs• 2 Student FGDs• 2 Parent FGDs
<ul style="list-style-type: none">• 1 DESB official• 1 pedagogical advisor• 1 PESS official		<ul style="list-style-type: none">• 1 DESB official• 1 pedagogical advisor• 1 PESS official		<ul style="list-style-type: none">• 1 DESB official• 1 pedagogical advisor• 1 PESS official		<ul style="list-style-type: none">• 1 DESB official• 1 pedagogical advisor• 1 PESS official	
<ul style="list-style-type: none">• 1 MoES staff member							

Data Collection Methods

In this section, we provide detailed information on data sources, as well as the data collection, enumerator training and pilot testing, and quality assurance at baseline, taking COVID-19 implications into account.

Quantitative Data Sources

AIR is using five different quantitative instruments to capture data on early childhood education outcomes, such as children’s literacy, numeracy, and social and emotional learning; the home literacy environment; parental engagement; and the school learning environment over two rounds of data collection: baseline in spring 2021 and endline in spring 2023. These five tools are supplemented by a classroom observation checklist administered in all rounds to collect information on inclusive learning and engagement in Grade 1 and Grade 2 classrooms.

To measure children’s learning and development at the *pre-primary level*, we use the Measure of Early Learning Quality and Outcomes (MELQO), including the Measure of Development and Learning (MODEL) and the Parent/Caregiver Report (PCR), all of which were previously validated for Lao PDR. In addition to the MODEL items, we add tasks to assess story and print concepts and measures of receptive and expressive vocabulary. The full version of the PCR includes questions about children’s levels of learning as well as their social and behavioral functioning. We exclude the questions about children’s levels of learning, as many parents/caregivers in Lao PDR will not have a high enough educational level themselves to be able to provide accurate responses (such as knowing how many letters of the alphabet the child can identify); therefore, the PCR only asks parents about children’s social and behavioral functioning.

Executive function refers to a set of skills that enable and support children’s learning across a wide range of areas, help them focus on what matters, and control their impulses. The instrument includes items to measure two central constructs strongly associated with executive function: working memory and inhibitory control. Specifically, the following assessment modules are intended to measure executive function: backward digit span, forward digit span, and Head, Toes, Knees and Shoulders (HTKS).

Early mathematical skills refers to the use of mathematical concepts—specifically, numbers and operations, spatial reasoning, and measurement—to describe and understand the surrounding world. The MODEL instrument measures these three central constructs through nine different assessment modules: comparison of two sets, measurement vocabulary, shape naming, spatial vocabulary, spatial visualization, verbal counting, producing a set, addition with two sets, and spatial visualization.

Lastly, *early literacy skills* denotes the ability to read, write, and use language proficiently and includes all the skills necessary to achieve these activities. The Measure of Early Learning Quality and Outcomes (MELQO) contains modules to measure four constructs that reflect these three skill sets: alphabet knowledge, phonological awareness, expressive vocabulary, and listening comprehension. Specifically, the following modules capture the four constructs associated with the early literacy domain: familiarity with print, symbol knowledge, word segmentation, listening comprehension, name writing, vocabulary assessment, most-used words, and decodable words.

We capture information about children’s home learning environment and their engagement with parents and other family members in the home (through play and other learning activities) using the IDELA Caregiver Survey. To gain a more comprehensive picture of children’s backgrounds and home environments in areas related to learning in particular, we added questions about food security, home language(s), and children’s exposure to the Lao language.

To assess learning environments, we use a context-appropriate tool adapted from our previous work assessing UNICEF’s Child Friendly Schools (CFS) initiatives. The CFS tool assesses conditions for teaching and learning in areas such as school safety, teacher engagement, and the psychosocial environment in the classroom.

AIR used SC’s Literacy Boost (LB) tool combined with an oral language assessment *to assess literacy outcomes for Grade 1 and Grade 2* students. Given that the LB tool has been piloted and adapted for the Laotian context, AIR used the existing tool with minimal, complementary updates. Given our extensive experience administering early-grade reading assessments and LB assessment tools across the world, including in Lao PDR, we set up a **decision tree and forced-stop rules**. These testing procedures enabled us to terminate testing on harder tasks when we were confident the child would not be able to do the task (e.g., reading comprehension) based on their inability to do the simpler subtasks (e.g., symbol naming). This reduced redundancies in testing and minimized testing fatigue on the part of assessors, students, and education stakeholders. We also added simple, group-administered (and therefore non-time-intensive) **phonological awareness** and **reading comprehension subtasks** that are valid for very early readers. The former let us capture one of the most basic early literacy skills and predictors of later reading ability, and the latter enables us to provide a more robust measure of reading comprehension—the ultimate learning outcome for early literacy development (as opposed to oral reading fluency and other decoding-based literacy outcomes). Complementing the LB assessment is the *oral language assessment of learners in Grade 1 and Grade 2*¹ to show the

¹ Adapted from the USAID Oral Language Module and Room to Read’s Oral Language Assessment.

extent to which learners can speak and understand the language in which they are being assessed through the LB tool.

Exhibit 5. Overview of quantitative tools

Tool	Goal	Approach	Constructs Measured
MELQO MODEL + Phonological Awareness	To assess pre-primary students' school readiness	Age-appropriate and culturally relevant skills and competencies that reflect normative development within three basic domains of early learning and school readiness	<ul style="list-style-type: none"> • Executive function • Social-emotional development • Emergent numeracy • Emergent literacy
MELQO PCR + IDELA CAREGIVER	To provide quantitative measures of child's cognitive, self-regulation, social-emotional development, and home learning environment as reported by the child's parent/caregiver	Gathers household-level information directly from the parents or caregivers of pre-primary students	<ul style="list-style-type: none"> • Parent/caregiver characteristics • Household socio-economic status • Child health and disability • Early childhood education experience • Attitudes toward education • Child language exposure and home literacy environment • Caretaking practices
Classroom Observation Checklist	To capture information on the classroom environment in terms of providing a safe and conducive environment for all children to have the opportunity to learn; general pedagogical practices; pedagogical practices specific to teaching reading	Gathers information through direct observation	<ul style="list-style-type: none"> • School facilities and grounds • General pedagogical practices • Pedagogical practices specific to reading
Oral Language Assessment + Phonological Awareness + Reading Comprehension	To capture the key language and reading subcomponents of early literacy development	Skills are carefully tailored to the Laotian context, age/grade specificity, language properties, and orthographic properties	<ul style="list-style-type: none"> • Child functioning • Oral language • Phonological awareness • Letter (symbol) identification • Decoding most-used words • Oral passage reading • Reading comprehension

Qualitative Methods

The qualitative baseline round sought to understand the capacity of MoES, initial needs of Ltr beneficiaries, and the initial culture of literacy and inclusion² in program areas. Further, AIR examined how teachers use Ltr materials and the perceived benefits of these materials. The baseline served to reconfirm early information on these topics in Group 2 schools, where programming had already started, and to collect initial information in Group 2 schools, where programming had not yet started. Our qualitative approach combined KIIs with national-, provincial-, and district-level implementers and stakeholders as well as FGDs with parents and children in Group 2 and Group 3 schools, as well as with VEDC members.

Key Informant Interviews

AIR conducted KIIs with program implementers at the national, district, and community levels. A *key informant* is a person who possesses expert knowledge about the program or a topic related to the program. KIIs enable participants to reflect freely on interview topics and share implementation challenges and successes. We identified appropriate experts in the Laotian government with SC.

National-Level KIIs. AIR conducted KIIs with MoES officials at baseline to understand their preparedness to implement large multitiered interventions and their capacity to effectively communicate with district- and community-level actors.

District- and Provincial-Level KIIs. At baseline, we interviewed district-level stakeholders—including DESB officials, PESS officials, and PAs—to understand communities' needs and any challenges that exist related to school readiness and early childhood education. Through interviews with DESB and PESS officials, we investigated the culture of community support for education (literacy in particular), parental engagement in education, and the factors influencing student and teacher school attendance. We also interviewed PAs to explore challenges that teachers face in the classroom and the resources and training needed to improve children's learning outcomes, particularly for non-Lao-speaking children and children with mild disabilities.

School-Level KIIs. AIR implemented interviews with principals and teachers to gain a holistic understanding of classroom culture and children's in-class learning environment at baseline. Specifically, we asked about initial pedagogical approaches and areas for growth in the equal engagement of girls and boys, Lao-speaking and non-Lao-speaking children, children who did not attend pre-primary, and children with disabilities. We asked teachers and principals about the training and resources to which they have access prior to Lao PDR Ltr and what kind of training and resources would benefit them most. In addition, we investigated how teachers engage

² Under Ltr, inclusion is focused on engaging non-Lao speaking children, students who did not attend pre-primary school, and students with difficulties in learning.

parents to promote school attendance and continue their children’s learning outside the classroom.

Focus Group Discussions

We conducted FGDs with VEDC members, parents, and children at baseline. Focus groups included four to six participants for a semi-structured and moderated discussion. We selected FGDs because they produce a wealth of in-depth, qualitative data and often generate new and unexpected ideas not prompted by one-on-one discussions. Because respondents can share ideas, disagree, and reach consensus, researchers learn from a wealth of perspectives in one FGD.

Village-Level FGDs. We conducted focus groups with the VEDC to identify the contextual factors that affect children’s learning inside and outside the classroom, such as access to supplementary reading materials in the home environment, parental attitudes toward education, poor living conditions, access to pre-primary schools or alternative approaches to school readiness, and the relationship between the wider community and the local school.

Parent/Caregiver FGDs. We carried out FGDs with parents/caregivers at baseline to understand how they support their child’s education inside and outside the classroom. We investigated how they are engaged with their child’s education, how they perceive the quality of education at their local school, and how they interact with their children’s teacher. In addition, we conducted a 24-hour recall exercise with parents to understand children’s literacy environment outside school. In this exercise, parents were asked to describe the opportunities for child literacy in their home environments, including access to supplementary reading materials, designated reading and homework areas, and reading and storytelling by a caregiver or sibling. We also explored attitudes toward Lao language instruction by both Lao-speaking and non-Lao-speaking parents and caregivers.

Child FGDs. Lastly, we conducted FGDs with children in pre-primary through Grade 2 to understand their learning environment inside and outside school. Because our respondents were young children, the FGDs were short and highly participatory. We started each FGD with an interactive exercise in which we asked the children to draw and describe all of the places where they read and where people read to them. Then we used their drawings to prompt further discussion of who reads to them, what kinds of stories engage them, and their general attitude toward and exposure to reading. At baseline, we aimed to develop an initial understanding of children’s enjoyment of school, their relationship with their teachers, barriers to their attending school, their level of access to reading materials, and how their parents describe the importance of education.

Data Collection

In this section, we describe details of baseline data collection activities. We begin with the training of field staff including pilot testing the surveys and interview protocols, then describe the actual data collection activities.

Field Staff Training. AIR supervised IRL in recruiting people who have previously conducted student and household surveys with a focus on educational topics, and who have used tablets or other electronic devices for data collection. IRL recruited 42 enumerators of which 32 were ultimately selected to join the team based on their performance during the training, and 8 supervisors.

Next, we thoroughly trained field staff in applying the data collection materials and implementing quality control procedures for assessments conducted in the field. AIR provided training to IRL master trainers via Zoom over one day in early March 2021. IRL master trainers then trained the enumerators, supervisors, and other IRL staff over four days in late March 2021 in Lao PDR. The training began with a discussion of the theory underpinning the questionnaire, followed by a discussion of the questionnaire items to ensure a complete understanding of the goal of each question. SC staff led a training on child safeguarding practices and other ethical protections. During this phase of the training, we also reviewed survey protocols, roles and responsibilities, the use of electronic devices for data collection, and techniques to interview respondents. The trainees then practiced what they learned in role-play exercises, demonstrations, and other exercises that illustrated typical cases they may face in their fieldwork. The classroom practice was complemented by a field practice during which trainees visited non-study households and conducted the survey. This pilot test was conducted over one day in 13 primary schools in Hatxayfong District, Vientiane Capital in late March 2021. After that, the IRL team evaluated each trainee's performance in the field practice and their understanding of the materials and questions in order to assess whether more classroom or field practices were required, and to identify those who performed better and would be part of the field staff.

Data Collection Oversight. IRL supervisors provided quality control and ensured the technical soundness of data collection and entry, with remote oversight by AIR staff. We generated several protocols to achieve these objectives. For example, data collection supervisors ensured that all surveys and materials were completed correctly before leaving each evaluation site. We used KoBo Toolbox, an open data kit-based platform that allows for data encryption and a high level of security. Data were downloaded from the server daily and deleted from the tablets used for data collection to maximize data security.

For qualitative data, AIR used a systematic and efficient process for organizing and analyzing qualitative data. This process included audio-recording all interviews in the local language, transcribing them in the local language, and then translating them into English. All analyses were then performed with de-identified data.

As mentioned earlier, quantitative data collection activities were halted early due to a resurgence of COVID-19 throughout Lao PDR resulting in travel restrictions between provinces and districts. As such, the AIR/IRL team was forced to suspend data collection activities. Even so, qualitative data was collected in full between March and May 2021 prior to this suspension.

Data Analysis Methods

AIR started data analysis with rigorous quality control procedures for both quantitative and qualitative data before proceeding with data cleaning and analysis.

Quantitative Data Analysis

AIR assessed the baseline levels of students' achievement and classroom practices by generating descriptive statistics for each key outcome. Further, we conducted *t-tests* of means to examine differences in average outcomes at baseline based on grade level, LtR phase-in group, sex, home language, rurality, disability, and socio-economic status. These disaggregated results can be found in Annex B.

As described earlier, the COVID-19 situation in Lao PDR halted the collection of data at baseline. Therefore, AIR will also use existing data from similar programs operating in Lao PDR to construct a proxy baseline against which to measure endline results for the full LtR program sample. Exhibit 6 shows the relevant studies identified by the project team, along with the assessment tool used and the grade level assessed.

The team has data or an agreement in process with Catholic Relief Services, Plan International, the Department of Foreign Affairs and Trade (DFAT), MoES, and UNICEF. AIR collated these sources and worked with our literacy expert to combine subskills by overarching construct in order to more easily compare student outcomes across studies. We also attempted to map out student performance by district, where possible, to show regional differences and similarities such that we can make inferences about the baseline reading levels for students in LtR project districts and provinces for which we do not have baseline data. Further, we ran multivariate regression analyses to identify some of the key determinants of students' literacy outcomes from these other projects—again, to enable our team to make inferences about the baseline reading levels of students in our LtR sample based on known characteristics (e.g., age, main language spoken at home, sex, rurality, multigrade classroom, parental education, and disability status).

Exhibit 6. Datasets used to construct proxy baseline

Dataset	Owners	Assessment	Grade(s) Assessed	Year Collected
LEAPS	CRS/Save/IMPAQ	LB Tool	G1 and G2	2017
BEQUAL	DFAT	ASER	G1 and G2	2014
LEARN	Plan International/AIR	MELQO MODEL	G1	2017
GPE Baseline	MoES		Pre-primary	2015
MICS	UNICEF		Primary	2018
EMIS	MoES	National Assessment	All	Annually

Notes. LEAPS is Learning and Engaging All in Primary School. CRS is Catholic Relief Services. LB is Literacy Boost. BEQUAL is Basic Education Quality and Access in Lao PDR. DFAT is Department of Foreign Affairs and Trade. ASER is Annual Status of Education Report. LEARN is Lao Educational Access, Research, and Networking Project. MELQO is Measure of Early Learning Quality and Outcomes; MODEL is Measure of Development and Learning. GPE is Global Partnership for Education. MoES is Ministry of Education and Sports. MICS is Multiple Indicator Cluster Survey. UNICEF is United Nations Children’s Fund. EMIS is Education Management Information System.

