School Readiness Camp
Assessment Results

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OVERVIEW

The School Readiness Camp is one of the activities of the Improved Literacy of School-Age Children component of the USDA-funded School Lunch Project 2021-2025 (SLP) of Catholic Relief Services (CRS) in Lao PDR, in partnership with the Ministry of Education and Sports (MOES) and World Food Programme (WFP).

The first goal of the camp is to develop the oral Lao language skills of pre-primary students who will be entering Grade 1 at the beginning of the academic calendar. Providing opportunities for pre-primary learners to listen to, understand and practice speaking Lao language, helps them to be more ready to learn how to read and write Lao in Grade 1.

The second goal of the camp is to familiarize pre-primary learners with a classroom environment, where they are introduced to reading, writing, and print materials to build their understanding of how print works, also referred to as their concept of print.

Finally, the overarching goal of the School Readiness Camp is to instill a sense of readiness, enthusiasm, and competence in pre-primary learners, enabling them to acquire reading skills in Grade 1 and, ultimately, to remain engaged in their education and continue to develop their reading abilities, contributing to the improvement of literacy of school-age children in Lao PDR.

The School Readiness Camp was implemented in two cohorts across 90 schools in four (4) districts of Khammuan Province: Nhommalath, Mahaxay, Xaybuathong, and Bualapha. The first cohort of 45 schools was implemented from June to August 2022 in three districts: Nhommalath (15 schools), Mahaxay (15 schools), and Xaybuathong (15 schools). The second cohort of 45 schools was implemented in Bualapha district, from June to August 2023.

This report outlines the result of the Semantic Fluency Test (baseline and endline) administered to children participating in the second cohort of the School Readiness Camp.

OUTLINE OF THE SCHOOL READINESS CAMP APPROACH

The School Readiness Camp is facilitated by Community Literacy Volunteers (CLVs) trained in the camp's objectives and the curriculum utilizing scripted lessons. The camp is aimed towards children who are at least 5 years old and in kindergarten or incoming Grade 1 students in the following school year, with a particular emphasis on Lao children of various ethnicities who speak a language other than the Lao language of instruction at home. The School Readiness Camp has a schedule of morning teaching per day, five days per week, for twelve weeks, completed prior to the school's opening. The curriculum focuses on core reading subskills such as phonemic awareness, letter recognition, and vocabulary development, and it includes activities to enhance reading, such as storytelling, singing, and games, as well as socio-emotional learning and health and hygiene lessons.

Photo by Anoutta Vongladsamee/CRS

METHODOLOGY

Data collection

To assess the effectiveness of the School Readiness Camp, CRS administered the Semantic Fluency Test to selected children participating in the camp. The Semantic Fluency Test is a modified version of the Oral Language Readiness Screener developed by the American Institutes for Research as part of the DFAT-funded Child Literacy Development Project of CRS in Khammuan Province in 2018.

The Semantic Fluency Test is composed of two tasks. The first task, which assesses expressive vocabulary skills, involves students orally naming as many Lao words that come to their mind (picture naming and semantic (word) association) based on an image of a typical Lao outdoor scene within one (1) minute. The second task assesses a child's receptive vocabulary[1], the picture-choice task. Students are asked to identify a noun that can be found within an image by pointing to it after the assessor states the word in Lao language. Fourteen words were chosen for this part of the assessment. The enumerators recorded the responses using an offline survey form in CommCare, a mobile application to collect, report, and store data.

Prior to conducting the assessment and implementing activities, the CRS literacy team informed parents and the VEDC (Village Education Development Committee) about the School Readiness Camp concept and the activities to be conducted during the camp period. This orientation also included asking for consent from parents to allow their children to participate in the semantic fluency test before and after the camp.

Sampling

To assess the second cohort of the School Readiness Camp in year 2023, CRS considered all eligible camp participants as the population of interest. Both Lao-speaking and non-Lao speaking participants who were at least 5 years and 6 months and enrolled in pre-primary school or anticipated to be incoming Grade 1 students in the next school year were deemed eligible to participate in the school readiness camp. CRS intended to administer the semantic fluency pretest and posttest to the entire population of interest; however, not all participants were able to complete both pretest and posttest. Out of 1,228 School Readiness Camp participants, 990 children completed the pre-test and the post-test. This resulted to a confidence level of 95% and a margin of error of around 1.4.

Enumerators

CRS Community Literacy Volunteers (CLVs) administered the Semantic Fluency Test to the sampled children participating in the School Readiness Camp. The literacy coaches and SLP MEAL officer provided training to 180 CLVs for data collection in the target villages. The training involved guidance on how to administer the test, how to record the results using a mobile offline application, and techniques on how to conduct an interview.

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[1] Receptive vocabulary assesses students' ability to identify nouns based on stimulus sheets with four images corresponding to nouns they hear from assessor in the language of the assessment. RELM.24Oct2023.2-pager (edu-links.org)

Limitations

There are a few limitations worth commenting on in this report. First, the CLVs were new to administering the test. Although they received training by CRS, there were instances noted of CLVs forgetting to use timers and poor comprehension of the test questions and instructions. Therefore, test enumeration was a noted limitation to data quality.

Second, the second cohort experienced challenges related to the rainy season. Many villages experienced flooding which prevented the team from travelling to the villages to conduct the post-test. Some CLVs did not feel confident to administer the post-test by themselves and opted to wait for literacy coaches (CRS staff) to be able to visit the village. This led to some post-tests being administered a month after the end of the School Readiness Camp; the Semantic Fluency post-test was intended to be administered immediately after the end of the cohort.

