



One of the greatest barriers experienced by children who wish to enroll in RTG schools is the language (credit: World Education)

Pathways to a Better Future: A Review of Education for Migrant Children in Thailand



Reading Assessment

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Introduction

Migrants from Myanmar have been present in Thailand in large numbers for many years due to the long-term conflict, poor economy and lack of educational opportunities and jobs in the country. As a result, approximately 2.5 million migrants from Myanmar live in Thailand. The International Labour Organization (ILO) estimates that nearly 377,000 migrant children live in Thailand, approximately 11 percent of all migrants, although, due to their illegal status and lack of registration, the actual number may be much higher.

In order to provide an education for their children, migrant communities have set up migrant learning centers (MLCs), also known simply as learning centers (LCs), run by local educators, volunteers and community based organizations. However, these LCs are not accredited, monitored, or supported by any formal education authority, and, as a result, students receive little or no formal recognition of learning. LCs are also facing a funding crisis as many donors shift their funding priorities across the border in Myanmar. Despite these challenges, education provided in these centers is widely seen to be beneficial to students and communities, as it provides students with an opportunity to learn in their mother-tongue language. For families who plan to return to Myanmar in the future, education that includes Burmese or ethnic language, history and culture is seen as advantageous for the future of their children.

In August 2005, the Royal Thai Government (RTG) adopted an "Education for All" policy, giving all children in Thailand equal access to schooling, regardless of national origin or identity documentation. While implementation of this law has been slow and many regional education authorities and RTG schools have faced challenges implementing it, in the past three to four years the numbers of migrant children enrolling in RTG schools has steadily risen. Whilst some regard this as a positive trend, many challenges and complications still exist. One major challenge encountered by schools and students alike is the barrier between Burmese or ethnic speaking students and their Thai-speaking teachers, not to mention the Thai language curriculum and learning materials. Students and teachers alike cite language to be a major academic barrier for students, and the provision of additional support for students who may struggle in Thai language is still only implemented on a case-by-case basis.

Due to the complexity of the situation, there is a need to review the current needs and educational pathways that are available to migrant students, with a particular emphasis on the accessibility, sustainability, accreditation status, and quality of these options. World Education and Save the Children have therefore conducted research on the migrant education sector in Bangkok and Mae Sot.

As part of this research, in order to gauge the quality of learning, particularly with regard to literacy in language of instruction, a literacy assessment was carried out with students in LCs, as well as RTG schools in Mae Sot and Bangkok where Burmese and Thai are used as the language of instruction respectively.

This assessment was intended to answer the following questions:

1. What is the level of reading skills in the target schools?
2. What is the level of reading skills among students learning in Thai versus those learning in Burmese?
3. Are certain groups of students struggling to master reading skills more so than others?



Schools need resources to purchase reading materials are vital to the development of strong reading skills (credit: WE).

Analysis of Key Issues in the Provision of Education for the Children of Myanmar Migrants in Thailand: Assessing Early Grade Literacy Skills

Key Findings

- Students in learning centers are performing better than those in RTG schools: Most students learning in Burmese in LCs are learning basic reading skills by the age of nine. Students in RTG schools do not perform quite as strongly, but around two thirds of them are able to read a simple text independently, which is encouraging, with schools in Bangkok performing particularly well.
- Comprehension is particularly challenging for students: The area where students generally had the most difficulties was comprehension, which is the ultimate purpose of reading, with students in Mae Sot struggling the most.
- Students learning in a second or third language struggle with reading skills: As is consistent with the theory and evidence on language acquisition, students who are studying in a different language to their first language tend to struggle more. This applies both to non-Thai speakers in RTG schools and to non-Burmese speakers in LCs.
- On average, girls performed better than boys on the reading assessment.
- Exposure to books and reading activities outside of school were found to be related to stronger reading skills.
- Early childhood education in the primary school language of instruction was found to be a significant predictor of reading skills.
- Language preparation and in-school language support seem to result in better reading skills: From the reading monitoring tool, there was no statistically significant relationship found between extra language classes and reading skills. However, the analysis of results by school, coupled with the information from the wider situational analysis research, does point to benefits from language preparation programs and in-school support programs in supporting children to read. The one to two year language preparation and school readiness program in Bangkok seems to be particularly promising in supporting students in Thai schools.
- External factors that decrease focus and attendance seem to negatively impact reading skills: The school by school results and the situation analysis also point to the role of other factors external to the classroom, such as the accessibility of the school and the student's need to work, which cause them to miss school.