In light of these baseline data limitations, the AIR team is unable to definitively provide baseline values for student outcomes, classroom teaching practices, or available resources for schools, aside from those in Xiengkhuang Province. Use of the proxy baseline only enables us to draw illustrative conclusions about key outcomes at baseline. Further, the disruption in quantitative data collection at baseline required AIR to remove the analysis of pilot programs (including the Summer Reading Program and Caregiver Engagement Program), as we could collect neither baseline data nor follow-up data for schools participating in these pilots. Regardless, AIR is confident in our ability to provide SC, USAID, and other key stakeholders with reliable data and insights based on the data that were collected at baseline, as described.

Qualitative Data Analysis

The team analyzed data from KIIs and FGDs using the NVivo qualitative software program. We developed a preliminary coding structure based on seven key topics: (a) background, (b) reading, (c) inclusion, (d) training, (e) parental engagement, (f) classroom observations, and (g) coordination, based on the evaluation questions and primary topics included in the KII and FGD protocols. We assigned three coders to analyze the data and compared coding across multiple transcripts to ensure inter-rater reliability. Coders made slight modifications to the coding structure during data analysis as new themes and findings emerged. Qualitative researchers characterized the prevalence of responses and examined any differences between Group 2 and Group 3 schools, grades, and regions. When researchers identified contradictory

data, they reviewed the dataset to uncover potential explanations. Based on the analysis process, the team identified key findings and themes related to the evaluation questions.

Baseline Results

In this section, we present the results from our mixed-methods baseline assessment of the LtR program. First, we focus on the LtR program background, examining the current conditions on the ground. Then we describe the characteristics of the students comprising our baseline sample, followed by current levels and types of parental engagement. We then present results from the student assessments for pre-primary students as well as Grade 1 and Grade 2 students, including subgroup analyses and results from our proxy baseline analysis. Lastly, we present results describing current classroom characteristics including safety, infrastructure, inclusivity, teaching practices, methods, and training, and resource availability.

Program Background

First, we present qualitative findings on perceived attendance and literacy, barriers to schooling, government capacity, and participants' program awareness in Group 2 and Group 3 schools.

Attendance Trends

School principals and members of MoES, DESB, and PESS believed that primary and pre-primary attendance levels were high and had increased in recent years. According to these interview respondents, this improvement in attendance was driven by increased support from teachers, family members, and VEDCs, as well as economic development in the region. One member of DESB believed that the LtR program may have also contributed to rising attendance rates in Group 2 schools:

"The school attendance at the provincial level is better than before because of country development. For example, [students are] accessing education equipment such as colourful word cards for both Lao and English alphabets, which could be found in the markets or are provided by the project."

Teachers, parents, and students across program groups also cited positive attendance trends, claiming that many children miss school only when they are sick. Students and parents expressed a high degree of student motivation. Children were extrinsically motivated to attend school by the desire to be with their friends and by fears of bad grades or reprimands from parents or teachers. They were internally motivated by the desire to learn, gain knowledge, and improve their literacy.

Quantitative data from classroom observations support these perceived attendance trends with 75% or more of the students currently enrolled present in 81% of the classes observed (86 schools out of 106). In 80% of the classes observed, at least three-quarters of enrolled girls were present while the same was true for boys in 81% of schools suggesting relatively equal attendance rates between the sexes.

Literacy Trends

Respondents across Group 2 and Group 3 schools reported mixed views of children's literacy levels; some noted that student literacy was satisfactory, while others believed that levels were low. For instance, one member of the Vientiane PESS stated, *"The primary school student's literacy rate in this province is currently above average; the rates slowly increase year by year."* Some district-level respondents, however, claimed that literacy was below average or said that they did not monitor literacy rates and therefore were unaware of them. Parents also held mixed views about literacy trends. Some Grade 1 and Grade 2 parents claimed that their children's literacy had increased and that they could read books after attending school. Yet other Grade 2 parents complained that their children still could not read well and expressed a desire for after-school tutoring.

Barriers to Schooling

Socio-economic barriers were the most frequently cited challenge to pre-primary and primary school attendance, followed by long distances to school and a lack of teachers. Although government programs provide school fees for some families with low incomes, parents may still struggle to pay expenses for clothing, food, and school supplies. One parent in Xiengkhuang explained, *"There is no money to buy clothes, as I have many children. It is difficult to support all children to attend pre-primary and primary school."* Many respondents claimed that school attendance was especially difficult for children of subsistence farmers. Respondents noted that attendance tended to be lower during the harvest season, when many parents needed to bring their children to the fields, which are located far from home and school. When parents were working, many did not have time to send their children to school, especially when the families spent the night away at the farm or when children were too young to walk to school by themselves.

In addition, many respondents noted that long distances to school presented a barrier to regular attendance. Interviewees explained that children often must walk very far to school and road conditions can be difficult, especially during the rainy season. Parents also worried about their children's safety to and from school. They feared road accidents or their children experiencing dangerous conditions while crossing the river. Traveling to school was especially difficult for pre-primary-aged children whose parents claimed could not walk long distances alone.

Several interviewees explained that the lack of teachers and teacher absenteeism also impeded school attendance. Parents frequently mentioned that schools did not have enough teachers to include a pre-primary class and that teachers frequently had to teach in multigrade classrooms, which hindered students' ability to understand the lessons. A couple of respondents added that teachers would sometimes miss school because part of their livelihoods depended on agriculture, so they would spend days in the fields instead of at school. When teachers did not come to school regularly, children were discouraged from attending as well.

As one parent explained,

"Sometimes a teacher doesn't come to school without notice, and when children don't see their teacher, it makes them feel tired [...] and too lazy to go to school, so they will turn back home. One teacher is not enough, and there are no teachers to back up when some of the teachers are on leave."

Government Capacity

Respondents indicated that MoES provides schools with administrative support, monitoring, learning materials, teacher support, and registration fee waivers, but that such support may be insufficient. The government provides administrative support in the form of technical assistance, budgeting, activity planning, and providing the School Based Management system. With their policies for monitoring, MoES has collected data on school attendance and student health. DESB participants claimed to visit schools and communities for regular monitoring of education quality. Meanwhile, PESS conducts monitoring twice per year to support DESB. However, several members of DESB indicated that they do not monitor literacy rates. Many members of DESB were unaware of regional literacy trends and could not answer any questions on the topic.

MoES also provides professional development for teachers and capacity building to staff at the provincial and district levels. DESB then helps with teacher allocation and teaching schedules. Other government support includes provision of textbooks and learning materials. Yet one member of the Bachingchaleunsook DESB claimed that complementary programs help address gaps in government funding:

"If there is only the government or the MoES providing education equipment such as storybooks and word cards, there might not be enough budget to well support all those things. It is great and better to have a project (LtR)."

Participants thus acknowledged the role of nongovernmental organizations and other international organizations in increasing the government's capacity to provide materials and technical support.

Additionally, interview participants mentioned that the government provides school fee waivers for families with low incomes. However, education administrators had mixed claims about the level of support for such students. One stated that *“children just show the [program] card to the teacher to waive the registration fee, or for a family that has three children, the registration fee is 50%.”* Another noted that the MoES provides around 50,000 KIP per student, while others claimed that school fees are free for poor children. Nonetheless, parents claimed that money was often a barrier to children’s school attendance, as previously described.

Program Awareness

The vast majority of parents across both Group 2 schools (where programming had already begun) and Group 3 schools (where programming had not yet begun) had never heard of LtR. Some of the parents had heard of the storybook component of LtR and said that their children would bring books home from school. A few parents from one of the two Caregiver Engagement Pilot (CEP) schools were familiar with LtR because they had attended trainings at the invitation of a teacher.

Of the educators who participated in our study, all Group 2 teachers and principals were familiar with LtR programming. They could describe the program’s teacher training, reading corners, and storybook components. Of the Group 3 educators, many teachers and principals did not know about LtR, although several of them had learned about the program through other Group 2 schools.

Among VEDC members, most participants in Group 2 schools did not know about LtR. A couple of participants were familiar with the program, and some participants were vaguely familiar with it (i.e., they were familiar with either the name or the activities but not both). No VEDC members in Group 3 schools knew about LtR.

Pedagogical advisors and members of DESB and PESS were all familiar with LtR and were able to describe its purpose, structure, and activities.

LtR Student Characteristics

In this section, we briefly describe the characteristics of the students comprising our baseline sample (see Exhibit 7). Our full baseline sample includes 986 students from Xiengkhuang, Vientiane, and Champasak Provinces. These students come from 40 schools in Xiengkhuang, nine schools in Vientiane, and five schools in Champasak. Only one-third of the Grade 1 and 2 students were in multigrade classrooms and a little over one half of were in Group 2 schools. Half of the Grade 1 and 2 students surveyed were female, had an average age of seven years, and a little over two-thirds spoke Lao at home. A little fewer than half of the Grade 1 and 2

students surveyed noted missing school in the past week (40%), with the average missing two days of school. 21% of Grade 1 and 2 students self-reported having a disability of any kind.³

For our pre-primary sample, half of the students surveyed were female. The average age of those surveyed was five years and approximately one-third lived in rural areas. Like the Grade 1 and 2 students, almost two-thirds of pre-primary students in our sample spoke Lao at home. Caregivers of pre-primary students reported that 12% of their children had a disability, half of all children had been treated with deworming medication in the past three months, and about one-fourth had diarrhea in the past 12 months (Exhibit 8).

Exhibit 7. Descriptive statistics—Student Characteristics, All Provinces

	N	Mean	SD
Grade 1 and 2			
Age (years)	986	7.09	0.96
Female	986	.49	0.50
Rural district	986	.26	0.44
HH has 7 or more assets (out of 11)	986	.46	0.50
Lao is spoken at home	943	.67	0.47
Attends Group 2 school	986	.57	0.50
In Multigrade classroom	986	.33	0.47
Missed school last week	974	.4	0.49
Number of school days missed	386	2.38	1.36
Difficulty seeing	977	.07	0.25
Difficulty hearing	975	.09	0.29
Difficulty walking/climbing	976	.14	0.35
Any disability	971	0.21	0.41
Pre-primary			
Age (years)	415	5.25	0.88
Female	415	0.5	0.5
Rural district	415	0.27	0.45
Lao is spoken at home	415	0.62	0.49
Attends Group 2 school	415	0.65	0.48

³ Disability status was measured using the Washington Group Short Set questionnaire which asks about difficulty seeing, hearing, and walking/climbing (means are presented in Exhibit 7). “Any disability” refers to a student having any difficulty with any of these tasks (i.e., seeing, hearing, walking/climbing). These Washington Group questions were asked within the student assessment for Grade 1 and Grade 2 students, so the disability classification is based on self-reported student-level data. This same set of questions was administered via the parent/caregiver survey for a subset of pre-primary students, therefore, we are unable to fully classify sampled pre-primary students’ disability status.

Exhibit 8. Descriptive statistics—Caregiver survey (child)

Indicator	N	Mean	Median	SD	Max
Child has a disability	225	0.12	0.00	0.33	1.00
Child had deworming medication in the past 3 months	221	0.51	1.00	0.50	1.00
Child had diarrhea in the past 12 months	224	0.26	0.00	0.44	1.00

Quantitative interviews to main caregivers render complementary information about the health status of children in our sample. Slightly more than 10% of children were reported to have a cognitive or physical disability. Deworming is common, with half of caregivers indicating that their child had received medication to kill intestinal worms in the past three months. Despite deworming efforts, diarrhea is relatively frequent in the sample, as about a third of caregivers indicated that their child had at least one episode in the 12 months prior to the survey.

Caregiver data provide supplementary descriptive information on household-level characteristics (Exhibit 9). The average student lives in a household with five to six members, where usually only one main language is spoken. Similarly, most households tend to be located within linguistically homogeneous communities in which only one main language is spoken. About one third of households are food insecure and resort to eating less diversified diets and/or smaller or fewer meals per day as coping mechanisms. Packaged mineral water is the main source of drinking water for the majority of households, although spring water and other less safe sources are also common. Housing conditions seem overall adequate, with almost all houses having their roofs made of tile or iron sheets, and their walls made of plastered concrete or high-quality timber.

In terms of handwashing practices of caregivers, a proxy for overall household hygiene, we found that while about 90% of caregivers wash their hands before food preparation, before cooking, and after defecation, only 70% do so as well before feeding children and after cleaning babies' bottoms. These findings suggest that there is room for improvement in this area. Good hygiene not only helps children stay healthy and prevents the spread of infectious disease, but also enables children to miss fewer days of school.

Exhibit 9. Descriptive statistics—Caregiver survey (household)

Indicator/Variable	N	Mean	Median	SD	Max
Household size	225	5.63	5.00	1.73	13.00
Number of languages spoken at home	225	1.23	1.00	0.44	2.00
Number of languages spoken in the community	225	1.23	1.00	0.71	5.00
In the past 4 weeks, did you or anyone in your household:					

Indicator/Variable	N	Mean	Median	SD	Max
Worry about not having enough food?	225	0.28	0.00	0.45	1.00
Eat a limited variety of foods?	225	0.27	0.00	0.44	1.00
Eat a smaller meal or fewer meals?	225	0.19	0.00	0.39	1.00
Go a whole day/night without eating anything?	225	0.03	0.00	0.16	1.00
Main material of house roof:					
Roof tile	225	0.71	1.00	0.45	1.00
Iron sheet	225	0.27	0.00	0.44	1.00
Main material of house walls:					
Plastered concrete	225	0.21	0.00	0.41	1.00
High-quality timber	225	0.61	1.00	0.49	1.00
Other	225	0.18	0.00	0.39	1.00
Main source of drinking water:					
Packaged mineral water	225	0.45	0.00	0.50	1.00
Spring water	225	0.34	0.00	0.47	1.00
Other	225	0.16	0.00	0.36	1.00
Handwashing practices of caregivers:					
Before food preparation	225	0.89	1.00	0.31	1.00
Before eating	225	0.90	1.00	0.30	1.00
Before feeding children	224	0.70	1.00	0.46	1.00
After defecation	225	0.87	1.00	0.34	1.00
After cleaning babies' bottoms	225	0.72	1.00	0.45	1.00

LtR Parental Engagement

In this section, we describe results related to LtR students' parental engagement. We report on baseline levels of parental engagement based on the qualitative focus groups with parents as well as data from the caregiver surveys.

Attitudes Toward Education

Parents in our sample had neutral gender views on education and understood the importance of both primary and secondary schooling. Quantitative findings indicate that virtually all caregivers strongly agreed that both girls and boys should attend primary and secondary school

(Exhibit 9). In addition, about 90% of caregivers strongly disagreed with the possibility of keeping their children out of school if help is needed at home.⁴

Consistent with the quantitative findings, parents in our qualitative interviews overwhelmingly stated that education was important for their children to have a career, good future, and a better life. Many cited the desire for their children to have careers outside the subsistence farming activities common for families in the area. For example, a parent from Bachingchaleunsook District stated:

“It’s very important for a child to go to school and if the school has an extra hour on English or other subjects in the evening...[I have] a high expectation for [my] children to have a good education to escape working on the farm like [me] and have a good job.”