Lastly, CRS recognizes that employing semantic fluency tests with early-grade children entails inherent limitations. These constraints inevitably impact the robustness of the findings presented in this report. It is essential to contextualize these findings within the framework of using semantic fluency tests as a means to assess the oral Lao language skills of children. Importantly, this report does not purport to offer an all-encompassing or definitive judgment of the learning abilities of the children who participated in the school readiness camp.

RESULTS AND FINDINGS

Photo by Daovady Mahaxay/CRS

Demographics

1,228 children Participated in the second round (year 2023) of the school readiness camp. Out of the total school readiness camp participants, **990 children (81%)** completed both baseline and endline assessment, **99 children (8%)** completed only the pretest, and 140 children (11%) were only able to take the post-test.

Able to take the post-test
11%

Completed only the pretest
8%

Completed both baseline and end-line assessment.
81%
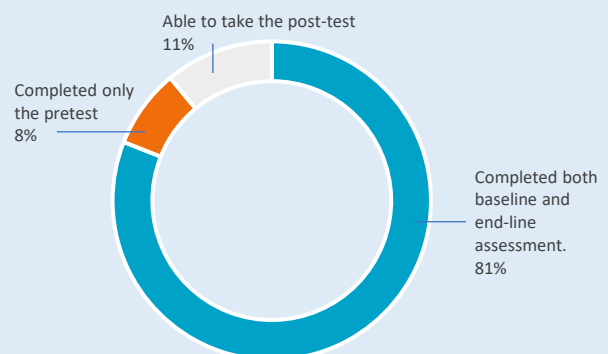
The table below shows the distribution of children who participated in the School Readiness Camp and semantic fluency assessments.

Table 1: Semantic Fluency Test Participant Demographics

	Bualapha (Tested person/Total participant)		Mahaxay (Tested person/Total participant)		Nhommalath (Tested person/Total participant)		Xaybuathong (Tested person/Total participant)		Total	
Lao	221/253	87%	128/145	88%	54/65	83%	122/151	81%	524/614	85%
Female	123/141	87%	70/79	89%	28/36	78%	65/81	80%	286/337	85%
Male	98/112	88%	58/66	88%	26/29	90%	56/70	80%	238/277	86%
Non-Lao	305/400	76%	38/56	68%	82/98	84%	40/60	67%	465/614	76%
Female	155/202	77%	27/39	69%	46/53	87%	18/28	64%	246/322	76%
Male	150/198	76%	11/17	65%	36/45	80%	22/32	69%	219/292	75%
Total	526/653	81%	166/201	83%	136/163	83%	161/211	76%	989/1228	81%

Expressive Vocabulary: Picture naming and semantic (word) association task

The results of the semantic fluency test show an increase in the number of words spoken within a minute from baseline to endline. Specifically, the average number of words spoken rose from the initial baseline average of 9 words in one minute (with a standard deviation σ of 3.7) to the subsequent endline average of 13 words in one minute (with a standard deviation σ of 3.9).

In addition, as seen in the chart below, the endline result shows that more children were able to speak more words in the endline as observed from the positive movement of the distribution of scores towards higher number of words spoken; more children are now able to speak more than 20 words after participating in the school readiness camp. This positive shift in the distribution of score also shows a decrease in the number of children who can speak less than 5 words (1%); 13% of children spoke less than 5 five words during the baseline.
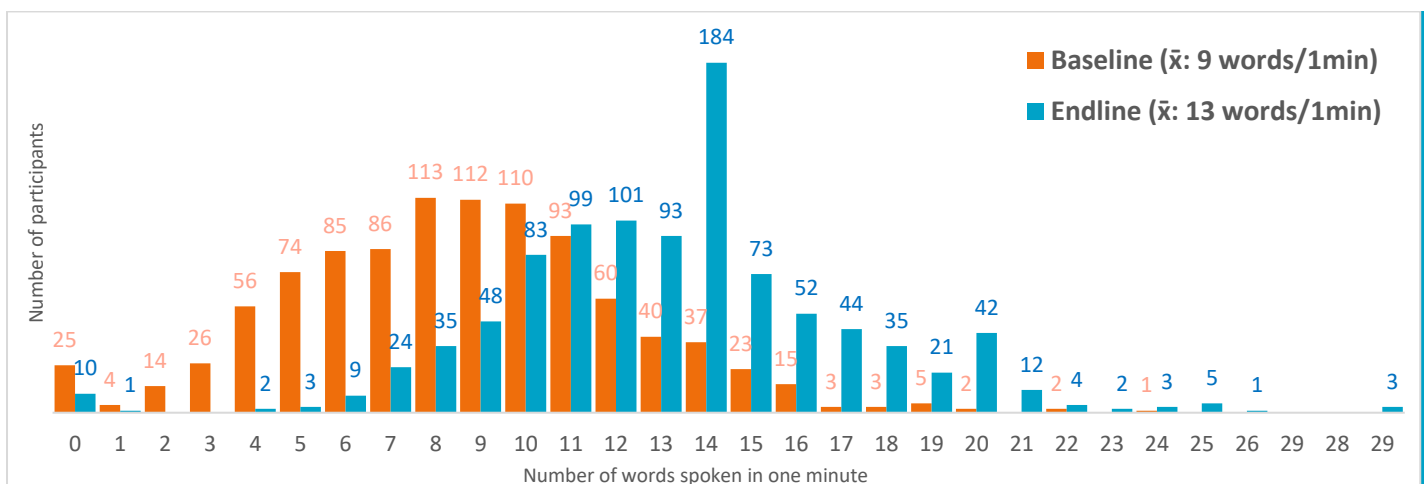

Figure 1: Distribution of Expressive Vocabulary Scores

Photo by Anoutta Vongladsamee/CRS

Noting that School Readiness Camp participants were expected to enroll in Grade 1 in school year 2024, CRS looked at the reading readiness of the School Readiness Camp participants using the *Reading Readiness Toolkit* developed by CRS Laos and the American Institutes for Research. The Reading Readiness Toolkit is designed primarily for the use of Grade 1 teachers. The purpose of the toolkit is to provide an overview of what reading readiness is and its importance. The toolkit also aims to provide tools for assessing children's reading readiness in Lao as well as concrete pedagogical strategies for addressing identified weaknesses.