Sample

A sample of 354 second grade students was taken from 21 institutions in Mae Sot and Bangkok. Five schools in Bangkok were included (1 LC and 4 RTG schools), along with 16 institutions from Mae Sot (8 LCs and 8 RTG schools). One school in the sample was ungraded, so children aged 9-10 years were targeted for inclusion in the assessment. At each institution, 10 boys and 10 girls were randomly sampled. However, in some there were not 20 students, so all eligible students were included and the final sample has 163 boys and 178 girls. Children were assessed in their language of instruction – either Burmese or Thai.

Methodology

The Save the Children Monitoring Reading tool was applied individually with each of the 354 students. This tool has two main components; the first component contains a series of questions to identify the students' personal, academic and literacy background, the second component is an assessment of the student's reading skills. Four reading skills were assessed- letter recognition, accuracy reading a text, fluency reading a text, and comprehension of the text.

Student Profiles

Burmese students living in Thailand have diverse backgrounds and learning experiences. Table 1 summarizes student background characteristics by city and school type. Due to the small sample size, particularly for students in LCs in Bangkok, tests of significant differences between groups are not shown here, so the discussion in this section is referring only to general trends in the data, not statistically significant differences.

Table 1: Student Background Characteristics by City and Institution

	Average Bangkok LC (N=13)	Average Bangkok RTG school (N=59)	Average Mae Sot LC (N=155)	Average Mae Sot RTG school (N=108)
Grade	NA	2.3	2,1	2,0
Sex (1- Female)	54%	63%	48%	53%
Age	9.3	9.9	9.9	9.8
Speak Thai at home	15%	59%	1%	18%
Speak Burmese at home	62%	49%	70%	66%
Speak Karen at home	0%	3%	26%	22%
Attended prior school	83%	75%	64%	43%
Attended ECD	67%	51%	56%	80%
ECD in Thai	15%	47%	4%	58%
ECD in Burmese	54%	14%	41%	24%
ECD in Karen	0%	0%	11%	0%
Repeated a grade	10%	8%	37%	35%
Have extra Thai lessons	0%	29%	45%	21%
Have extra Burmese lessons	18%	3%	43%	25%
Live with parents	85%	92%	81%	65%
Storybooks at home	23%	53%	31%	51%
Read outside of school	17%	49%	50%	50%
Visit library	31%	56%	45%	65%
Someone at home reads to child	23%	36%	62%	41%
Someone at home seen reading	54%	54%	57%	62%
Someone in community reads to child	17%	27%	64%	37%
More than one room home (BKK)	23%	36%	62%	41%
Share home (BKK)	0%	12%		
Rent home (MST)			59%	55%
Own TV (MST)			66%	84%
Own motorbike (MST)			31%	45%

Home Language

Overall, students in RTG schools in Bangkok are more likely to speak Thai at home (59%) and less likely to speak Burmese (49%) than any other group. Interestingly, about the same proportion of students in LCs in Bangkok and proportion of students in RTG schools in Mae Sot report speaking Thai or Burmese at home (15 and 18% Thai; 62 and 66% Burmese). Children attending LCs in Mae Sot are the least likely to report speaking Thai at home (1%), and most likely to speak Burmese (70%). Finally, about the same proportion of students in both RTG school and LCs in Mae Sot report speaking Karen at home (22 and 26%), where almost no children in Bangkok report speaking Karen at home.