However, views among stakeholders about parental engagement were more mixed. While principals stated that parents were actively engaged in their children’s education, district officials and teachers had mixed views on the subject, with several stating that parents were not adequately involved in their children’s education. Stakeholders who noted high levels of parental engagement in education indicated that parents supported their children’s education through sending children to school and contributing to school fees and educational materials. Respondents who stated that parents were not adequately engaged in children’s education cited barriers such as poverty, lack of time, and parents’ own lack of literacy/education. Some of these respondents believed that parents could not support children’s education at home because they could not read, while others asserted that parents who worked in farming were too tired to support children to study at home. For instance, a principal from a Group 2 school in Sanxay District noted, *“Parents who can read and write are actively engaged in children’s education, but those who cannot read and write cannot engage much.”* A teacher from a Group 2 school in Bachingchaleunsook District also noted,

“Parents are rarely engaged in their children’s education. Because most of the parents are farmers, they work in the field until late at night; some parents are working until 11 p.m. or 12 a.m. Therefore when they come back [home], they don’t have enough strength to engage in their children’s education.”

A few stakeholders believed that parents had negative attitudes toward education. These respondents believed that parents did not support their children’s education at home and rarely engaged with their children’s educational activities. For example, a teacher from a Group 2 school in Kham district stated, *“Children do not receive adequate educational support from their parents. Some children drop out of school because their parents are poor and do not*

⁴ We did not find statistically significant differences for outcomes reported by caregivers in Group 2 and Group 3 schools.

see the importance of education.” Further, VEDC members from a Group 2 school in Feuang District stated that some parents still do not see the importance of education, adding that they did not want to pay VEDC fees and rarely attended VEDC meetings. These results are in direct contrast to what parents themselves are reporting.

Exhibit 10. Descriptive statistics—Caregiver survey (caregiver)

Indicator	N	Mean	Median	SD	Max
Girls should go to primary school. (strongly agree)	225	0.99	1.00	0.11	1.00
Boys should go to primary school. (strongly agree)	225	0.99	1.00	0.11	1.00
Girls should go to secondary school. (strongly agree)	225	0.99	1.00	0.09	1.00
Boys should go to secondary school. (strongly agree)	225	0.99	1.00	0.11	1.00
If help at home is needed:					
Daughters should be kept out of school. (strongly disagree)	225	0.91	1.00	0.29	1.00
Sons should be kept out of school. (strongly disagree)	225	0.90	1.00	0.30	1.00

Access to Books at Home and Parental Stimulation

Research shows that children have much to gain, even beyond literacy, from having books at home. Unfortunately, over 75% of caregivers reported that their households do not have any children’s books, while about 20% said that their home had just one to three books (Exhibit 11). Moreover, self-reported lack of access to storybooks at home was statistically equal between Group 2 and Group 3 caregivers, even though all Group 2 students should have been able to borrow books from school by the time this baseline survey was conducted. Despite the overwhelming unavailability of children’s books at home, over 70% of parents reported that they or another adult in the household had read a book to their children in the past three days. This suggests that caregivers may be using other types of reading material, such as textbooks, magazines, or newspapers, to compensate for the lack of storybooks.

Exhibit 11. Descriptive statistics—Caregiver survey (child)

Indicator	N	Mean	Median	SD
Home has 0 books for children	225	0.76	1.00	0.43
Home has 1–3 books for children	225	0.21	0.00	0.41
Home has 4+ books for children	225	0.03	0.00	0.16
In the past 3 days, did caregiver or any household members aged 15 or over engage in any of the following activities with child?				
Read books	224	0.71	1.00	0.45

Told stories	225	0.60	1.00	0.49
Sang songs	225	0.54	1.00	0.50
Took the child with them outside the home	225	0.79	1.00	0.41
Played	225	0.88	1.00	0.33
Name, counted, or drew things	223	0.83	1.00	0.37
Number of stimulating activities	225	4.34	5.00	1.68

Qualitatively, we also found that most parents and students reported having no access to storybooks at home, with the exception of some parents and students from Group 2 schools who had borrowed books made available by the LtR program. In addition, most parents stated that they had not read to their children at home, largely because they did not have access to storybooks and could not read. Although some parents of pre-primary and Grade 1 students in Group 2 schools (which were receiving the LtR intervention) described borrowing storybooks from schools, some still cited a lack of storybooks as a barrier to reading at home. The PA from Attapeu Province expressed a similar view: *“Most parents just tell their children to read a storybook or textbook before bed because most parents could not read, and a parent is rarely buying learning material for their child.”* This suggests that parents’ illiteracy, as well as lack of access to storybooks, are barriers to engaging in reading activities at home.

We asked parents and students whether they had read a storybook (or, alternatively, whether a storybook had been read to them) in the last 24 hours, as well as whether they generally helped their child with reading and homework. There were mixed responses about whether children were receiving reading support at home.

Half of the respondents (including similar numbers of respondents from schools in Group 2 and Group 3) stated that children received reading or homework support in some way. Parents tended to report helping their children with homework rather than reading to them. For example, parents from a school in Kham District who had not read to their child in the last 24 hours described doing Lao homework with their child the night before, for periods ranging from 15 minutes to one hour. Students, on the other hand, described being read to by relatives (especially older siblings) or reading on their own. Since many children reported having no access to storybooks, they described being read to from notebooks or their Lao textbook. For instance, one child described how his sister read to him at home: *“[My] sister likes to sit under the house to read for [me] the Lao language notebook, and I... concentrate to listen because [I] want to know more, and sometimes [I] feel sleepy.”* One of the few children who had access to storybooks at home recounted, *“When [my] older sister reads a storybook to [me], I feel excited to listen.”* This indicates that reading with siblings is a positive experience for some students.

However, about half of respondents noted that children were not read to at home, with several mentioning the lack of storybooks. In addition, a few parents mentioned that they were unable to support their children with reading or homework because they were illiterate. For instance, parents from a Group 2 school in Bachiangchaleunsook District noted that the teacher had suggested they support children's learning at home, but they could not do so because they could not read. Others stated that parents were too tired from agricultural work to help their children with homework. A VEDC member from Kham District noted that some parents did not support children reading at home because they were too tired from working in the rice fields and could not speak Lao. Reading practices did not seem to vary according to group.

Lastly, quantitative findings also indicate that parents stimulate their children often and in a variety of ways (Exhibit 10). On average, kids had partaken in four to five stimulating activities (out of six) with an adult during the past three days. The most common activities were playing (88%) and naming/counting/drawing things (83%). To a lesser extent, caregivers also engaged in storytelling (60%), a finding that is consistent with the high levels of illiteracy among caregivers. We do not find differences in parental engagement between boys and girls (Exhibit B10, Annex B) suggesting that parents stimulate their children equally regardless of their gender.⁵

Teacher/Parent Interaction

Schools that have not received the LtR intervention seem to have lower levels of interaction between teachers and students, although respondents from a couple of Group 2 schools also reported low levels of interaction. Respondents noted that parents interacted with teachers during special school ceremonies (such as school opening and closing) or when students had an attendance or performance problem. Teachers would sometimes call or visit the homes of students who were absent or had performance issues. According to respondents, these schools generally did not hold meetings to inform parents of strategies to support their children at home. For example, the principal from a Group 3 school stated, *"Teachers discuss with parents only when students have problems [with] studying or [are] sick during school. If there's a student who has low average scores, the teacher invites the parents to discuss and find a solution at school."* In addition, a few respondents reported having no interaction at all between teachers and parents. This included respondents from two schools (one Group 2 and one Group 3 school), one of which is benefiting from the CEP.⁶

Respondents from Group 2 schools reported more interaction and engagement between parents and teachers. However, some Group 3 schools also appear to have a high level of

⁵ Exhibits B11-B13 in Annex B present descriptive statistics on parental stimulation separately for each province.

⁶ The Caregiver Engagement Pilot (CEP) was implemented at the pre-primary level across selected Group 2 schools.

interaction between parents and students. Respondents from these schools generally stated that teachers communicated with parents about student attendance and performance, and how to support their children's learning at home. In some cases, teachers from these schools held meetings with parents to discuss parental support for reading and inform parents about the availability of storybooks. For instance, a teacher from a Group 2 school in Sanxay District explained that there was a teacher–parent meeting three times a semester to discuss children's education. During these meetings, teachers discussed how parents could support children's reading at home and informed parents that they could borrow storybooks to read at home.

Successes. Parents seem to value education as an opportunity for a brighter future for their children. Most parents seem to be engaged with children's education in various ways, including participating in school events, supporting school construction, and buying school materials for their children. In addition, schools that have started receiving the LtR intervention appear to have higher levels of engagement between parents and teachers. Teachers at these schools noted that parents are borrowing books and appear to be giving support to their child at home, such as reading with their child. For example, one teacher noted that the LtR session *“was really helpful for parents and children, because children are more interested in reading and actively borrow storybooks to read with their parents at home.”*

Challenges. Lack of literacy among parents seems to be a key challenge in parental engagement with education. Principals and teachers noted that some parents could not help their children with reading at home because they themselves are illiterate. For instance, a teacher noted, *“The teachers have the meeting with parents to encourage their children to practice reading at home. Some parents could not read, but the teachers did explain that they could teach their children by using pictures.”* This is corroborated by reports from many of the parents we interviewed, who said that they did not read a storybook to their child or help them with homework because they could not read.

Lack of time from parents also seems to be a barrier to supporting children's education, with several informants noting that parents are too tired from farming to help their children with reading, and that they are not interested in attending school meetings. The DESB official from Feuang District explained this issue as follows: “I want to talk only about this district. Most parents are not interested in participating in the LtR activities, such as when we conducted a meeting. Just a few parents came to join.” However, parents seem to largely value education, and they rarely mentioned lack of time or interest as a barrier to engaging with their children's education. This indicates that other barriers, such as illiteracy or lack of interaction with the school, may play a larger role.

Further, some schools are not proactively engaging parents to support their children’s education. This was slightly more common in Group 3 than in Group 2 schools, although there were cases across both groups. Several parents noted that they had little or no interaction with their child’s teacher, or they heard from the teacher only if there was a problem with attendance or student performance. Not surprisingly, schools that were more proactive in engaging with parents seemed to have a higher level of parental engagement in education and reading support. However, respondents from schools receiving the CEP had mixed responses about the level of interaction between parents and students. While parents of pre-primary students from one CEP school generally reported a high level of interaction between parents and students, including meetings to discuss student performance and parental engagement, respondents from another CEP school did not hold regular meetings between pre-primary parents and teachers, and teachers appeared to communicate with parents only when there was a performance or attendance issue.

LtR Student Assessment Outcomes

We present the results from the pre-primary, Grade 1 and Grade 2 student assessments in this section. The results from these surveys provide baseline values for student school readiness and literacy skills. Further, we present the result from our proxy baseline analysis in the subsequent section.

Pre-primary

To assess the baseline level of children’s learning and development at the *pre-primary level*, we complement findings from the parent/caregiver report (PCR) summarized earlier, with outcomes from the Measure of Development and Learning (MODEL; UNESCO, UNICEF, Brookings Institution, and World Bank, 2017). MODEL items aim to capture information on age-appropriate skills and competencies that reflect normative development within three domains of early learning: executive function, early mathematical skills, and literacy skills.

Descriptive statistics show that the average scores across all domains are low, ranging from 28% for executive function to 32% for literacy skills and 45% for early mathematical skills (Exhibit 12). Within the executive function, the backward digit span item was particularly difficult for children (average score = 3%), which is consistent with findings from other studies, including a project in Lao PDR⁷ (Exhibit 13). Among the items comprising the early math skills domain score, comparing sets (77%) and measurement vocabulary (73%) were the easiest tasks for students while shape naming (10%), addition with two sets (19%), and spatial visualization (31%) were the most challenging for students. Lastly, regarding early literacy skills, pre-primary students had the most difficulty with the modules on decodable words (0%), most-used words

⁷ http://ecdmeasure.org/wp-content/uploads/2018/04/MELQO-BRIEF-1_MODEL-Results.pdf

(1%), and word segmentation (6%), but performed better on symbol knowledge (55%) and vocabulary (69%).

Exhibit 12. Descriptive statistics—MODEL scores by domain

Domain	N	Mean	Median	SD	Max
Executive Function	415	0.28	0.33	0.09	0.57
Early Mathematics Skills	415	0.45	0.47	0.21	0.94
Early Literacy Skills	415	0.32	0.32	0.15	0.79

Note. Scores are the average proportion (percentage) of correct responses across modules comprising a domain.

Exhibit 13. Descriptive statistics—MELQO scores by module

Domain	N	Mean	Median	SD	Max
Comparison of two sets	415	0.77	1.00	0.42	1.00
Measurement vocabulary	415	0.73	0.75	0.31	1.00
Shape naming	415	0.10	0.00	0.18	0.75
Spatial vocabulary	415	0.57	0.50	0.36	1.00
Highest number stated	415	0.50	0.33	0.37	1.00
Numeral identification	415	0.46	0.40	0.36	1.00
Producing a set	415	0.45	0.33	0.37	1.00
Addition with two sets	415	0.19	0.00	0.39	1.00
Spatial visualization	415	0.31	0.40	0.35	1.00
Familiarity with print	415	0.40	0.33	0.29	1.00
Symbol knowledge	415	0.55	0.65	0.37	1.00
Word segmentation	415	0.06	0.00	0.19	1.00
Listening comprehension	415	0.35	0.20	0.35	1.00
Vocabulary assessment	415	0.69	0.78	0.24	1.00
Name writing	415	0.45	0.60	0.37	1.00
Most-used words	415	0.01	0.00	0.07	1.00
Decodable words	415	0.00	0.00	0.03	0.60
Backward digit span	415	0.03	0.00	0.11	0.86
Forward digit span	415	0.81	1.00	0.26	1.00
HTKS	415	0.32	0.00	0.39	1.00

We explore whether assessment scores were statistically different by language spoken at home, Group 2 and Group 3 schools, rural versus urban districts, and gender. Even though we found that students whose home language is Lao scored higher than those who do not speak

Lao at home, average scores across all domains were still low among Lao-speaking children (executive function: 29%; math skills: 46%; literacy skills: 37%) (Exhibit 14). There are no statistical differences in average scores between children in Group 2 and Group 3 schools, between children in rural versus urban districts, or between girls and boys (see the exhibits in Appendix B).

Exhibit 14. MELQO scores by domain—Mean comparisons by Lao: Other home language

Scores	Other Home Language		Lao		Mean	SE
	Obs.	Mean	Obs.	Mean	Difference	MD
Executive Function	159	0.372	256	0.395	-0.023	0.017
Math Skills	159	0.360	256	0.510	-0.150***	0.019
Literacy Skills	159	0.233	256	0.368	-0.135***	0.013

Note. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$

Grade 1 and Grade 2

We assessed baseline literacy outcomes of children in Grades 1 and 2 through SC’s Literacy Boost (LB) tool, previously piloted in the Laotian context, combined with an oral language assessment. AIR complemented the LB assessment with the *oral language assessment of learners in Grade 1 and Grade 2*⁸ to understand the extent to which students can speak and understand the language in which they are being assessed through the LB tool. The tools have been designed to capture seven important constructs associated with key language and reading skills of early literacy development: expressive vocabulary, listening comprehension, story retelling, phonological awareness, letter (symbol) identification, decoding of most-used words, ability to identify sentences that makes most sense, oral passage reading, and reading comprehension.