According to the toolkit, a child is classified as "needing lots of extra attention" if he or she is only able to speak 12 words or less. If a child can speak 13 to 20 words, the child is classified as "needing some extra attention." Children who can speak more than 20 words are classified as "not needing extra attention."
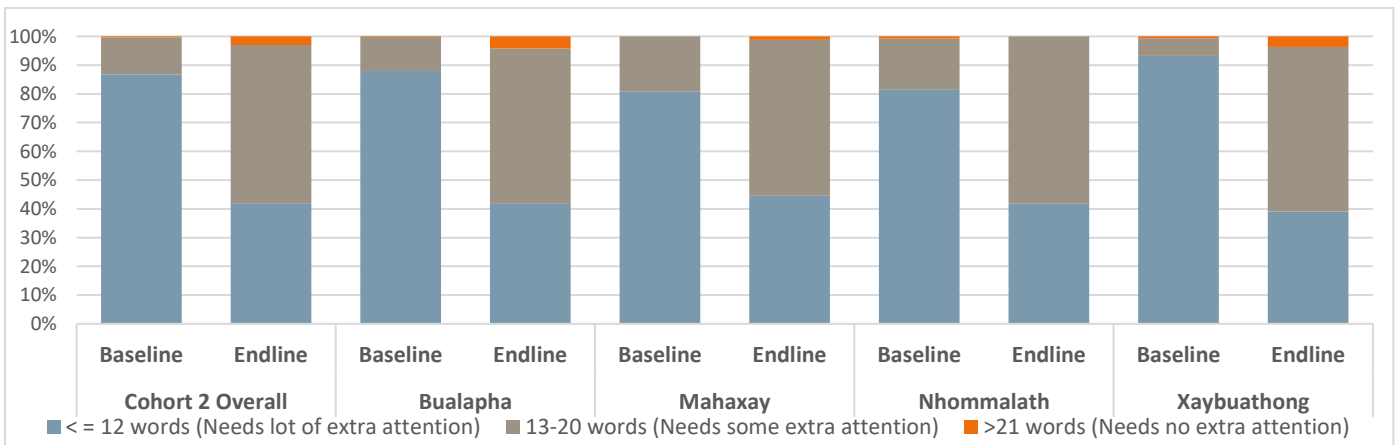

Figure 2: Attention Needs Based on Expressive Vocabulary Results

The children's ability to orally name objects in an image and vocalize other words that came to mind during the first task of the Semantic Fluency Test had improved positively after the school readiness camp as shown in Figure 2. The number of children "needing lots of extra attention" had decreased by 51.63%, moving into the category of "needing some extra attention." This is appropriate given that the classifications in the *Reading Readiness Toolkit* are for Grade 1 learners and these children are expected to enroll in Grade 1 in the upcoming school year. As per toolkit definition, majority of the children would only require some attention, instead of a lot of extra attention, from teachers in the upcoming school year. However, it should be noted that caution should be exercised in attributing causation to the school readiness camp given the absence of a controlled group.

Expressive Vocabulary Scores by Language

When looking at average number of words spoken in Lao language by both ethnic non-Lao speaking children and Lao-speaking children, and with consideration to the margin of error, there is no significant difference between Lao-speaking children and children whose home language is not Lao. During the endline, Lao-speaking children were able to speak at an average of 14 words, while non-Lao speaking children were able to speak an average of 13 words.

However, when looking at rate of improvement after participating in the school readiness camp, non-Lao speaking children demonstrated more improvement given that they had a lower baseline average than Lao-speaking children. Figure 3 shows that Lao-speaking children improved by 45.37%, and the non-Lao speaking children improved by 66.4%. The results suggest that prior to participating in the school readiness camp, non-Lao children had less exposure to the Lao language; hence, the lower baseline average as compared to Lao-speaking children. The negligible difference in the increased endline average suggests that the school readiness camps provided the non-Lao speaking children the opportunity and environment to improve their oral Lao language and catch up and achieve similar language proficiency as Lao-speaking children.
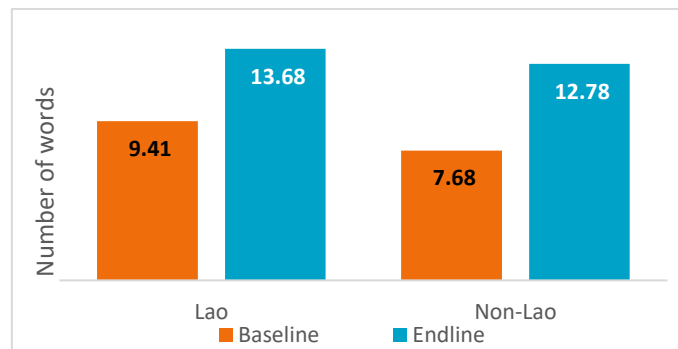

Figure 3: Baseline and Endline Average Expressive Vocabulary Scores by Language of Children