Previous Schooling

On average, the majority of students in Bangkok report having attended a school prior to their current school, but are very unlikely to report having repeated a grade, whereas students in Mae Sot were less likely to report attending a prior school and more likely to have repeated a grade. Children attending RTG schools in Mae Sot were the most likely to report attending an ECD program (80%), and, of those, most attended Thai preschools (58%). The most common type of preschool for students at RTG schools in Bangkok was also Thai (47%), and students attending LCs in Bangkok and Mae Sot predominantly attended Burmese centers (54 and 41%). However, while many children attended preschool

in the language they are currently learning overall 45% attended preschool in a language other than their current language of instruction.

Literacy Environment

Exposure to print and interaction with stories and text is a strong driver of literacy skill development. Children attending in LCs in Mae Sot are the most likely to report someone at home or in the community reading to them outside of school, unlike children in LCs in Bangkok, where only 17% say they are read to outside of school.

Finally, students attending LCs in Bangkok are also the least likely to report having visited a library (31%), followed by students attending LCs in Mae Sot (45%), and then students attending RTG schools in Bangkok (56%) and Mae Sot (65%).

Home Possessions

Children in Bangkok and Mae Sot were asked different questions about the possessions in their homes in an effort to attain information about the relative wealth of families in the study. Slightly more children in RTG schools in Bangkok report sharing a home compared to children in LCs in Bangkok but no large differences are apparent in the data. In Mae Sot, children in RTG schools are more likely to own a TV or a motorbike than children in LCs, suggesting their families may have more resources than children in LCs.

Reading Skill Profile

Figure 1 displays average skill scores for students attending LCs in Mae Sot. On average, 83% of students could read a simple Burmese text independently, meaning that they were able to read at least ten words a minute accurately. We next turn to consider children's background characteristics and ask whether there are relationships between skills and different groups that have implications for program planning and implementation.

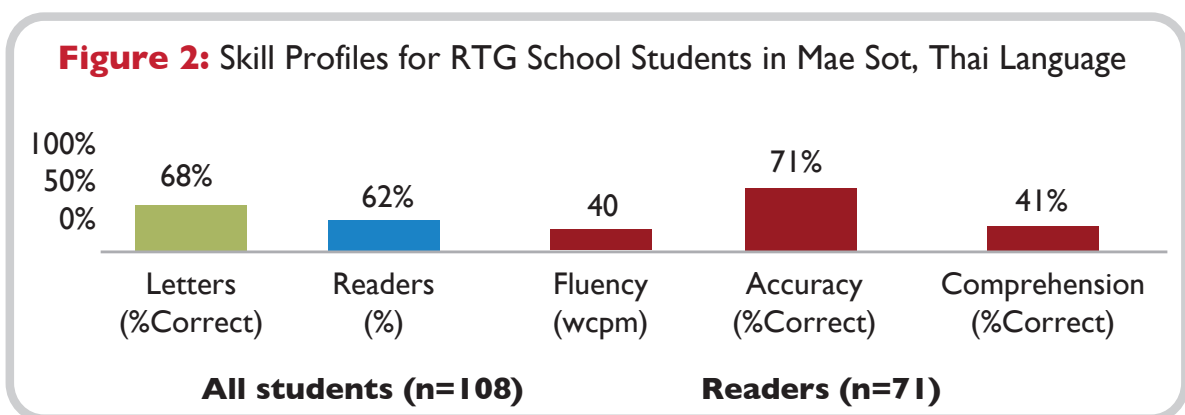
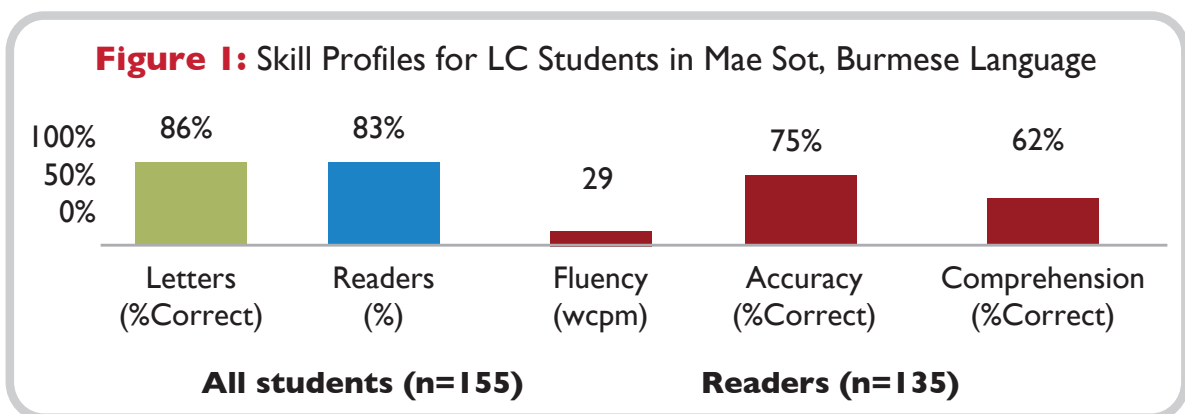