We found dispersion of student scores across competencies (Exhibit 15). Although average scores are around 70% for expressive vocabulary, listening comprehension, and symbol identification, we also find low scores for the other sets of skills. Average scores for the rest of the competencies range between 34% regarding the ability to decode most-used words to 21% for reading comprehension. The reading comprehension task was particularly challenging for children: The maximum score was just 63%. This pattern of results looks qualitatively similar across the three provinces for which we have baseline data (see the exhibits in Appendix B), although this may change in the future because current sample sizes for Champasak and

⁸ Adapted from the USAID Oral Language Module and Room to Read’s Oral Language Assessment.

Vientiane are very small and may not be giving us a clear picture of the average scores in these provinces.⁹

Exhibit 15. Descriptive statistics—Language and reading assessment scores, all Provinces

Score	N	Mean	Median	SD	Max
Expressive Vocabulary	986	0.71	0.80	0.25	1.00
Listening Comprehension	986	0.72	0.80	0.27	1.00
Story Retelling	986	0.23	0.00	0.28	1.00
Phonological Awareness	986	0.28	0.18	0.25	1.00
Symbol Identification	986	0.68	0.80	0.32	1.00
Most-Used Words	986	0.34	0.00	0.40	1.00
Silly Sentences	986	0.28	0.25	0.24	1.00
Read Passage A	986	0.28	0.00	0.45	1.00
Reading Comprehension	986	0.21	0.00	0.25	0.63

As expected, Grade 2 students score significantly higher across all competencies (except attempt to read passage A) relative to Grade 1 learners. However, average scores for six out of the nine competencies remain below 50% (Exhibit 16). In addition, consistent with previous findings for pre-primary learners, we also see students whose home language is Lao tend to score higher across all competencies relative to those who speak a different language at home (most commonly, Hmong) (Exhibit 17). Similarly, students from relatively wealthier households score significantly higher across all competencies than their relatively poorer counterparts, a result that is expected and consistent with worldwide evidence (Exhibit 18).

⁹ 76% of the sample comes from Xiengkhouang, 14% from Vientiane, and 10% from Champasak.

Exhibit 16. Language and reading assessment scores—Mean comparisons by grade

Student Outcomes	Grade 1		Grade 2		Mean	SE
	Obs.	Mean	Obs.	Mean	Difference	MD
Expressive Vocab	489	0.682	497	0.746	-0.064***	0.016
Listening Comprehension	489	0.688	497	0.760	-0.072***	0.017
Story Retelling	489	0.191	497	0.262	-0.070***	0.018
Phonological Awareness	489	0.241	497	0.325	-0.085***	0.016
Symbol Identification	489	0.612	497	0.745	-0.133***	0.020
Most-Used Words	489	0.260	497	0.424	-0.164***	0.025
Silly Sentences	489	0.246	497	0.307	-0.061***	0.015
Read Passage A	489	0.252	497	0.318	-0.066	0.029
Reading Comprehension	489	0.162	497	0.265	-0.103***	0.016

Note. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$

Exhibit 17. Language and reading assessment scores—Mean Comparisons by Lao: Other home language

Student Outcomes	Other Home Language		Lao		Mean	SE
	Obs.	Mean	Obs.	Mean	Difference	MD
Expressive Vocab	313	0.529	630	0.809	-0.280***	0.017
Listening Comprehension	313	0.545	630	0.817	-0.272***	0.018
Story Retelling	313	0.097	630	0.296	-0.199***	0.016
Phonological Awareness	313	0.211	630	0.328	-0.118***	0.016
Symbol Identification	313	0.555	630	0.747	-0.192***	0.023
Most-Used Words	313	0.224	630	0.409	-0.185***	0.026
Silly Sentences	313	0.252	630	0.293	-0.041*	0.016
Read Passage A	313	0.246	630	0.300	-0.054	0.030
Reading Comprehension	313	0.140	630	0.256	-0.115***	0.016

Note. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$

Exhibit 18. Language and reading assessment scores—Mean comparisons by SES high–SES low

Student Outcomes	SES Low		SES High		Mean	SE
	Obs.	Mean	Obs.	Mean	Difference	MD
Expressive Vocab	537	0.675	449	0.761	-0.086***	0.016
Listening Comprehension	537	0.697	449	0.757	-0.060***	0.017
Story Retelling	537	0.193	449	0.267	-0.074***	0.018
Phonological Awareness	537	0.265	449	0.305	-0.040	0.016
Symbol Identification	537	0.650	449	0.714	-0.064**	0.020
Most-Used Words	537	0.312	449	0.379	-0.067*	0.026
Silly Sentences	537	0.262	449	0.295	-0.033	0.015
Read Passage A	537	0.250	449	0.327	-0.078*	0.029
Reading Comprehension	537	0.195	449	0.237	-0.042*	0.016

Note. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$

Importantly, our findings are mixed when comparing scores between single-grade and multigrade classrooms (Exhibit 19). Average scores for ability to read most-used words, ability to identify sentences that make the most sense from a group of sentences, attempt to read a passage, and reading comprehension were statistically higher among students in single-grade classrooms. However, learners in multigrade classrooms have listening comprehension skills that are, on average, better than those of their counterparts in single-grade classrooms.

Exhibit 19. Language and reading assessment scores—Mean comparisons by multigrade

Score	Single grade		Multigrade		Mean	SE
	Obs.	Mean	Obs.	Mean	Difference	MD
Expressive Vocabulary	658	0.707	328	0.729	-0.023	0.016
Listening Comprehension	658	0.705	328	0.764	-0.059***	0.017
Story Retelling	658	0.221	328	0.238	-0.017	0.019
Phonological Awareness	658	0.292	328	0.266	0.026	0.016
Symbol Identification	658	0.687	328	0.663	0.024	0.022
Most-Used Words	658	0.367	328	0.294	0.073*	0.027
Silly Sentences	658	0.291	328	0.248	0.044**	0.015
Read Passage A	658	0.324	328	0.207	0.116***	0.029
Reading Comprehension	658	0.229	328	0.184	0.045*	0.017

Note. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$

We also compare average scores between Group 2 and Group 3 schools, discriminating by grade. We found that Grade 1 students in Group 2 schools tend to perform significantly better in reading comprehension and ability to read most-used words than their counterparts in Group 3 schools (Exhibit 20). Nonetheless, findings for Grade 2 students are mixed (Exhibit 21). Even though Grade 2 students in Group 2 schools scored statistically higher in reading comprehension and most-used words than their counterparts in Group 3 schools, they also fared worse on listening comprehension and were less likely to attempt to read a passage.

Exhibit 20. Language and reading assessment scores (Grade 1)—Mean comparisons by Group 2/Group 3 schools

Score	Group 3		Group 2		Mean	SE
	Obs.	Mean	Obs.	Mean	Difference	MD
Expressive Vocabulary	207	0.712	282	0.659	0.053	0.024
Listening Comprehension	207	0.706	282	0.675	0.030	0.026
Story Retelling	207	0.182	282	0.198	-0.015	0.023
Phonological Awareness	207	0.235	282	0.245	-0.010	0.020
Symbol Identification	207	0.633	282	0.597	0.036	0.032
Most-Used Words	207	0.194	282	0.308	-0.114***	0.033
Silly Sentences	207	0.262	282	0.234	0.028	0.019
Read Passage A	207	0.295	282	0.220	0.075	0.040
Reading Comprehension	207	0.121	282	0.192	-0.071***	0.020

Note. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$

Exhibit 21. Language and reading assessment scores (Grade 2)—Mean comparisons by Group 2/Group 3 schools

Score	Group 3		Group 2		Mean	SE
	Obs.	Mean	Obs.	Mean	Difference	MD
Expressive Vocabulary	217	0.768	280	0.729	0.038	0.019
Listening Comprehension	217	0.794	280	0.734	0.061*	0.023
Story Retelling	217	0.259	280	0.263	-0.004	0.028
Phonological Awareness	217	0.297	280	0.347	-0.050	0.024
Symbol Identification	217	0.761	280	0.732	0.029	0.025
Most-Used Words	217	0.364	280	0.470	-0.106**	0.037
Silly Sentences	217	0.298	280	0.314	-0.016	0.023

Score	Group 3		Group 2		Mean	SE
	Obs.	Mean	Obs.	Mean	Difference	MD
Read Passage A	217	0.382	280	0.268	0.115*	0.042
Reading Comprehension	217	0.228	280	0.294	-0.066**	0.023

Note. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$

We also compare average scores between children with and without physical disabilities and find that while students with disabilities have lower average scores across all competencies, the difference is statistically significant only for silly sentences (see exhibits in Appendix B). Lastly, consistent with previous results for pre-primary learners, we do not find statistical differences in average scores by sex or between rural and urban areas (see exhibits in Appendix B).

Proxy Baseline

In this section, we present the results of the proxy baseline analysis exploiting data from other education- and literacy-focused programs operating in Lao PDR within the past five years. Specifically, we use data from Plan International's LEARN evaluation, UNICEF's most recent MICS, and the USDA-funded LEAPS II evaluation.¹⁰ The former two datasets focused on students in pre-primary while the LEAPS project focused on children in Grade 1. Accordingly, we present results for each grade level separately below.

Pre-primary. For pre-primary literacy outcomes, we leveraged data from the UNICEF 2019 MICS as well as the LEARN project implemented by Plan International and SC in Oudomxay and Luang Prabang Provinces. In both studies, pre-primary-aged students were assessed on their ability to identify letters and numbers. However, the majority of relevant outcomes (letter identification and number identification) were assessed in only one study or the other. Thus, we present results for the common outcomes separately from the dissimilar outcomes.

Overall, students performed poorly on basic letter and number identification tasks, with fewer than one third of students in both studies able to identify at least 10 letters or the first 10 numbers (Exhibit 22). In both instances, we further see that students were more likely to be able to identify numbers than letters, though the difference is relatively negligible within studies. Students in the LEARN program performed worse than those in the MICS program, though these results are not surprising given MICS is national and LEARN is localized.

¹⁰ AIR will update these results when we gain access to additional datasets from DFAT and MoES.

Exhibit 22. Proxy baseline common pre-primary outcomes

Outcomes	LEARN		UNICEF	
	Obs.	Mean	Obs.	Mean
Letter Identification (Identifies at least 10 letters)	940	0.05	4,727	0.24
Number Identification (Identifies at least first 10 numbers)	918	0.11	4,760	0.33

Outcomes from MICS are provided overall, as well as by region in Lao PDR (North, Central, and South). As seen in Exhibit 23, the North and Central regions consistently outperformed the South region, while there are few differences in performance between pre-primary students in the North and Central regions. These results suggest that students in LtR schools in Champasak and Attapeu Provinces likely underperformed their counterparts in Xiengkhuang and Vientiane Provinces.

Exhibit 23. Proxy baseline pre-primary outcomes—UNICEF MICS only

Outcomes	North Region		Central Region		South Region	
	Obs.	Mean	Obs.	Mean	Obs.	Mean
Identifies at least 10 letters	1,680	0.25	1,962	0.27	1,085	0.18
Reads at least 4 words	1,698	0.24	1,971	0.23	1,097	0.18
Identifies at least first 10 numbers	1,685	0.41	1,982	0.34	1,093	0.21
Picks up an object with 2 fingers	1,720	0.97	1,998	0.98	1,070	0.97

LEARN data include literacy and numeracy outcomes for pre-primary students in Oudomxay and Luang Prabang Provinces in the North region of the country. Overall, students performed relatively low on all tasks. Students from the LEARN evaluation scored highest on the counting tasks with 22% being able to count to eleven or higher.

Exhibit 24. Proxy baseline pre-primary outcomes—LEARN only

Outcomes	Obs.	Mean
Initial Sound Discrimination (at least 2 out of 3 correct)	922	0.01
Letter Identification (at least 10 correct)	940	0.05
Writing (at least some letters correct)	918	0.07
Counting (counts to 11 or higher)	958	0.22
Number Identification (at least 1–10 correct)	918	0.11

Grade 1 and Grade 2. For Grade 1 and Grade 2, we used data from the U.S. Department of Agriculture (USDA)-funded, CRS-implemented LEAPS II evaluation and the LEARN evaluation.

CRS implemented LEAPS II in Savannakhet Province in 2017–2022. The data include results from the LB assessment administered to students in Grade 1 in program and comparison schools as well as literacy assessments administered to Grade 1 students in the LEARN Grade 1 transition program in Oudomxay and Luang Prabang Provinces.

Exhibit 25. Proxy baseline Grade 1 outcomes—LEAPS II only

Outcomes	Obs.	Mean
Expressive Vocabulary (% correct out of 20)	2,184	0.46
Phonemic Awareness (% correct pairs out of 3)	2,184	0.20
Letter Knowledge (% correct out of 33)	2,184	0.18
Word Recognition (% correct out of 20)	2,184	0.01
Object-to-Picture Matching (% correct out of 9)	2,184	0.10
Reading Comprehension (% questions answered correctly)	2,184	0.26

Exhibit 26. Proxy baseline Grade 1 outcomes—LEARN only

Outcomes	Obs.	Mean
Initial Sound Discrimination (at least 2 out of 3 correct)	608	0.00
Letter Identification (at least 10 correct)	614	0.01
Writing (at least some letters correct)	608	0.02

Generally, we found that students in the North perform at lower levels than students in Central provinces based on the data from LEAPS II and LEARN baseline evaluation data. Students perform relatively equivalently on initial sound discrimination (i.e., phonemic awareness), as students in both studies are unable to correctly identify at least two out of three sound/letter pairs. Students from the LEAPS II sample are, on average, able to identify only six letters, while only one percent of students in the LEARN sample are able to identify four to 10 letters correctly.

LtR Classroom Characteristics

Next, we present results from the classroom assessments for both pre-primary and Grade 1 and 2 classrooms. We separate results into findings on infrastructure, classroom management and inclusion, teaching methods, and the availability and use of teaching materials.

School and Classroom Infrastructure

Findings from pre-primary classroom observation indicate that while most schools are deemed safe, and over 90% of classrooms are protected from the elements and in good condition, there is room for improvement regarding sanitary conditions. Even though nearly 70% of schools

have clean water for hand washing near latrines, only 30% also offer soap. Lack of clean drinking water on school grounds affects over 70% of institutions. We do not find differences in infrastructure characteristics across Group 2 and Group 3 schools, which is expected since the LtR program does not directly target physical infrastructure outcomes.

Exhibit 27. Descriptive statistics—Pre-primary classroom assessment (school/classroom characteristics)

Indicator	N	Mean	Median	SD
School grounds are safe (mostly/very true)	44	0.82	1.00	0.39
Clean drinking water (mostly/very true)	44	0.27	0.00	0.45
Clean water for hand washing near latrines (mostly/very true)	44	0.68	1.00	0.47
Soap for hand washing near latrines (mostly/very true)	44	0.30	0.00	0.46
Latrines are child friendly	44	0.80	1.00	0.41
Classrooms are in good condition (mostly/very true)	44	0.93	1.00	0.25
Classrooms are protected from the elements (mostly/very true)	44	0.95	1.00	0.21

Classroom Management and Inclusion

Findings from classroom observation data from both pre-primary and Grades 1 and 2 indicate that education is highly inclusive in our sample (Exhibits 28 and 29). Enrollment and attendance of girls is comparable to that of boys and represents about half of both attendance and enrollment. Girls sit next to boys in most classrooms, the proportions of girls and boys in the front two rows tend to be similar, and children of either sex are equally likely to have a notebook or slate during class time. Moreover, teachers seem to promote inclusiveness within the classroom by walking through it during lecture time.