Expressive Vocabulary Scores of Girls and Boys

No discernible differences can be observed between girls and boys when it comes to the number of words spoken in a minute. Figure 4 shows that the difference between girls and boys are negligible both in the baseline and endline.
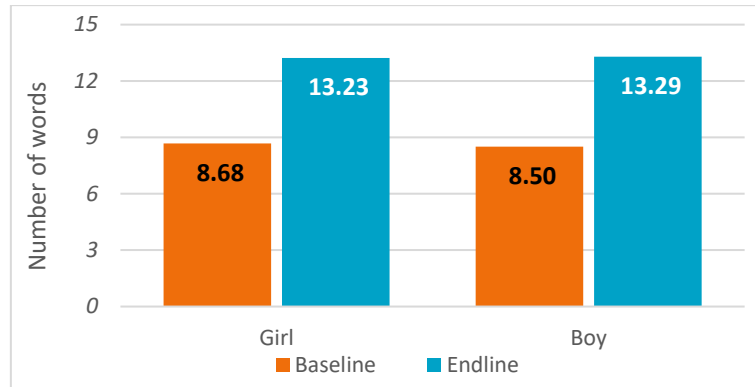

Figure 4: Baseline and Endline Average Expressed Vocabulary Scores between Girls and Boys

In Figure 5 below, a conformity with the abovementioned results is observed. When looking at each language disaggregation separately, similar results can be observed between boys and girls. Complementary to the results shown in Figure 3, non-Lao speaking boys and girls have lower baseline average scores than their respective counterparts but obtained endline average scores with negligible differences with that of their counterparts.
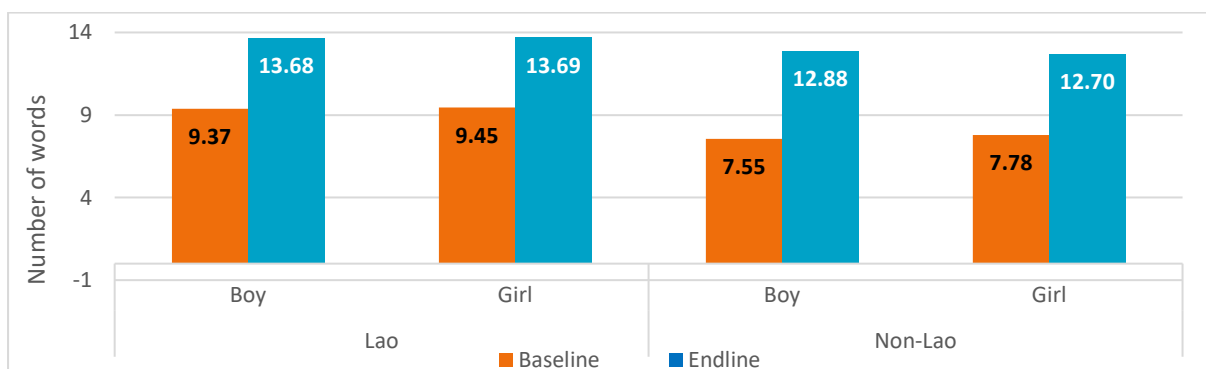

Figure 5: Baseline and Endline Average Expressed Vocabulary Scores between Girls and Boys by Language Spoken

Expressive Vocabulary Scores by District and Language Spoken

Figure 6 below shows the baseline and endline average expressive vocabulary scores of Lao-speaking and non-Lao-speaking children across four districts. Differences in baseline average expressive vocabulary scores are negligible across Lao-speaking and non-Lao speaking children from most of the districts; the same can be observed with the endline results. Bualapha appears to be an exception with slightly lower results for non-Lao-speaking children.
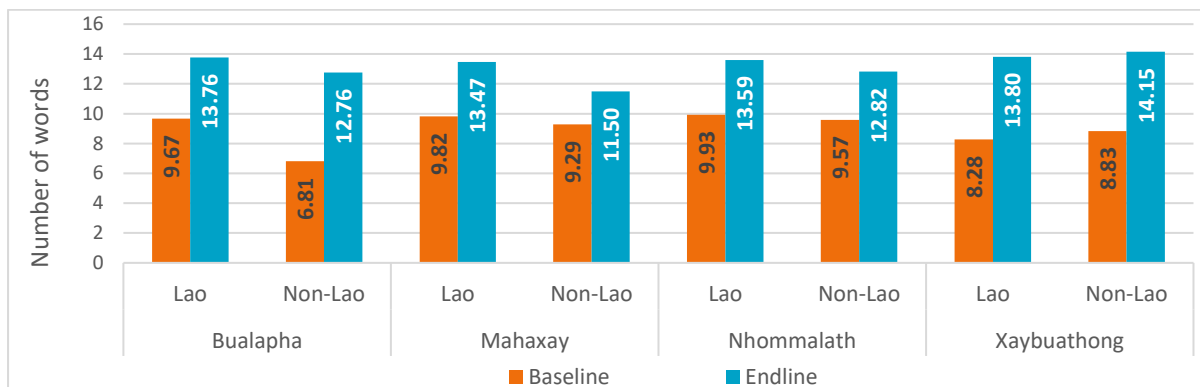

Figure 6: Baseline and Endline Average Expressive Vocabulary Scores by Language Spoken and by District

Photo by Anoutta Vongladsamee/CRS

RECEPTIVE VOCABULARY: PICTURE-CHOICE TASK

The results from the second task of the Semantic Fluency Test are consistent with the results from the expressive vocabulary section. Figure 7 shows that following the completion of school readiness camp, the number of nouns and adjectives that can be found within an image (stated in Lao language by the assessor) correctly identified (by pointing in the image) within one minute by the participants increased. The average number of images correctly identified by the children participants increased to 12 (σ = 2.26) from 8 images (σ = 2.9) in the baseline. In addition, the endline result shows that the number of children who can identify all 14 images have increased considerably; 28% of the children were able to identify all 14 images. Prior to the start of the school readiness camp, only 3% were able to identify all 14 images.