Figure 2 displays average skill scores for students attending RTG schools in Mae Sot. On average, 62% of students could read a simple Thai text independently.

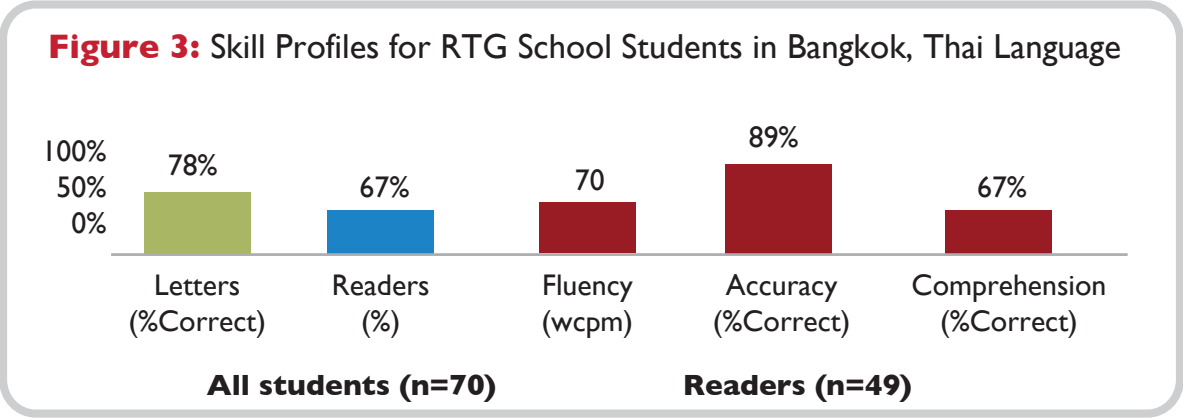


Figure 3 displays average skill scores for students attending RTG schools in Bangkok. On average, 67% of students could read a simple Thai text independently.