Exhibit 28. Descriptive statistics—Pre-primary classroom assessment (inclusion)

Indicator	N	Mean	Median	SD	Max
Proportion of girls enrolled	44	0.49	0.49	0.16	1.00
Proportion of girls present	43	0.48	0.50	0.16	0.83
Boys and girls sit next to each other	44	0.66	1.00	0.48	1.00
Proportion of girls in front 2 rows	43	0.50	0.50	0.22	1.00
Proportion of girls in back 2 rows	44	0.49	0.45	0.35	1.00
Proportion of girls with notebook/slate	42	0.49	0.50	0.16	0.83
Teacher walks throughout classroom	44	0.75	1.00	0.44	1.00

Exhibit 29. Descriptive statistics—Grades 1 and 2 classroom assessment (inclusion)

Indicator	N	Mean	Median	SD	Max
Proportion of girls enrolled	106	0.50	0.50	0.13	0.80
Proportion of girls present	106	0.49	0.50	0.14	0.78
Boys and girls sit next to each other	106	0.72	1.00	0.45	1.00
Proportion of girls in front 2 rows	106	0.45	0.50	0.22	1.00
Proportion of girls in back 2 rows	106	0.36	0.33	0.33	1.00
Proportion of girls with notebook/slate	103	0.49	0.50	0.14	0.75
Teacher walks throughout classroom	106	0.92	1.00	0.28	1.00

Within the classroom, the vast majority of teachers across all education levels provide feedback in a positive way to both boys and girls. Teachers also ensure that students of both sexes participate in class in the majority of classrooms. Nonetheless, observation data suggest that educators across all grades could do a better job of redirecting students' attention when they become distracted, and of ensuring that all students are prepared before transitioning lesson topics. These findings are statistically equal across Group 2 and Group 3 schools, and between single- and multigrade classrooms.

Exhibit 30. Descriptive statistics—Pre-primary classroom assessment (classroom management)

Indicator	N	Mean	Median	SD
The teacher:				
Gives positive feedback to girls (mostly/very true)	44	0.80	1.00	0.41
Gives positive feedback to boys (mostly/very true)	44	0.77	1.00	0.42
Redirects girls' attention (mostly/very true)	44	0.41	0.00	0.50
Redirects boys' attention (mostly/very true)	44	0.41	0.00	0.50
Ensures students are prepared (mostly/very true)	44	0.61	1.00	0.49
Girls participate in class (mostly/very true)	44	0.93	1.00	0.25
Boys participate in class (mostly/very true)	44	0.82	1.00	0.39

Exhibit 31. Descriptive statistics—Grades 1 and 2 classroom assessment (classroom management)

Indicator	N	Mean	Median	SD
The teacher:				
Gives positive feedback to girls (mostly/very true)	106	0.86	1.00	0.35
Gives positive feedback to boys (mostly/very true)	106	0.86	1.00	0.35
Redirects girls' attention (mostly/very true)	106	0.41	0.00	0.49
Redirects boys' attention (mostly/very true)	106	0.39	0.00	0.49
Ensures students are prepared (mostly/very true)	106	0.61	1.00	0.49
Girls participate in class (mostly/very true)	106	0.92	1.00	0.28
Boys participate in class (mostly/very true)	106	0.90	1.00	0.31

During qualitative interviews, we found that even though respondents across Group 2 and Group 3 schools were not familiar with the concept of inclusive education, most described using methods to deliver inclusive teaching techniques. Many interviewees across Group 2 and Group 3 schools thought that inclusive education meant peer learning or involving parents in their child's education. However, both the principal and teacher sampled from an inclusive education pilot school understood the concept of inclusive education, mentioning that it focuses on involving children with disabilities and equally engaging students regardless of sex, ethnicity, or SES.

Successes. According to respondents, teachers took steps to ensure that minority students were not overlooked, whether due to sex, language, or pre-primary school background. To encourage both boys and girls to participate, teachers reported mixing students by sex. To overcome linguistic barriers, teachers translated lessons into students' mother tongue, used pictures, and learned students' mother tongue when it differed from their own. For students who had not attended pre-primary school, teachers used peer-learning techniques. We provide more details on each inclusive approach below.

Sex. Respondents across Group 2 and Group 3 schools agreed that teachers equally engaged boys and girls by mixing students by sex. A principal stated that there was no discrimination by sex:

"Teachers equally engage boys and girls in the classroom. All children can participate in all activities such as answer questions, play games, [and] group reading without separating [by] their tribe or [sex]."

To engage both boys and girls, teachers reported calling on any student who was not participating and using group work that included a mix of both sexes. A principal further

explained gender-sensitive approaches that teachers implemented: “When arranging a small group, the teacher will mix girls and boys in the same group and teachers also assign both boys and girls to be the classroom heads.” Other interviewees added that mixing boys and girls in terms of seating arrangements and group work encouraged children of both sexes to read in the classroom.

Teaching Methods

Classroom observation data reveal that educators use a variety of ways of teaching in slightly more than 40% of pre-primary classrooms and in about 30% of Grade 1 and Grade 2 classrooms. Conversely, lessons in most classrooms take place primarily through rote learning and less often through more interactive activities such as a song, game, story, etc. In addition, in about 40% of classrooms, educators ask questions that require reasoning, applying previous knowledge, and explaining connections between different ideas or concepts. In the remaining majority of classrooms, teachers tend to primarily ask questions that involve rote responses. We tested whether teaching methods differed between Group 2 and Group 3 schools, and between single- and multigrade classrooms, but did not find any systematic differences. However, sample sizes are small; therefore, we may not have enough statistical power to detect any underlying heterogeneity.

Exhibit 32. Descriptive statistics—Pre-primary classroom assessment (teaching methods)

Indicator	N	Mean	Median	SD	Max
Uses variety of ways of teaching	44	0.43	0.00	0.50	1.00
Asks open questions to students	44	0.43	0.00	0.50	1.00

Exhibit 33. Descriptive statistics—Grades 1 and 2 classroom assessment (teaching methods)

Indicator	N	Mean	Median	SD	Max
Teacher uses a variety of ways of teaching	106	0.28	0.00	0.45	1.00
Teacher asks open questions to students	106	0.43	0.00	0.50	1.00

Availability and Use of Teaching Materials

Pre-primary classrooms are under-resourced. On average, pre-primary classrooms have 3 of the 10 teaching materials considered in the questionnaire. Between one third and one fourth of classrooms have any of the following materials: textbooks, pens/pencils, paper, stories/books, teacher guide, chalkboard, and big storybooks. Availability of manipulatives such as letter forms, cubes, and cards tend to be more common (50%), as well as the possession of dictionaries (57%). Lastly, we did not find statistical differences in these percentages between Group 2 and Group 3 schools, although this is likely due to the small sample size.

Exhibit 34. Descriptive statistics—Pre-primary classroom assessment (availability and use of resources)

Indicator	N	Mean	Median	SD
Prescribed textbooks	44	0.34	0.00	0.48
Pens, pencils	44	0.25	0.00	0.44
Visual aids (pictures, etc.)	44	0.27	0.00	0.45
Exercise books or paper	44	0.25	0.00	0.44
Stories and books	44	0.34	0.00	0.48
Teacher guide	44	0.34	0.00	0.48
Chalkboard, duster, and chalk	44	0.30	0.00	0.46
Big storybooks	44	0.32	0.00	0.47
Manipulatives (letter forms, cubes, cards, etc.)	44	0.50	1.00	0.51
Dictionaries	44	0.57	1.00	0.50

Grade 1 and Grade 2 classrooms have, on average, four of the 10 teaching materials listed in Exhibit 34. More than 90% of classrooms have prescribed textbooks and a chalkboard, duster, and chalk. Between 60% and 70% of classrooms have pens/pencils and teacher guides. Availability of other teaching materials is low: dictionaries (0%), manipulatives (19%), big storybooks (15%), stories and books (16%), visual aids (20%), and paper (38%). We found no differences between Group 2 and Group 3 schools and between multigrade and single-grade classrooms across all classroom assessment measures, although we acknowledge that the small size of the sample may have prevented us from detecting any differences.

Exhibit 35. Descriptive statistics—Grades 1 and 2 classroom assessment (availability and use of resources)

Indicator	N	Mean	Median	SD	Max
Prescribed textbooks	106	0.93	1.00	0.25	1.00
Pens, pencils	106	0.68	1.00	0.47	1.00
Visual aids (pictures, etc.)	106	0.20	0.00	0.40	1.00
Exercise books or paper	106	0.38	0.00	0.49	1.00
Stories and books	106	0.16	0.00	0.37	1.00
Teacher guide	106	0.63	1.00	0.48	1.00
Chalkboard, duster, and chalk	106	0.92	1.00	0.27	1.00
Big storybooks	106	0.15	0.00	0.36	1.00

Manipulatives (letter forms, cubes, cards, etc.)	106	0.19	0.00	0.39	1.00
Dictionaries	106	0.00	0.00	0.00	0.00

Reading

During qualitative interviews, respondents reported using several main activities to teach reading skills, including encouraging students to read aloud, reading stories to students, using alphabet cards, and playing interactive games. Interviewees across Group 2 and Group 3 schools explained that the materials used to teach reading included the Lao textbook, storybooks, and alphabet cards. The most commonly cited activity was reading aloud. Students, parents, teachers, and principals across both Group 2 and Group 3 schools mentioned that teachers typically asked students to read what was written on the blackboard to practice reading. Teachers, students, principals, and parents also explained that teachers read storybooks to children to build reading skills.

While respondents from both Group 2 and Group 3 mentioned reading storybooks to students, it was much more common among Group 2 schools, with several interviewees stating that there were many storybooks available in the classroom. In addition, a principal from a Group 2 school described teachers using storybooks to engage children in the learning process: *“The teachers read the storybook for students and asked students for their understanding, and then the teachers explain the meaning of the storybook to the students.”* Teachers also noted using different techniques to make stories more interesting for students, with one pre-primary teacher from a Group 2 school explaining, *“In order to motivate students, [I] will be making some exciting sounds and acting at the same time—that is preferable for children.”* When discussing reading stories to students, interviewees from Group 2 schools referred to using storybooks while respondents from Group 3 schools meant reading stories from the Lao textbook. Students, parents, principals, and teachers also mentioned using alphabet cards to review the letters. Finally, teachers, parents, and students described some interactive activities to improve reading skills, with a parent of a Grade 1 student from a Group 2 school summarizing, *“Students compete to select word cards to fill in the blanks of incomplete sentences.”* This activity is part of the Grade 1 curriculum, which was reinforced through LtR trainings.

Successes. Respondents from Group 2 schools felt that the LtR learning materials encouraged student engagement to improve reading skills. Teachers reported implementing the LtR reading corner programming through reading storybooks to students. Interviewees explained that students were interested in reading storybooks and the pictures were easy for children to understand. For example, a principal from a Group 2 school mentioned, *“Storybooks stimulate children’s interest in reading with fun stories and exciting illustrations.”* A Grade 1 teacher added, *“These materials are really helpful for teaching because they encourage and motivate*

students to attend and be more active in the classroom. Students are more interested in reading storybooks and some students also borrow storybooks to read at home.” Overall, respondents felt that the Ltr materials helped develop student’s reading abilities.

Some respondents across Group 2 and Group 3 schools noted that they were pleased with the quality of education in general, with parents mentioning that they were happy their children could read and write, while other respondents across both groups expressed dissatisfaction with the quality of education. Parents often related their satisfaction to the fact that their children demonstrated improvements and often received high scores on reading exams. A parent of a Grade 1 student in a Group 2 school explained, *“I am satisfied because my child can start reading and counting. It is good progress.”* Parents from a Group 3 school added, *“We are satisfied with the quality of education in this school because our children have good scores every month.”*

Challenges. Teachers, principals, parents, VEDC members, and PAs across Group 2 and Group 3 schools reported that the main challenges with teaching reading were related to (a) instructing students from varying linguistic backgrounds, (b) managing multigrade classes, (c) engaging students who did not attend pre-primary school, (d) having limited learning materials, and (e) misunderstanding certain grammatical concepts. Some parents were dissatisfied with the quality of education, most often relating this to the abovementioned issues, such as multigrade teaching and linguistic challenges.

Teachers, parents, PAs, and VEDC members across all sampled provinces with non-Lao speaking minorities present¹¹ explained that students struggled with reading when Lao was not their mother tongue, and some teachers who were not native Lao speakers faced challenges teaching Lao. Interviewees often noted that students struggled to understand the teacher and the lesson when they did not speak Lao. This was especially a problem when the teacher did not speak the same language as the students in more linguistically diverse communities. For example, a VEDC member from Xiengkhuang province noted, *“If any class has a Khmu teacher, he/she can communicate with Khmu children and teach them to speak Lao, but not with Hmong children in the same class.”* Our sample covered two schools in which more than one non-Lao language was spoken. In addition, respondents across both groups explained that it was difficult for non-Lao-speaking students to learn the correct pronunciations of words, with several teachers noting that it took longer to teach these students.

Several interviewees noted that teachers also incorrectly pronounced certain letters when Lao was not their mother tongue, causing students to learn the wrong pronunciation. For example, a PA from Xanxay District explained, *“A challenge that teachers commonly face when teaching*

¹¹ Includes Xiengkhuang, Attapeu, and Champasak.

reading is pronunciation such as ພ (Por), ພ(Pore), ພ (for), ພ (fore) because most teachers are ethnic teachers and they have difficulty pronouncing some words.” A principal elaborated on the implications for students:

“A challenge teachers face when teaching reading is vowel sound[s] because some lessons, a teacher cannot teach the student to pronounce, and students just follow and repeat reading what a teacher read without understanding, and (...) students cannot read Lao language clearly.”

Teachers, principals, parents, and government staff across Group 2 and Group 3 schools explained that teachers often had to instruct multigrade classrooms, which made it difficult to provide adequate attention to each student and manage classrooms. In five of the eight schools sampled, a teacher mentioned that they were teaching a multigrade classroom. A respondent from MoES noted that teachers were deployed to schools based on the student-to-teacher ratio of 33:1: *“Some villages have students per grade less than the MoES’s pupils–teacher ratio of a primary school class.... Teachers have to teach multigrade—that affects the effectiveness of teaching.”*

Parents, principals, and PAs frequently mentioned that teachers could not focus on each student during class, and parents were often dissatisfied with the quality of education their child received in multigrade classes. A multigrade teacher mentioned the difficulties she experienced while teaching two grades simultaneously: *“Sometimes [it] is confusing, especially when students in both classes ask questions at the same time.”* Another multigrade teacher explained that it was difficult to control the classroom: *“When [I] start teaching students in Grade 2, students in Grade 3 will make noise, and [when I] give an exercise to Grade 3 students, Grade 2 students will make noise.”* As we discuss in the Teacher Training section later in this report, several teachers expressed interest in receiving training opportunities to learn classroom management strategies and improve their teaching capabilities in multigrade classrooms.

Teachers and principals mentioned that it took more time to teach students who did not attend pre-primary school, which slowed down the rest of the class. For example, a principal explained, *“The children that didn’t attend pre-primary school are slow learners. The challenge is teachers need to pay special attention to them in starting teaching, writing, and teaching to read until they can do it on their own.”* A Grade 1 teacher from Vientiane Province added that teachers need to be patient with these students as they get more comfortable reading and writing.