While the minimum range for both baseline and endline remains at one (1) image, the number of children who were only able to identify less than five images (1-4 words only) decreased to 1% in the endline from the baseline (8%).
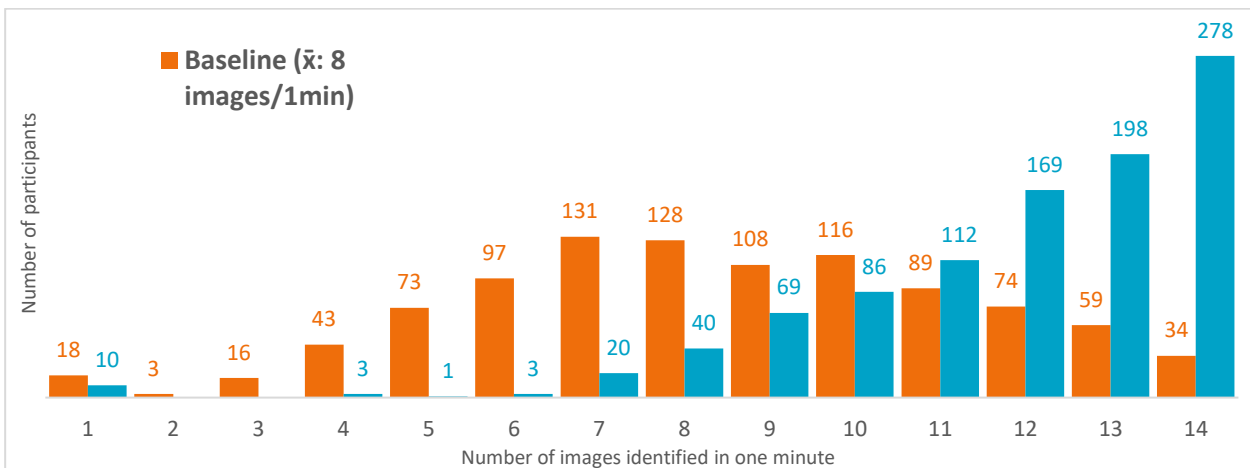

Figure 7: Distribution of Receptive Vocabulary Scores

Photo by Anoutta Vongladsamee/CRS

The results of the Semantic Fluency Assessment also show that children were more able to identify images of specific animals, as opposed to general words or pronoun words that can also be adjectives (e.g. "green", "animal," etc.). In both baseline and endline, the words "goat" and "duck" were the top 2 images that children were able to identify, while "animal" and "square" were the least identified in the image. It can be noted that the words "animal" and "square", a general noun and a shape respectively, are words that can be a representation of a property of an object and is not an object itself. Compared to the other most identified images that are tangible, color and shape are not tangible. The table below shows the number of children who were able to point to images based on the spoken word.

Table 2: Number of Children Able to Identify Images in Receptive Vocabulary Task

Picture-choice Images	Cohort 1 (2022)		Cohort 2 (2023)	
	Baseline	Endline	Baseline	Endline
Goat	263	266	963	987
Duck	242	259	864	954
Chicken/rooster	254	263	836	938
Cow	234	257	834	953
House	222	257	758	937
Tree	232	259	762	916
Boy	204	236	590	894
Broom	210	251	564	790
Animal	124	187	447	701
Sky	141	215	425	846
Head	151	229	415	790
Window	120	192	362	732
Green	105	176	380	727
Square	37	89	174	547

The results in Cohort 2 form congruity with the results from the first cohort of the school readiness camp. Children continue to struggle to identify images related to concepts like "square, animal, green, and window." In contrast, the most easily recognized images (i.e., goat, duck, chicken/rooster, cow) correspond to specific tangible objects. However, images representing abstract properties of objects, rather than the objects themselves, continue to be the least identified.

Receptive Vocabulary Scores of Lao Speaking and Non-Lao Speaking Children
When looking at average images identified according to native language of children, Lao-speaking children and non-Lao-speaking children show similar baseline and endline results with negligible differences. Figure 8 shows the average baseline and endline number of images correctly identified by Lao-speaking and non-Lao speaking children in the receptive vocabulary task.
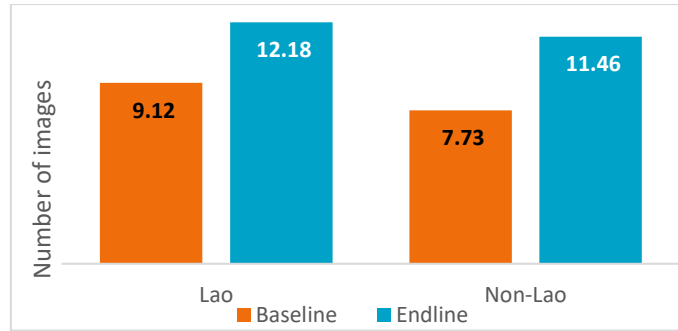
Figure 8: Baseline and Endline Average Receptive Vocabulary Scores by Language Spoken