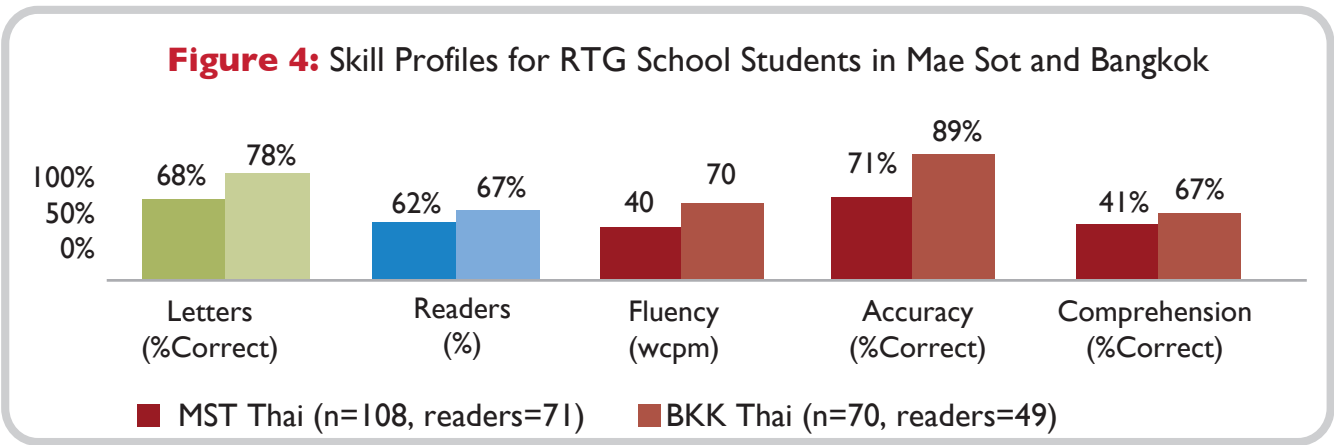


Figure 4 combines Figures 2 and 3 to display average skill scores for children attending RTG schools in Mae Sot and Bangkok. On average, a slightly higher proportion of children can read independently in Bangkok and children who are independent readers in Bangkok tend to have stronger higher order skills than independent readers in Mae Sot.

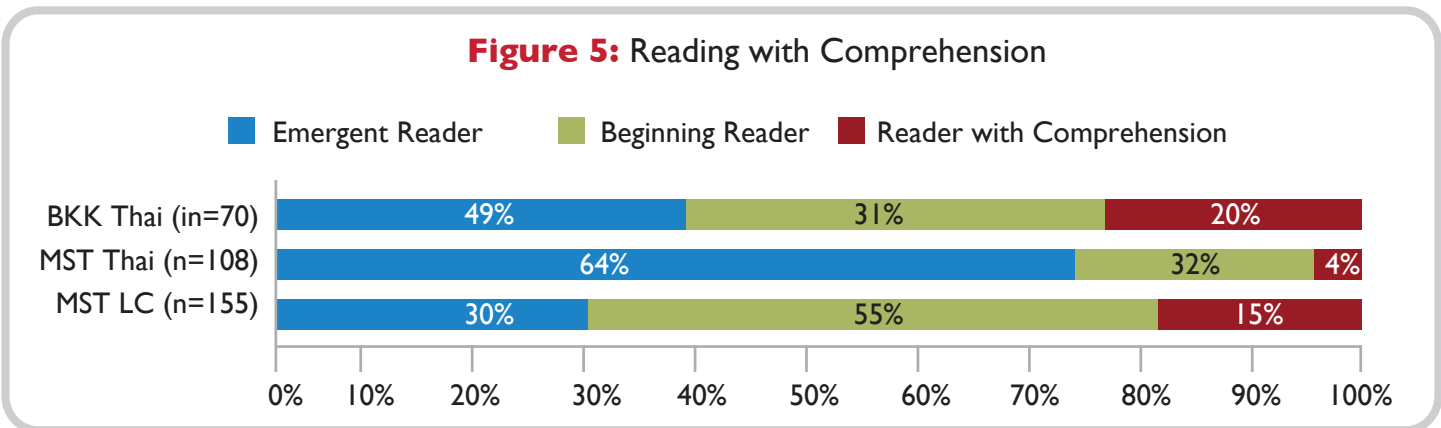


Figure 5 displays the percent of all children who are in emergent reader, beginner reader and reading with comprehension categories, by location and assessment language. Emergent readers are those who answered 2 or fewer comprehension questions correctly; beginning readers answered 3 or 4 questions correctly, and children reading with comprehension answered all 5 comprehension questions correctly. This again shows that while in Mae Sot LCs there is a higher proportion of students who are at least beginner readers, there is a higher proportion of students in RTG schools in Bangkok who are readers with comprehension.