Some interviewees felt that limited learning materials made it difficult to teach reading. Interestingly, this challenge was almost exclusively stated by respondents from Group 3 schools. Teaching materials were also a concern for pre-primary teachers, who explained that they did not have materials specifically for teaching reading readiness at the pre-primary level.

One pre-primary teacher described using the Grade 1 Lao language subject textbook to teach reading in her class. Pre-primary teachers mentioned using storybooks in the classroom but did not reference the LtR Reading Readiness program. A few respondents from Group 2 schools requested additional and new storybooks, with one Grade 2 teacher stating that students could then borrow books more often.

A few respondents noted challenges related to Lao grammar. For example, a principal from a Group 2 school explained that the revised version of the Lao language textbook changed the principal of compound consonants and felt that *“[t]eachers haven’t [gotten] familiar with teaching this principle and can’t explain it well to children.”* A Grade 1 teacher admitted that she did not fully understand certain grammatical concepts and could not teach them well to students.

Language

Teachers across Group 2 and Group 3 schools detailed several strategies to teach reading to students from diverse linguistic backgrounds, such as translating into students’ mother tongue, using pictures to engage students, or trying to learn students’ mother tongue. When teachers spoke the same mother tongue as students, they reported often translating throughout the lesson to increase understanding. A Grade 1 teacher explained, *“For the students who could not understand the Lao language clearly, the teacher will translate and explain in the local language for them.”* However, the language barrier often became more difficult to overcome in diverse settings where teachers did not speak students’ mother tongues. A few respondents across Group 2 and Group 3 schools mentioned that in this instance, teachers rely on pictures to communicate or learn the children’s language as much as possible to increase understanding.

For example, a principal explained, *“A teacher was using pictures or alphabets, pointing out for the student to read the Lao language and then asked students how to say it in their local language. By doing so, students are actively participating in the class.”* Another principal added, *“Pictures are a universal language that do not need to be translated. [They] help teachers to communicate with Hmong children.”* PAs in particular noted that teachers had to learn the language spoken by their students, though this is more difficult in places where there are more than two different ethnic groups present in the classroom.

Pre-primary Background

For children who had not attended pre-primary school, teachers mentioned encouraging peer learning and helping students learn how to write by holding their hand over the pencil. A Grade 1 teacher from a Group 2 school explained, *“The teacher will practice [with] students one by one on reading, [and will divide] students into a small group with a mix of students who could read and could not read in the same group. So, the students in the group could share and help*

each other.” Principals and PAs also noted that teachers used this approach to encourage students who were learning to read and write for the first time.

Challenges. Respondents mentioned that teachers lacked knowledge on how to teach students with difficulties learning. PAs across provinces agreed that teachers did not know how to support students who had difficulties learning and mentioned that even they could benefit from training opportunities to then be better placed to advise teachers on this topic. While few teachers reported having students with difficulties learning in their class, those who did across Group 2 and Group 3 schools described simple inclusion strategies to support these students. For example, teachers mentioned speaking loudly for students who were hard of hearing and putting students who had difficulty seeing at the front of the classroom.

Classroom Observations

Most schools reported carrying out internal classroom observations in which principals or other teachers provided feedback to one another. Several respondents across Group 2 and Group 3 schools also noted receiving visits from DESB and LtR PAs. Internal classroom observations appear to take place more frequently than assessments done by DESB or LtR staff. Respondents explained that the most common recommendations were to encourage greater student engagement, teach correct Lao pronunciation, and improve classroom management. Principals and PAs recommended that students should be engaged in learning through using more visuals during teaching, improving storytelling techniques, and utilizing peer learning.

For example, a PA from Banchiangchaleunsook District described often advising teachers to *“[p]roduce teaching materials, produce information, education, and communication [IEC] materials, [and use] activities and pictures to assist children to understand easily.”* A multigrade teacher from a Group 3 school recounted advice she found beneficial: *“I received feedback about how to teach Lao pronunciations, and how to manage the classroom and students during teaching. All feedbacks are helpful to resolve my teaching problems.”* A few respondents also discussed providing feedback related to teaching new grammatical concepts from the revised Lao language textbook.

Successes. Teachers across Group 2 and Group 3 schools agreed that receiving regular feedback was helpful to improve how they teach reading in the classroom. A Grade 1 teacher from a Group 2 school mentioned that receiving feedback from the LtR PA helped him improve his teaching skills: *“I received feedback about how to teach reading and pronunciation. It was helpful for me to apply in practice and get better results (children remember better).”* Other teachers stated that feedback increased their confidence, with one teacher noting that they felt more capable of teaching Lao grammar after receiving support from the PA.

Challenges. A few teachers in Group 3 schools explained that they had not participated in classroom observations or received any feedback on their teaching. For example, one principal noted that teachers at his school did not receive routine feedback. In addition, a teacher from a different Group 3 school stated that she had not received individualized feedback, demonstrating a missed opportunity to improve teaching skills.

Teacher Training

Academic Background. The vast majority of teachers whom we interviewed reported having graduated from teacher training colleges. This was corroborated by reports from key informants, such as principals and PAs, who noted that this was part of the MoES rules. Some informants also noted that teachers needed to have an official letter from MoES to be eligible for teaching jobs. However, a couple of pre-primary teachers noted that they had no specific pre-primary training. For example, a pre-primary teacher from Feuang District noted that they were assigned to teach pre-primary without any specific technical training on teaching pre-primary.

On-the-Job/In-Service Training. Teachers and principals had mixed responses about whether they had access to on-the-job or in-service training. Many stated that there was no on-the-job training in their schools, while a slightly smaller number noted that they had received supervision and/or periodic in-service training from MoES district education officials.¹² For instance, a Grade 2 teacher from a Group 3 school in Feuang District noted that they received in-service training from district education staff twice a year on how to monitor students' learning and how to prepare lessons and teaching plans. In addition, a pre-primary and Grade 1 teacher from a Group 3 school in Bachiangchaleunsook District described receiving training from a PESS PA on lesson planning for pre-primary and the new Grade 1 curriculum. However, availability of on-the-job or in-service training did not seem to vary according to group.

Only one teacher from a Group 2 school in Sanxay District mentioned receiving regular coaching/feedback on teaching from the LtR program and DESB. This teacher described receiving feedback from DESB on how to encourage parents to support children in pre-primary school, adding that this was useful to support school attendance.

Successes. Those who had received in-service training generally thought the trainings were useful and contributed to the improvement of teaching at their school. For instance, a Grade 1/Grade 2 teacher from a Group 2 school in Bachiangchaleunsook District who received yearly training from DESB noted that teachers learned new teaching techniques and shared them with other teachers.

¹² Grade 1 and Grade 2 teachers received training by MoES and BEQUAL (not supported by LtR) on the new national curriculum in July–August 2019 and July–August 2020, respectively.

Challenges. Nonetheless, the vast majority of those who reported receiving trainings thought the training sessions were too short, with a couple adding that the frequency of training should increase. For instance, a Grade 2 teacher from a Group 3 school in Bachiangchaleunsook District described the experience of MoES in-service training:

“The training was conducted in four days, which was shorter than planned (for seven days). The training time is not enough time for a teacher to understand all topics. [Attending] the training was also a challenge... due to the road conditions not [being] good.”

The DESB official from Bachiangchaleunsook District voiced a similar opinion, stating that the frequency of in-service training should increase to maximize the understanding of teachers.

Literacy Training. Only informants from Group 2 schools reported receiving literacy training. Although participants stated that the techniques and materials presented in the training were useful to teach reading in the classroom, most thought that the length of the training was not adequate. Teachers from Group 2 schools (including Kengkia, Naang, Thandtho, and Mainakok) reported receiving literacy training by LtR and DESB officials. The training involved reading, storytelling practice, Lao language teaching, setting up reading corners, and encouraging parent participation. Respondents who participated in the training also reported receiving storybooks, posters, and word cards, including the alphabet, consonants, and vowels. Notably, some pre-primary and Grade 2 teachers from these schools did not receive the training, with some adding that only Grade 1 teachers were trained.¹³ This is consistent with the planned rollout of the LtR literacy trainings to Grade 2 teachers in July/August of 2021, after baseline data collection was concluded.

Successes. Teachers who participated in the literacy training generally thought the training and materials were useful and helped them teach reading better. For example, a teacher from a Group 2 school in Sanxay District stated that the training worked well on reading skills and pronunciation. Further, a teacher from a Group 2 school in Kham District stated that the storytelling activity worked well because it was fun and interesting, and a teacher from a Group 2 school in Feuang District mentioned that the “incomplete sentences” activity was particularly useful.

Respondents also noted that materials such as storybooks and word cards were useful for teaching reading. For example, the principal from Sanxay district noted, “*The storybooks, pictures, alphabets... are very beneficial materials for teaching children.*” A teacher from Feuang District voiced a similar view, noting that word cards were particularly effective in capturing the

¹³ Pre-primary teachers received LtR training in August 2020, Grade 1 teachers in October 2020, and Grade 2 teachers in July/August 2021 (after baseline data collection occurred).

attention of students: *“Colourful letters and picture cards are the learning materials that benefit teachers the most, because they are easy to remember for students, more than writing on the blackboard.”* Another teacher from Feuang District added, *“Consonant cards are the most beneficial materials to teach reading because [they] can be used with many games and activities,”* suggesting that consonant cards were particularly versatile for use in the classroom.

Challenges. Training participants consistently noted that the training was too short, and suggested the length may have limited teachers’ ability to understand the training material and implement some activities. For instance, the teacher from a Group 2 school in Sanxay District noted that the length of the training was not enough for teachers to understand the material:

“The training topic is focused on reading technique, and the training is pretty short because the teacher did not get a [good] understanding about the lesson from [the] training course. The training should take more days; maybe it should take around two weeks.”

The length of the training may have limited teachers’ opportunity to practice activities, as suggested by another teacher from Sanxay District who mentioned that participants did not get enough time to practice storytelling.

Teachers noted additional challenges to implementing some training activities, such as a lack of appropriate materials and language barriers in relation to Lao. A teacher from a Group 2 school in Feuang District noted,

“There are some activities that the teacher hasn’t understood yet and can’t conduct after [s/he] has done the training, such as “Follow the teacher,” [which] suggests some extra materials used for teaching that aren’t available around the school (some kind of shoes, toothbrush). Therefore, it’s hard to make children understand this activity.”

In addition, a teacher from a Group 2 school in Kham District described challenges in teaching reading skills because of a lack of knowledge about Lao grammar: *“I don’t understand some [Lao] grammar rules, so I can’t teach students to understand.”* This suggests that teachers’ language background can be a challenge to implementing some of the literacy training activities.

Across Group 2 and Group 3 schools, respondents noted that they would like to have additional training on literacy. Respondents who received LtR/DESB literacy training stated that they would like to have additional training on topics such as Lao language and grammar, pronunciation, reading techniques, pre-primary teaching, teaching children with special needs, and how to use educational materials—particularly word cards, textbooks, and storybooks. For instance, a teacher from a Group 2 school in Feuang District wanted additional training on how

to teach the Lao language and use the LtR reading materials, noting that they were not confident while teaching Lao language through activities in the new textbook.

Respondents who had not participated in LtR/DESB literacy training also expressed a strong need for literacy training, as well as training on lesson planning and teaching in multigrade classrooms. Some teachers from Group 3 schools described the need for training on teaching more than one grade in the same classroom.¹⁴ For instance, a teacher from a Group 3 school in Kham stated,

“I would like to be trained in the topics of how to teach reading and how to prepare lessons for teaching two classes at the same time. Because in teaching two classes at the same time, the teacher has to switch lessons between Grade 1 and Grade 2, making it difficult for children to pay attention.”

In addition, respondents from schools in both groups expressed a desire for more training on writing, with a teacher from a Group 3 school in Bachiangchaleunsook District noting, *“I would like to train on teaching reading and writing because some of the students can read but cannot write.”* This suggests that writing may be a particular challenge for some students.

Descriptive Regression Analysis

Finally, we present results from descriptive regression analyses examining the relationship between student-, household-, and classroom-level characteristics and students’ assessment scores. We first present results for pre-primary students, then we show results for Grade 1 and Grade 2 students. Overall, we find that speaking a language other than Lao at home, having a lower socio-economic status, living in a rural area, having a disability, and being in a multigrade classroom predicted lower performance on literacy subtests. However, multigrade classrooms were only associated with lower scores for the higher-level literacy skills. Again, these analyses are run only for students in Xiengkhuang Province for which we have complete data.

Exhibit 36 shows the regression output for the analysis focused on pre-primary students. Some clear trends emerge from this data. Specifically, students that speak Lao at home outperform non-Lao speaking students on all skills tested. Children who receive stimulation at home are more likely to score higher on early math and early literacy skills. Similarly, students in classrooms with more availability of learning materials outperform students in classrooms with

¹⁴ LtR delivered a 1-day training on multigrade teaching to Group 2 schools in January 2020. Although Group 2 teachers interviewed for this study did not mention this training, the teachers who expressed a desire for training on multigrade teaching were from Group 3, suggesting that training on multigrade teaching may not be as much of a gap in Group 2 schools.

less. Students in classrooms with teachers who ask open ended questions rather than just yes/no questions perform better than those in classrooms with teachers who do not ask similarly questions. However, if a students' teacher uses different teaching methods in the classroom, they are likely to score lower across all skills than those in classrooms where the teacher uses one consistent method.

Exhibit 36. Pre-Primary: Relationships between Assessment Scores and Student-, Household-, and Classroom-Level Variables

	Executive Function	Early Math Skills	Early Literacy Skills	Average Score
Female	-0.025 (0.017)	-0.024 (0.019)	0.015 (0.013)	-0.011 (0.013)
Lao-speaking home	0.054 (0.020)***	0.125 (0.022)***	0.136 (0.014)***	0.105 (0.015)***
Physical or learning disability	-0.096 (0.045)**	-0.030 (0.046)	-0.039 (0.030)	-0.055 (0.032)*
Learning disability ¹⁵	-0.032 (0.100)	0.107 (0.157)	-0.057 (0.064)	0.006 (0.090)
Rural district	-0.017 (0.023)	-0.042 (0.023)*	-0.015 (0.017)	-0.024 (0.017)
HH wealth index	-0.002 (0.008)	-0.001 (0.008)	-0.005 (0.006)	-0.003 (0.006)
Child stimulation index	0.002 (0.008)	0.022 (0.009)**	0.012 (0.006)*	0.012 (0.006)*
School infrastructure index	0.004 (0.007)	0.010 (0.008)	0.010 (0.005)**	0.008 (0.006)
Group-2 school	-0.009 (0.021)	-0.014 (0.023)	-0.015 (0.016)	-0.013 (0.017)
Number of students present	0.004 (0.001)***	-0.002 (0.001)	-0.001 (0.001)	0.000 (0.001)
Classroom materials index	0.002 (0.004)	0.010 (0.005)**	0.010 (0.003)***	0.007 (0.003)**
Teacher uses variety of teaching methods	-0.038 (0.020)*	-0.076 (0.021)***	-0.066 (0.015)***	-0.060 (0.015)***
Teacher asks open questions	0.042 (0.019)**	0.077 (0.022)***	0.028 (0.015)*	0.049 (0.016)***
Outcome (Score) Mean	0.39	0.45	0.32	0.38
N	400	400	400	400
R ²	0.071	0.225	0.300	0.216

OLS regressions with marginal effects. Province Fixed Effects. Robust standard errors in parentheses. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$

¹⁵ Disability status was measured using the Washington Group Short Set questionnaire which asks about difficulty seeing, hearing, and walking/climbing (means are presented in Exhibit 7). "Any disability" refers to a student having any difficulty with any of these tasks (i.e., seeing, hearing, walking/climbing).