In Figure 9 below, distinctions between Lao-speaking and non-Lao speaking children can be observed when looking at score range distribution. More Lao speaking children were able to identify at least 6 images than non-Lao speaking children at the start of school readiness camp. The same is apparent at the end of the camp; however, the increase in number of non-Lao speaking children who identified more than 10 images is contextually note-worthy.
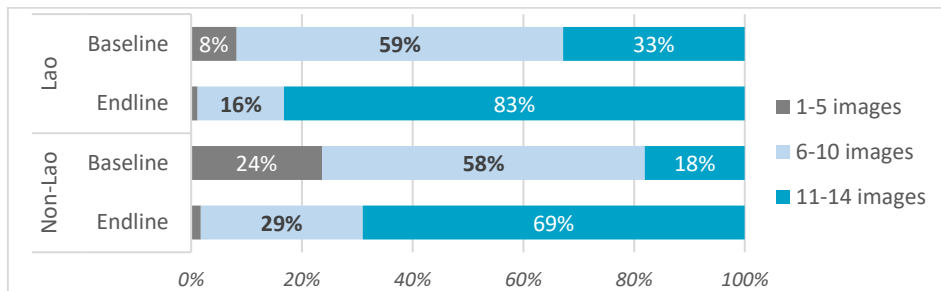

Figure 9: Baseline and Endline Receptive Vocabulary Score Range by Language Spoken

Receptive Vocabulary Scores of Girls and Boys

The figure below shows the comparison between the number of images identified by boys and girls in the receptive vocabulary task. The results display a minimal, and almost negligible, difference between boys and girls. Both boys and girls exhibit an increase from baseline to endline, with girls capturing an average of 11.83 images (up from 8.55 at baseline), and boys capturing an average of 11.86 images (up from 8.37 at baseline). Similar with expressive vocabulary results between girls and boys, this consistency in performance underscores the balanced participation of both genders in receptive vocabulary at the end of the school readiness camp.
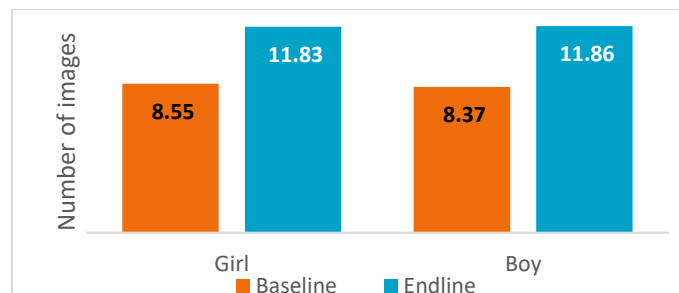

Figure 10: Baseline and Endline Average Receptive Vocabulary Scores of Girls and Boys

When looking at the receptive vocabulary results as score ranges, the balanced performance between girls and boys is further magnified. As shown in the figure

below, baseline and endline score range distribution of girls and boys appears highly similar.
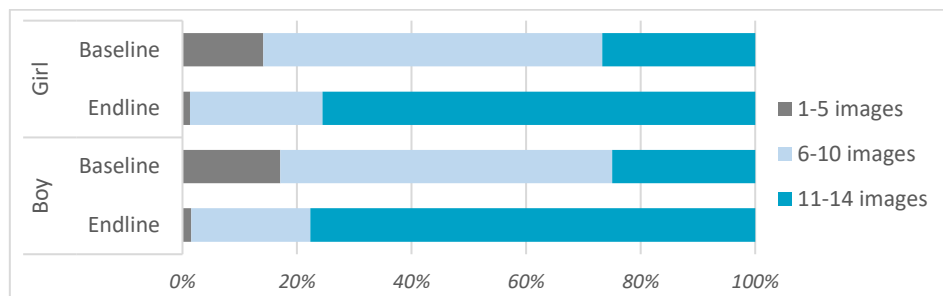

Figure 11: Baseline and Endline Receptive Vocabulary Score Range between Girls and Boys

In Figure 12 below, a conformity with the abovementioned results is observed. When looking at each language disaggregation separately, similar results can be observed between boys and girls. Complementary to the results shown in Figure 10 and 11, non-Lao speaking boys and girls have almost negligible difference in baseline and endline average scores than their respective counterparts.
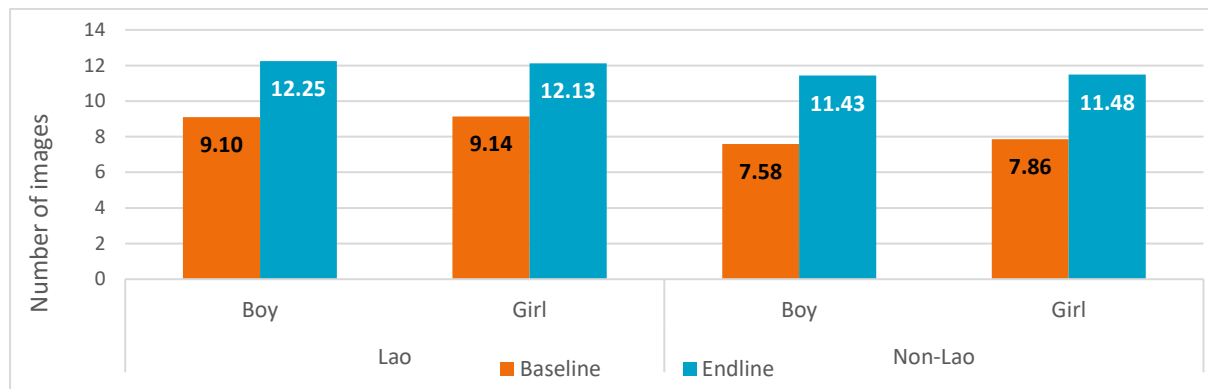

Figure 12: Baseline and Endline Average Receptive Vocabulary Scores between Girls and Boys by Language Spoken