Equity and Reading Skills

This section summarizes the background information collected about the children's lives and considers whether and how these characteristics are related to their current skills status. This can offer insight into effective program targeting for specific groups of struggling learners. The categories of background information are: general background, educational experience, home language and literacy environment, and socioeconomic status.

Gender

Figure 6: Average Skill Score for RTG School Learners, by Gender

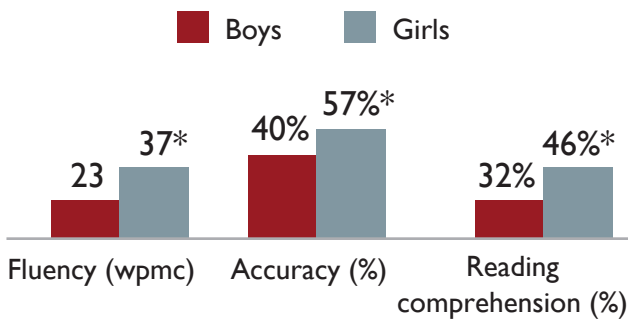


Figure 6 displays that, on average, girls in RTG schools tend to have more advanced literacy skills than boys in Thai. No differences were found between the skills of boys and girls in LCs, but this could be due, in part, to the small sample size in the study.

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Educational Experience

Burmese children living in Thailand have a wide variety of educational experiences that they bring to primary school. Investigating the impact of prior schooling on literacy skills, we find that children in LCs who report attending an ECD program in the language of assessment tend to have stronger skills than children who did not attend an ECD program. Further, children who report attending an ECD program in a language other than the assessment language tend to have weaker literacy skills. Specifically, children who were assessed in Burmese and who attended a Burmese ECD program have significantly stronger fluency and comprehension skills, whereas children who were assessed in Burmese and who attended Thai ECD programs had significantly weaker fluency and reading comprehension skills than children who did not (Figure 7). A similar relationship was found with reading comprehension tiers for children in RTG schools but a trend was not apparent across the majority of skills.

Figure 7: Burmese Fluency (wpmc), by EDC Experience



Looking at other forms of schooling, attending extra Thai or Burmese lessons was not predictive of literacy skills, nor was attending a school prior to the current institution. This does not mean that there is no relationship between prior schooling or extra lessons and learning, just that no clear relationship was found in this data. This may be due to students having difficulties understanding the question on extra language classes.

On the other hand, it is important to note that there is other evidence to suggest that preparation and support programs may help students in RTG schools to read better. The vast majority of students attending RTG schools in Bangkok had been through a 1-2 year Thai language and school readiness program, which may partly explain why they performed better than students in RTG schools in Mae Sot. Furthermore, the better performing RTG schools in Mae Sot also offer some form of additional language support for migrant students, this is discussed in more detail in the section below on school by school results. Further investigation into the role and quality of language preparation and support programs could be informative.

Home Language

The literacy environments facing Burmese children in Thailand are complex. Some children are living and learning in the same language while others speak one language at home and another in school. Table 11 displays the proportion of independent readers by home language. If a child reported speaking multiple languages at home, they were included in multiple categories. As noted earlier, there is a relationship between the language spoken at home and the schools children are enrolled in so families of children in different types of schools and in different cities are likely quite different. Therefore, this table is purely descriptive and no statistical testing was performed. However, this information is displayed in an attempt to gain a better understanding of the children enrolled in different schools and who may be struggling the most.

Table 2 shows that in Mae Sot children who report speaking Burmese at home are more likely to be independent Burmese readers, compared to children who speak Karen at home, and there are almost no children who report speaking Thai at home who are enrolled in LCs. Children who speak Thai at home in Mae Sot tend to be enrolled in RTG schools and are more likely to be independent Thai readers compared to Burmese speaking children in RTG schools. Interestingly, children who speak Karen at home are nearly as likely as those speaking Thai at home to be independent Thai readers. In Bangkok, children who speak Thai at home are much more likely to be independent Thai readers than those not speaking Thai at home. These trends are generally consistent with the wide body of theory and evidence pointing to the fact that children learn to read better and more quickly when they receive instruction and materials in their home language.