The relationship between student outcomes and various student-, household-, and classroom-level characteristics follows similar trends for Grade 1 and Grade 2 students (Exhibit 37 and 38). Lao speaking students, students from higher socioeconomic backgrounds, and those who have a household member help with their homework are all likely to score better across literacy subskills. Students in classrooms where teachers ask open-ended questions and use a variety of teaching methods outperform their counterparts in other classrooms.

Further we find that students from rural areas perform worse than their counterparts in more urban areas, students with a self-reported disability perform worse than those without a disability, and students in classes with more students perform worse than students in classrooms with fewer students. As expected, students in Grade 1 perform worse than students in Grade 2 and students in Group 2 schools (where some classes already began receiving the Ltr intervention) perform better than students in Group 3 schools (where implementation had not begun) except for the highest-level literacy skills in which they perform worse. However, it is likely more Group 2 school students advance to the highest-level subtasks whereby there is more variation in scores for these more advanced skills.

While no clear trend emerges for students in multigrade classrooms, it appears that students in such classrooms perform worse than students in single grade classrooms on the higher order skills such as the reading and reading comprehension tasks.

Exhibit 37 Grades 1 and 2: Relationships between Assessment Scores and Student-, Household-, and Classroom-Level Variables, Part I

	Expressive Vocabulary	Listening Comp.	Story Retell	Phono. Awareness	Letter Identification
Female	-0.027 (0.013)**	-0.018 (0.015)	-0.002 (0.018)	-0.011 (0.016)	-0.019 (0.020)
Lao-speaking home	0.218 (0.018)***	0.221 (0.020)***	0.165 (0.019)***	0.090 (0.017)***	0.169 (0.025)***
Physical disability	0.014 (0.016)	-0.012 (0.018)	-0.005 (0.023)	0.000 (0.020)	0.017 (0.025)
Rural district	-0.026 (0.018)	-0.083 (0.020)***	-0.031 (0.022)	-0.047 (0.019)**	-0.016 (0.025)
HH asset index	0.020 (0.005)***	0.013 (0.005)**	0.016 (0.005)***	0.011 (0.005)**	0.013 (0.007)**
Reading materials at home index	-0.012 (0.005)**	-0.016 (0.006)***	0.005 (0.006)	-0.008 (0.005)	-0.009 (0.008)
HH member helped w/ homework	0.066 (0.025)***	0.035 (0.028)	0.053 (0.027)*	0.044 (0.025)*	0.077 (0.037)**
	0.021	0.000	0.006	-0.029	0.004

HH member read to child	(0.021)	(0.023)	(0.026)	(0.024)	(0.030)
Grade 1	-0.071 (0.013)***	-0.084 (0.015)***	-0.087 (0.018)***	-0.091 (0.016)***	-0.128 (0.020)***
Group-2 school	-0.026 (0.014)*	-0.014 (0.017)	0.033 (0.019)*	0.035 (0.017)**	-0.025 (0.023)
Multigrade classroom	-0.000 (0.015)	0.040 (0.016)**	0.008 (0.020)	-0.024 (0.017)	-0.051 (0.023)**
Number of students present	-0.006 (0.001)***	-0.006 (0.001)***	-0.004 (0.001)***	-0.002 (0.001)	-0.002 (0.002)
Classroom materials index	0.002 (0.004)	-0.000 (0.004)	0.011 (0.006)*	-0.001 (0.005)	-0.002 (0.007)
Teacher different teaching methods	0.033 (0.015)**	0.037 (0.017)**	-0.017 (0.021)	0.016 (0.018)	0.032 (0.023)
Teacher asks open questions	0.038 (0.015)***	0.031 (0.016)*	0.015 (0.019)	0.004 (0.017)	-0.044 (0.022)**
Outcome (Score) Mean	0.71	0.72	0.23	0.28	0.68
<i>N</i>	909	909	909	909	909
<i>R</i> ²	0.391	0.308	0.171	0.160	0.147

OLS regressions with marginal effects. Province Fixed Effects. Robust standard errors in parentheses. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$

Exhibit 38. Grades 1 and 2: Relationships between Assessment Scores and Student-, Household-, and Classroom-Level Variables, Part II

	Most Used Words	Silly Sentences	Read Passage	Reading Comp.	Average Score
Female	0.043 (0.025)*	0.002 (0.015)	0.029 (0.029)	0.027 (0.015)*	0.003 (0.011)
Lao-speaking home	0.149 (0.028)***	0.018 (0.018)	0.073 (0.033)**	0.093 (0.017)***	0.133 (0.013)***
Physical disability	-0.058 (0.031)*	-0.080 (0.019)***	-0.026 (0.038)	-0.036 (0.020)*	-0.021 (0.013)
Rural district	-0.093 (0.031)***	-0.018 (0.019)	0.109 (0.037)***	-0.058 (0.019)***	-0.029 (0.014)**
HH asset index	0.027 (0.008)***	0.011 (0.005)**	0.025 (0.009)***	0.017 (0.005)***	0.017 (0.003)***
Reading materials at home index	-0.010 (0.008)	-0.007 (0.005)	-0.005 (0.011)	-0.006 (0.005)	-0.008 (0.004)**
HH member helped w/ homework	0.080 (0.039)**	0.043 (0.025)*	0.022 (0.047)	0.050 (0.025)**	0.052 (0.018)***
HH member read to child	0.017 (0.035)	-0.008 (0.023)	0.059 (0.040)	0.011 (0.022)	0.009 (0.016)
Grade 1	-0.178 (0.025)***	-0.060 (0.016)***	-0.064 (0.029)**	-0.111 (0.015)***	-0.097 (0.011)***
Group-2 school	0.132 (0.027)***	-0.011 (0.017)	-0.080 (0.035)**	0.083 (0.017)***	0.014 (0.012)
Multigrade classroom	-0.073 (0.028)***	-0.029 (0.017)*	-0.143 (0.032)***	-0.046 (0.018)***	-0.035 (0.012)***
Number of students present	-0.009 (0.002)***	-0.001 (0.001)	0.001 (0.002)	-0.006 (0.001)***	-0.004 (0.001)***
Classroom materials index	-0.018 (0.009)**	-0.003 (0.005)	-0.005 (0.010)	-0.011 (0.005)**	-0.003 (0.003)
Teacher different teaching methods	-0.032 (0.029)	0.031 (0.019)	0.013 (0.035)	-0.020 (0.018)	0.010 (0.012)
Teacher asks open questions	0.134 (0.027)***	0.034 (0.018)*	0.070 (0.032)**	0.084 (0.017)***	0.041 (0.011)***
Outcome (Score) Mean	0.34	0.28	0.28	0.21	0.42
N	909	909	909	909	909
R ²	0.190	0.088	0.086	0.190	0.307

OLS regressions with marginal effects. Province Fixed Effects. Robust standard errors in parentheses. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$

Lastly, we examined the relationship between student-, household-, and classroom-level characteristics and the probability of a student scoring in the bottom 25th percentile on each domain, individually, as well as the average total score using probit models. The results of this

analysis are shown in Exhibit 39 for pre-primary students and Exhibit 40 for Grade 1 and Grade 2 students. For pre-primary students, we found that students speaking a language other than Lao at home and those with a reported disability were more likely to score in the 25th percentile on early math and early literacy skills. Students in classrooms with fewer materials were also more likely to score in the bottom quartile on these assessments while students in classes with teachers who asked rote memorization questions as opposed to open questions were more likely to score in the bottom only for math and overall assessment scores. Finally, students in classrooms with teachers using a variety of teaching methods were also more likely to score in the bottom 25th percentile on all domains.

Exhibit 39. Pre-Primary: Student-, Household-, and Classroom-Level Determinants of Low Performance

	Probability of Scoring in Bottom 25th Percentile on:			
	Executive Function	Early Math Skills	Early Literacy Skills	Average Score
Female	0.005 (0.044)	0.015 (0.045)	-0.075 (0.044)*	0.006 (0.045)
Lao-speaking home	-0.064 (0.049)	-0.217 (0.051)***	-0.347 (0.051)***	-0.238 (0.051)***
Physical or learning disability	0.155 (0.099)	0.035 (0.117)	0.058 (0.108)	0.067 (0.114)
Learning disability	0.442 (0.570)	†	†	†
Rural district	-0.065 (0.055)	0.002 (0.056)	0.013 (0.057)	0.009 (0.057)
HH wealth index	0.006 (0.021)	-0.032 (0.020)	0.016 (0.020)	-0.009 (0.022)
Child stimulation index	-0.008 (0.021)	-0.059 (0.021)***	-0.025 (0.020)	-0.030 (0.021)
School infrastructure index	-0.025 (0.017)	0.002 (0.018)	-0.022 (0.016)	-0.015 (0.018)
Group-2 school	-0.023 (0.048)	0.001 (0.049)	0.072 (0.047)	0.053 (0.048)
Number of students present	-0.003 (0.003)	-0.003 (0.003)	-0.004 (0.003)	-0.001 (0.003)
Classroom materials index	-0.010 (0.010)	-0.020 (0.011)*	-0.026 (0.011)**	-0.021 (0.011)*
Teacher uses different teaching methods	0.120 (0.051)**	0.161 (0.051)***	0.181 (0.051)***	0.153 (0.051)***
Teacher asks open questions	-0.077 (0.050)	-0.147 (0.051)***	-0.073 (0.053)	-0.112 (0.052)**
Outcome (Score) Mean	0.26	0.25	0.25	0.25
N	400	398	398	398

Marginal Effects of Probit Regressions. Robust standard errors in parentheses. †Denotes the variable perfectly predicts the outcome. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$

The results of our analysis for Grade 1 and Grade 2 students followed relatively similar trends as those for pre-primary. Grade 1 and Grade 2 students from homes where Lao was not the main language spoken were more likely to score in the bottom 25th percentile across all domains in the LB assessment. Students of lower socio-economic status were also more likely to score in the bottom quartile on all domains though the results for phonological awareness was not statistically significant. Grade 1 students were more likely to be low performers compared to their Grade 2 counterparts, and the classrooms with more students present were associated with a higher likelihood that students in the class scored in the bottom 25th percentile. Students from classrooms in which teachers asked open ended questions were statistically significantly less likely to score in the bottom quartile on expressive vocabulary and listening comprehension sections of the assessment, while there was no clear association with story retelling, phonological awareness, or letter identification.

Exhibit 40. Grades 1 and 2: Student-, Household-, and Classroom-Level Determinants of Low Performance

	Probability of Scoring in Bottom 25th Percentile on:				
	Expressive Vocab	Listening Comp.	Story Retell	Phono. Awareness	Letter Identification
Female	0.023 (0.018)	0.017 (0.029)	0.024 (0.036)	0.023 (0.032)	0.040 (0.033)
Lao-speaking home	-0.267 (0.028)***	-0.314 (0.036)***	-0.292 (0.038)***	-0.105 (0.039)***	-0.228 (0.038)***
Physical disability	-0.022 (0.020)	0.021 (0.036)	-0.008 (0.044)	0.023 (0.040)	0.017 (0.042)
Rural district	0.028 (0.025)	0.163 (0.043)***	0.085 (0.046)*	0.061 (0.043)	0.056 (0.043)
HH asset index	-0.019 (0.005)***	-0.016 (0.009)*	-0.035 (0.011)***	-0.003 (0.010)	-0.018 (0.010)*
HH member helped w/ homework	-0.077 (0.040)*	0.002 (0.046)	-0.089 (0.063)	-0.088 (0.059)	-0.097 (0.058)*
HH member read to child	-0.002 (0.025)	-0.010 (0.042)	-0.063 (0.050)	-0.022 (0.048)	-0.008 (0.046)
First grade	0.048 (0.019)**	0.084 (0.030)***	0.117 (0.036)***	0.112 (0.033)***	0.158 (0.033)***
Group-2 school	0.004 (0.019)	-0.011 (0.032)	-0.025 (0.041)	-0.020 (0.038)	0.030 (0.037)
Multigrade classroom	-0.013 (0.019)	-0.073 (0.030)**	0.001 (0.040)	-0.007 (0.036)	0.038 (0.037)
Number of students present	0.010 (0.002)***	0.010 (0.002)***	0.009 (0.003)***	0.002 (0.003)	0.008 (0.003)***
Classroom materials index	-0.007 (0.006)	-0.003 (0.010)	-0.025 (0.013)**	0.012 (0.011)	-0.010 (0.011)
Teacher uses different teaching methods	-0.016 (0.020)	-0.035 (0.034)	-0.042 (0.041)	0.020 (0.037)	-0.050 (0.037)
Teacher asks open questions	-0.066	-0.066	0.002	-0.006	0.018

	(0.019)***	(0.031)**	(0.038)	(0.035)	(0.035)
Outcome (Score) Mean	0.28	0.26	0.51	0.37	0.34
N	893	893	893	893	893

Marginal Effects of Probit Regressions. Province Fixed Effects. Robust standard errors in parentheses. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$

Conclusions

The baseline round of the LtR assessment was conducted between March and May 2021. Even though quantitative data collection was disrupted due to the resurgence of COVID-19 in Lao PDR and resultant school closures and travel restrictions, our team was able to complete planned qualitative data collection in all provinces and quantitative data collection in Xiengkhuang Province. We were able to supplement this partial quantitative data with other existing datasets to generate a proxy baseline of student literacy outcomes for the LtR program.

In general, we find relatively low levels of mastery of students' school readiness and early grade literacy skills in Xiengkhuang Province as well as in our proxy baseline, suggesting these students have much to gain from the LtR project. Speaking a language other than Lao at home, having a lower socio-economic status, living in a rural area, having a disability, and being in a multigrade classroom predicted lower performance on literacy subtests. Multigrade classrooms were only associated with lower scores for the higher-level literacy skills. Further, classrooms with a larger number of students present, with fewer learning materials, and in which teachers do not ask open questions were also found to be associated with lower student performance on the assessments in both pre-primary and Grades 1 and 2. In line with these results, stakeholders from Group 2 schools suggested that the learning materials provided by the LtR project helped to improve student reading skills in those schools. Therefore, baseline evidence suggests the LtR program activities are well suited to improve student literacy outcomes at the pre-primary, Grade 1, and Grade 2 level.

Parents in our study sample overwhelmingly expressed their support for and value of education for their children, though time was consistently noted as the largest barrier to actively supporting their child and the schools. Further, socio-economic barriers, long distances to school and a lack of teachers were the most frequently cited challenges to school attendance. However, educational stakeholders expressed mixed views about parental engagement in children's education, with some suggesting that parents were rarely engaged and that students did not receive enough educational support at home. To support this idea, most parents and students reported having no access to storybooks at home, with the exception of some parents and students from Group 2 schools who had borrowed books made available by the LtR program. Even so, there was a high number of students reporting being read to at home, just

likely not with storybooks. Respondents from Group 2 schools also reported more interaction and engagement between parents and teachers than those who did not receive the LtR intervention, noting that teachers communicated with parents about student attendance and performance and discussed how to support children's learning at home. This suggests that the LtR program facilitates parental engagement.