Receptive Vocabulary Scores by District and Language Spoken

When disaggregating the results by district and language spoken, a similar recurring pattern can be observed. Differences in baseline average receptive vocabulary scores are negligible across Lao-speaking and non-Lao speaking children. The same can be observed with the endline results. Figure 13 shows the baseline and endline average receptive vocabulary scores of Lao-speaking and non-Lao-speaking children across four districts.
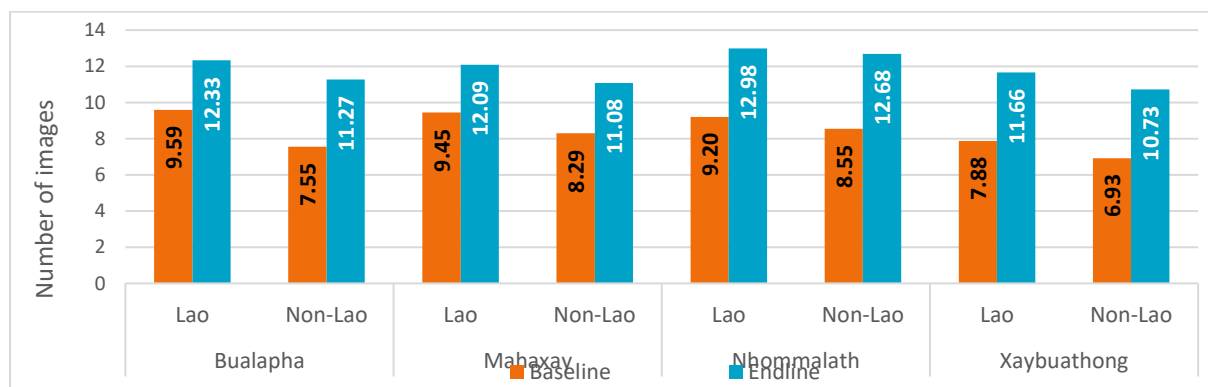

Figure 13: Baseline and Endline Average Receptive Vocabulary Scores by Language Spoken and by District

CONCLUSION

The endline assessment, which employed the Semantic Fluency Test, yielded insightful results. It demonstrated the effectiveness of the School Readiness Camp in enhancing the oral Lao language skills of pre-primary and incoming Grade 1 students within. The improvement was evident as the endline results surpassed the baseline results across all disaggregation groups. These groups included various categories such as sex, language, and district, thereby providing a comprehensive overview of the student population.

In the expressive vocabulary section of the assessment, a significant increase was observed in the number of words spoken by the children within a span of one minute. At the baseline, the children spoke an average of 9 words. By the end of the school readiness camp, this figure had risen to 13 words, indicating a substantial improvement in their expressive vocabulary skills.

The receptive vocabulary (picture-choice) part of the assessment also revealed notable progress. More than half of the children were able to identify more than 11 images within one minute at the endline. This is a marked improvement from the baseline, where the median value is found at 8 words. This progress in the picture-choice task demonstrates an improvement in the receptive language skills of children who participated in the school readiness camp.

In conclusion, the endline assessment results clearly illustrate the positive impact of the school readiness camp on the oral Lao language skills of pre-primary and incoming Grade 1 students. The increase in both expressive and receptive vocabulary skills from baseline to endline across all disaggregation groups is a promising indicator of the camp's success.

Bridging the gap between Lao-speakers and non-Lao speakers
The school readiness camp appears to have played a significant role in narrowing the linguistic divide between Lao-speaking children and non-Lao-speaking children. Initially, Lao-speaking children were observed to have higher baseline results compared to their non-Lao-speaking counterparts. This disparity could be attributed to various factors such as the difference in their linguistic backgrounds, varying exposure to the Lao language, and the level of language proficiency at the start of the camp. However, the endline assessment painted a different picture. The results from both Lao-speaking and non-Lao-speaking children exhibited a remarkable level of congruity. This suggests that the camp appears to be successful in its objective to bridge the initial gap and bring about a more balanced linguistic competence among the children, regardless of their language background.

Interestingly, despite having lower endline results than Lao-speaking children, non-Lao-speaking children showcased higher improvements. This could be seen as a demonstration of their learning capacity and the effectiveness of the camp's teaching methods. In the areas of expressive vocabulary and receptive vocabulary, non-Lao children generally had lower baseline results than Lao-speaking children. This initial disadvantage, however, did not hinder their progress. By the end of the camp, the endline results of non-Lao-speaking children were close to those of Lao-speaking children. This indicates that the non-Lao-speaking children were able to catch up with their Lao-speaking peers in terms of language proficiency. Moreover, the rate of change from the baseline to the endline was higher for the non-Lao-speaking children. This suggests that they

were able to make significant strides in their language skills over the course of the camp. Despite the initial disparities, the camps succeeded in fostering an environment where all children, regardless of their linguistic background, can thrive and improve their language skills.

RECOMMENDATIONS

Photo by Anoutta Vongladsamee/CRS

PROGRAMMATIC

While the school readiness camp has achieved overall positive results in both expressive and receptive vocabulary, it appears there is still room of improvement to adapt further the curriculum to ensure that no child is left behind. Despite a decrease in the figures from the baseline, certain challenges persist. Although of a minute manifestation (1% of the sample), there are children who were not able to speak a Lao word in the expressive vocabulary task or identify images in receptive vocabulary task after the school readiness camp.

This indicates that the camp may need to explore different or additional methods to support these children in their oral language learning. Consequently, this highlights the need for CLVs (for future iterations of the school readiness camp), and primary school teachers as well, to monitor the progress and learning needs of students regularly to allow for targeted support. In addition, challenges in identifying images that can pertain to both nouns and adjectives continue to persist. This highlights a potential gap in teaching skills that could be addressed by providing more effective training to CLVs in year 2024.

METHODOLOGICAL

In response to the limitation mentioned about skills of CLVs in administering the semantic fluency test, CRS should review the design and agenda of the semantic fluency test training with CLVs. CRS should ensure that there is enough time for CLVs to understand the instructions of the tool, the questions being asked, and how to record responses correctly. CRS should ensure that CLVs will have an opportunity to practice administering the test, and if possible, with a pilot group of actual children of the same age group as the target participants, before the actual data baseline data collection.

Ensuring that CLVs are fully equipped with the knowledge and skills in administering the semantic fluency test could also address the limitation related to the delays with endline testing due to the weather. Enabling the CLVs to administer independently may eliminate or at least diminish the need to wait for literacy team to be able to travel to the field to support in conducting the test.

Additionally, CRS should also explore new tools or modules that may help further illustrate the effectiveness of school readiness camps in increasing literacy sub-skill acquisition. A new Receptive and Expressive Language Module (RELM), developed by American Institutes for Research and University of Notre Dame, is anticipated for release in May 2024. CRS Laos should liaise with the PIQA Education team to consider piloting use of this tool in the next round of School Readiness Camps. CRS may also consider consultation with AIR about continued use of the Semantic Fluency Test and take into account any suggested methodological changes.

Photo by Daovady Mahaxay/CRS

Annex 1: The Semantic Fluency Test

Test instructions

1. Give this test to one student at a time. Start with the scene covered up or face down while you explain the directions.
2. Say the following: I am now going to show you a picture with lots of different things in it. When I say "begin," I want you to say out loud as many words as you can think of from the scene or any words that come to mind when looking at the scene. The words do not actually have to be in the scene. Try not to say full sentences or stories, but just try to list words as they come to your mind. You will have 60 seconds to say as many words as you can and you should say these words in Lao. Do you understand what you are supposed to do?
3. Turn the sheet over so the child can see the image and say "begin" while at the same time
4. starting your 60-second timer.
5. Once the test has begun, use a scrap of paper to make a slash for every word the child says. When the 60 seconds are up, tell the child to stop. Add up the number of slashes and record them in the score sheet.
6. Administer this test to all students in Lao.
7. Now say the following: I am now going to say the name of something in this picture and then I want you to point at it. Do you understand what you are supposed to do?
8. Say each of the following words one by one and record how many objects the student can correctly identify in Lao.

   a. Goat
   b. Chicken/rooster
   c. Cow
   d. House
   e. Tree
   f. Broom
   g. Duck
   h. Animal
   i. Window
   j. Green
   k. Square
   l. Sky
   m. Head
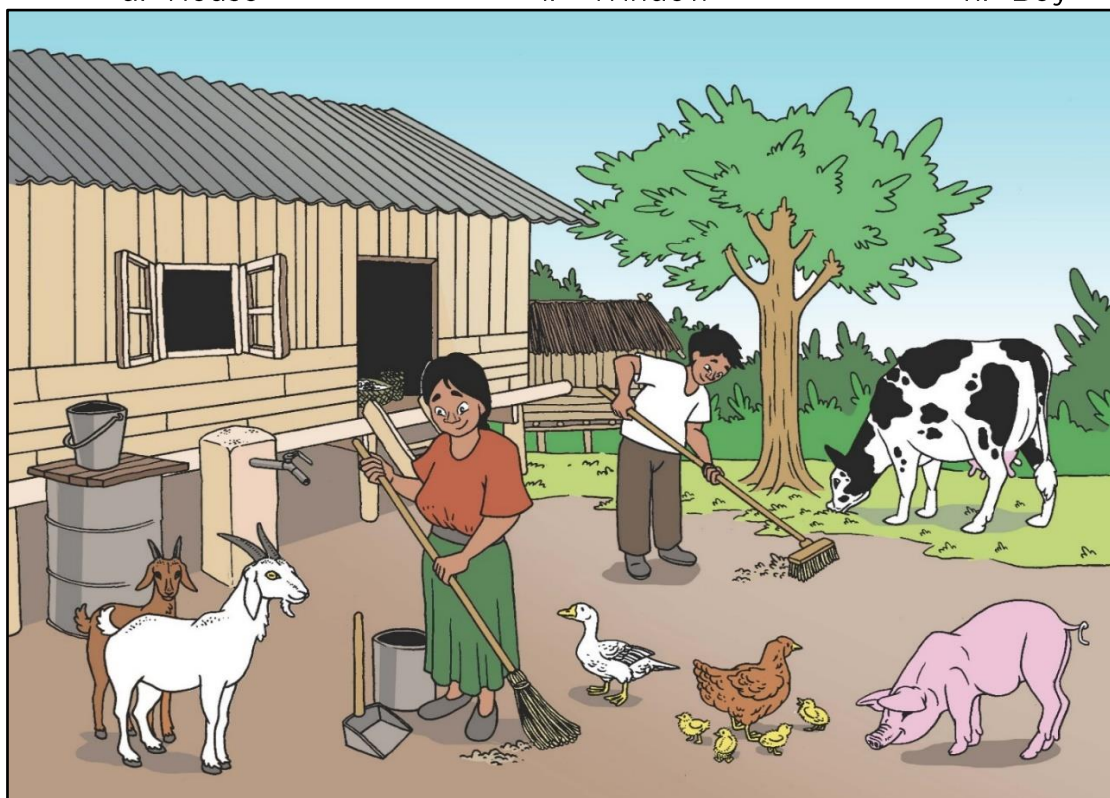   n. Boy

Photo by Anoutta Vongladsamee/CRS

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