Lastly, we find that classroom management is generally equitably distributed because teachers walked around classrooms and girls and boys were distributed evenly throughout the classroom. Teachers used a variety of teaching methods even though many lacked sufficient teaching and learning materials. Teachers took steps to ensure that minority students were not overlooked, whether due to sex, language, or pre-primary background, though they lacked knowledge on how to teach students with learning difficulties. Finally, teachers felt that the trainings they did receive were insufficient and they wanted additional training, especially training focused on literacy instruction.

Study Limitations and Mitigation Measures

This baseline study is not without some limitations which may affect the interpretation of results. First of all, as noted, quantitative data collection was interrupted due to the resurgence of COVID-19 throughout the country. As such, the AIR team was only able to collect full data for one of the four provinces and can therefore only provide exact baseline values for key outcomes in this region. Halting further quantitative data collection in the remaining three provinces meant that the baseline data is no longer truly representative of the LtR project. Any differences between regions, provinces or specific ethnic groups were not collected. It may be that Xiengkhuang schools perform better in reading skills and so any targets set would be higher than reasonable for the other provinces. This could affect the level of perceived success at the end of the project. However, the AIR was able to supplement this analysis with data from other literacy-focused projects in Lao PDR to provide demonstrative estimates for baseline values for the other LtR provinces (Vientiane, Champasak, and Attapeu). At endline we will use these data to conduct a pseudo-matching of LtR districts with non-LtR districts from which to create comparisons for how LtR has improved student reading outcomes over time.

Relatedly, the suspension of baseline data collection and the extended school closures also meant it was not feasible to conduct a separate Rapid Cycle Evaluation (RCE) as that was planned for September 2021. The RCE was originally designed to assess the short-term results of key pilot program interventions, namely the Caregiver Engagement sessions for the reading readiness program on pre-primary students' reading outcomes, the inclusive education pilot on classroom teaching practices, and the summer reading camps on learning outcomes for Grade 1 and Grade 2 students, as well as teachers' perceptions of and receptivity to the program

materials. The latest design of the overall evaluation meant that the short-term results of caregiver engagement and inclusive education activities would have been assessed within the baseline through comparison against schools or communities that had not taken part in these pilots.

Next Steps

The AIR team is scheduled to implement endline data collection in March 2023 prior to project closeout in mid- to late-2023. In the meantime, SC is rolling out implementation of the LtR project in Group 3 schools and continuing implementation in the other Groups.

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Annex A

Problem	Barriers	Strategies	Medium-Term Outcomes	Long-Term Outcomes	Goal	
Low reading levels of children in early grades, particularly non-Lao speakers and children with disabilities	Disadvantaged populations lack the equitable opportunities they need to read	<ul style="list-style-type: none">• Provide evidence-based, supplemental reading instructional approaches and materials• Collaborate with MOES and GPE to design the preprimary reading-readiness package and instructional materials• Collaborate with MOES and BEQUAL to design the primary package and instructional materials• Develop and distribute a complementary set of TLMs for teachers to use with non-Lao-speaking children• Screen children for low vision and hearing in classrooms	<p>Evidence-based approaches and programs developed that improve oral language and prereading and prewriting skills for preprimary students, particularly those from disadvantaged populations</p> <p>Lao-language-literacy pedagogical approaches and programs developed that address gaps in the new first-to-second-grade curriculum for non-Lao speakers and students with mild disabilities</p> <p>Increased availability of children's books and teaching and learning materials appropriate for non-Lao-speaking children and children with disabilities</p>	Improved Lao reading ability of preprimary and first- and second-grade students with a special focus on non-Lao speakers and vulnerable students	Reading skills of primary school students are improved, particularly for non-Lao-speaking children and students with disabilities	
	Supply of appropriate reading materials is inadequate for children's language and literacy development					
Unqualified teachers to address individual needs of children with disabilities and non-Lao speakers	Teachers in rural areas are in short supply, causing reliance on untrained volunteer teachers	<ul style="list-style-type: none">• Collaborate with MOES and other partners to develop and deliver robust teacher training program• Develop and test teacher-coaching models• Adopt phased approach to capacity development of MOES	<p>Strengthened capacity of teachers (preprimary and first and second grades) to apply effective classroom teaching and learning activities for second-language learners and children with disabilities</p> <p>Strengthened capacity of PAs, school directors, TDC/TTC, master trainers (MT), and MoES personnel at all levels to support scale-up of the activity in new schools and districts</p> <p>Strengthened capacity of school directors and pedagogical advisors (PAs) to provide ongoing support to teachers</p>	Improved classroom instruction through enhanced teacher competencies to meet needs of target children		
	Resources are inadequate for teaching reading to non-Lao-speaking students and those with mild disabilities					
	Teacher coaching/mentoring models are not adequately developed or implemented in schools and teachers not trained on second-language instruction					
Children have low exposure to reading and a supportive reading environment at home	Children have low exposure to reading outside of school, and few reading materials exist in most homes	<ul style="list-style-type: none">• Develop Community Engagement and Mobilization Strategy• Train VEDCs to identify and support a Literacy Champion in their community• Language and literacy radio programs through national radio station• Test and implement additional literacy support interventions• Implement community- and district-level SBCC strategy	<p>Improved home literacy environments to support children's language acquisition in their mother tongue and preliteracy skills development</p> <p>Additional extracurricular interventions developed and tested to address the needs of children from disadvantaged populations</p> <p>An improved culture of support for literacy for all children</p>	Strengthened community engagement to create a conducive learning environment for improved reading skills, particularly for non-Lao-speaking and vulnerable communities		
	Parents in disadvantaged areas are unable to gain access to services for struggling children					
	Literacy levels are low for many adults, particularly in remote areas and among disadvantaged women, leading to lower levels of reading support at home					
Critical Assumptions						
1. Teachers are open to changing their current methods of teaching and using enhanced materials, trained teachers will be retained in intervention schools, and more targeted TLMs and pedagogy lead to retention and improved learning among non-Lao-speaking children and children with disabilities.						
2. PESS and DESB officials will devote time to engage in program activities, and communities will devote time to engage in program activities.						
3. MoES will allocate resources for the scale-up of the USAID Learn to Read model to schools and districts with technical support from the activity.						

Annex B

Exhibit B1. MELQO scores by domain—Mean comparisons by gender

Scores	Male		Female		Mean	SE
	Obs.	Mean	Obs.	Mean	Difference	MD
Executive Function	208	0.285	207	0.279	0.007	0.009
Math Skills	208	0.445	207	0.417	0.028	0.019
Literacy Skills	208	0.311	207	0.322	-0.010	0.014

Note. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$

Exhibit B2. MELQO scores by domain—Mean comparisons by rural–urban divide

Scores	Urban		Rural		Mean	SE
	Obs.	Mean	Obs.	Mean	Difference	MD
Executive Function	301	0.280	114	0.286	-0.006	0.011
Math Skills	301	0.432	114	0.429	0.003	0.021
Literacy Skills	301	0.315	114	0.319	-0.004	0.016

Note. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$

Exhibit B3. MELQO scores by domain—Mean comparisons by Group 2 and Group 3 schools

Scores	Grade 3		Grade 2		Mean	SE
	Obs.	Mean	Obs.	Mean	Difference	MD
Executive Function	147	0.268	268	0.290	-0.022	0.010
Math Skills	147	0.420	268	0.438	-0.018	0.019
Literacy Skills	147	0.310	268	0.320	-0.009	0.015

Note. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$

Exhibit B4. Descriptive statistics—Language and reading assessment scores: Champasak

Score	N	Mean	Median	SD	Max	Min
Expressive Vocabulary	97	0.87	0.85	0.08	1.00	0.65
Listening Comprehension	97	0.84	0.87	0.18	1.00	0.13
Story Retelling	97	0.33	0.25	0.30	1.00	0.00
Phonological Awareness	97	0.35	0.36	0.24	1.00	0.00

Score	N	Mean	Median	SD	Max	Min
Symbol Identification	97	0.77	0.80	0.26	1.00	0.00
Most-Used Words	97	0.53	0.60	0.43	1.00	0.00
Silly Sentences	97	0.31	0.25	0.25	1.00	0.00
Read Passage A	97	0.14	0.00	0.35	1.00	0.00
Reading Comprehension	97	0.33	0.38	0.27	0.63	0.00

Note. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$

Exhibit B5. Descriptive statistics—Language and reading assessment scores: Vientiane

Score	N	Mean	Median	SD	Max	Min
Expressive Vocabulary	139	0.78	0.90	0.25	1.00	0.00
Listening Comprehension	139	0.79	0.93	0.28	1.00	0.00
Story Retelling	139	0.32	0.25	0.32	1.00	0.00
Phonological Awareness	139	0.43	0.36	0.32	1.00	0.00
Symbol Identification	139	0.70	0.80	0.33	1.00	0.00
Most-Used Words	139	0.40	0.20	0.44	1.00	0.00
Silly Sentences	139	0.35	0.38	0.26	1.00	0.00
Read Passage A	139	0.21	0.00	0.41	1.00	0.00
Reading Comprehension	139	0.25	0.13	0.28	0.63	0.00

Note. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$

Exhibit B6. Descriptive statistics—Language and reading assessment scores: Xiengkhouang

Score	N	Mean	Median	SD	Max	Min
Expressive Vocabulary	750	0.68	0.75	0.25	1.00	0.00
Listening Comprehension	750	0.70	0.80	0.27	1.00	0.00
Story Retelling	750	0.20	0.00	0.27	1.00	0.00
Phonological Awareness	750	0.25	0.18	0.22	1.00	0.00
Symbol Identification	750	0.66	0.80	0.32	1.00	0.00
Most-Used Words	750	0.31	0.00	0.38	1.00	0.00
Silly Sentences	750	0.26	0.25	0.23	1.00	0.00
Read Passage A	750	0.32	0.00	0.47	1.00	0.00
Reading Comprehension	750	0.19	0.00	0.24	0.63	0.00

Note. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$

Exhibit B7. Language and reading assessment scores—Mean comparisons by gender

Student Outcomes	Male		Female		Mean	SE
	Obs.	Mean	Obs.	Mean	Difference	MD
Expressive Vocab	506	0.724	480	0.704	0.020	0.016
Listening Comprehension	506	0.730	480	0.719	0.011	0.017
Story Retelling	506	0.224	480	0.229	-0.005	0.018
Phonological Awareness	506	0.287	480	0.279	0.008	0.016
Symbol Identification	506	0.687	480	0.670	0.017	0.021
Most-Used Words	506	0.324	480	0.362	-0.038	0.026
Silly Sentences	506	0.276	480	0.277	-0.001	0.015
Read Passage A	506	0.271	480	0.300	-0.029	0.029
Reading Comprehension	506	0.203	480	0.226	-0.023	0.016

Exhibit B8. Language and reading assessment scores—Mean comparisons by rural–urban divide

Student Outcomes	Urban		Rural		Mean	SE
	Obs.	Mean	Obs.	Mean	Difference	MD
Expressive Vocab	732	0.707	254	0.733	-0.026	0.018
Listening Comprehension	732	0.734	254	0.697	0.037	0.020
Story Retelling	732	0.226	254	0.227	-0.001	0.020
Phonological Awareness	732	0.292	254	0.258	0.034	0.017
Symbol Identification	732	0.674	254	0.693	-0.019	0.023
Most-Used Words	732	0.350	254	0.320	0.031	0.029
Silly Sentences	732	0.283	254	0.258	0.026	0.017
Read Passage A	732	0.272	254	0.323	-0.051	0.034
Reading Comprehension	732	0.219	254	0.200	0.019	0.018

Note. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$

Exhibit B9. Language and reading assessment scores—Mean comparisons by disability status

	Without Disability		With Disability		Mean	SE
Score	Obs.	Mean	Obs.	Mean	Difference	MD
Expressive Vocab	764	0.718	207	0.715	0.003	0.019
Listening Comp.	764	0.734	207	0.707	0.027	0.022
Story Retelling	764	0.231	207	0.226	0.006	0.022
Phono. Awareness	764	0.289	207	0.275	0.013	0.020
Symbol Identification	764	0.680	207	0.687	-0.007	0.025
Most Used Words	764	0.358	207	0.302	0.055	0.031
Silly Sentences	764	0.295	207	0.217	0.078***	0.017
Read Passage A	764	0.288	207	0.280	0.008	0.035
Reading Comp.	764	0.224	207	0.189	0.035	0.019

Exhibit B10. Descriptive statistics—Caregiver survey (child) - By Gender

Indicator/Variable	Male		Female		Mean	SE
	Obs.	Mean	Obs.	Mean	Difference	MD
Home has 0 books for children	110	0.727	115	0.791	-0.064	0.057
Home has 1-3 books for children	110	0.245	115	0.183	0.063	0.055
Home has 4+ books for children	110	0.027	115	0.026	0.001	0.022
In the past 3 days, did the caregiver or any household members aged 15 or over engage in any of the following activities with the child?						
Read books	110	0.709	114	0.719	-0.010	0.061
Told stories	110	0.618	115	0.583	0.036	0.066
Sang songs	110	0.555	115	0.530	0.024	0.067
Took outside home	110	0.773	115	0.800	-0.027	0.055
Played	110	0.891	115	0.861	0.030	0.044
Name, counted, or drew things	110	0.818	113	0.850	-0.031	0.050

Exhibit B11. Descriptive statistics—Caregiver survey (child) - Champasak

Variable/Indicator	N	Mean	Median	Std. Dev.	max
Home has 0 books for children	20	.8	1.00	.41	1
Home has 1-3 books for children	20	.2	0.00	.41	1
Home has 4+ books for children	20	0	0.00	0	0
In the past 3 days, did the caregiver or any household members aged 15 or over engage in any of the following activities with the child?					
Read books	20	.5	0.50	.51	1

Told stories	20	.45	0.00	.51	1
Sang songs	20	.45	0.00	.51	1
Took outside home	20	.85	1.00	.37	1
Played	20	.9	1.00	.31	1
Name, counted, or drew things	20	.85	1.00	.37	1

Exhibit B12. Descriptive statistics—Caregiver survey (child) - Vientiane

Variable/Indicator	N	Mean	Median	Std. Dev.	max
Home has 0 books for children	36	.61	1.00	.49	1
Home has 1-3 books for children	36	.36	0.00	.49	1
Home has 4+ books for children	36	.03	0.00	.17	1
In the past 3 days, did the caregiver or any household members aged 15 or over engage in any of the following activities with the child?					
Read books	36	.78	1.00	.42	1
Told stories	36	.67	1.00	.48	1
Sang songs	36	.56	1.00	.5	1
Took outside home	36	.86	1.00	.35	1
Played	36	.89	1.00	.32	1
Name, counted, or drew things	36	.86	1.00	.35	1

Exhibit B13. Descriptive statistics—Caregiver survey (child) - Xiengkhouang

Variable/Indicator	N	Mean	Median	Std. Dev.	max
Home has 0 books for children	169	.79	1.00	.41	1
Home has 1-3 books for children	169	.18	0.00	.39	1
Home has 4+ books for children	169	.03	0.00	.17	1
In the past 3 days, did the caregiver or any household members aged 15 or over engage in any of the following activities with the child?					
Read books	168	.73	1.00	.45	1
Told stories	169	.6	1.00	.49	1
Sang songs	169	.55	1.00	.5	1
Took outside home	169	.76	1.00	.43	1
Played	169	.87	1.00	.34	1
Name, counted, or drew things	167	.83	1.00	.38	1

Note. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$

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