Home Literacy Environment

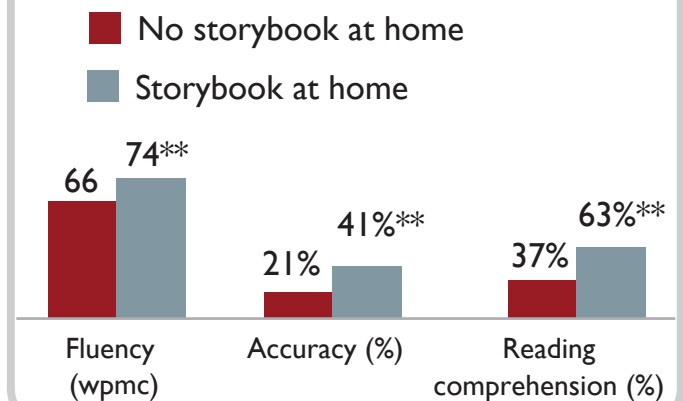
Print and reading activities can have a powerful effect on children’s reading skills development. This study finds that children who were assessed in Thai and had storybooks at home tended to have significantly higher literacy skills than those who did not have a book at home (Figure 8). In addition, children in RTG schools who had strong community literacy environments (i.e., reading outside school, visiting a library, having someone in the community who read to them) had significantly stronger letter identification, accuracy, and reading comprehension skills (Figure 9).

Having storybooks at home was not found to be a significant predictor of literacy skills for Burmese children in LCs but having someone in the community who read to them did predict significantly higher fluency, accuracy and reading comprehension tiers.

Table 2: Average Proportion of Readers, by Home Language

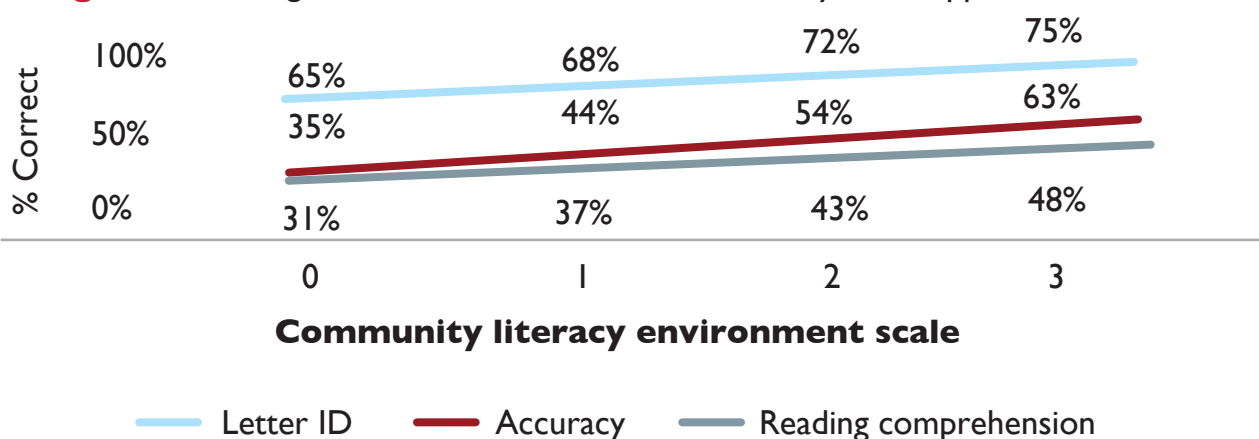
City	% Reader	Home language					
		Burmese	N	Karen	N	Thai	N
Mae Sot	Burmese	88%	108	70%	40	NA	2
Mae Sot	Thai	59%	71	71%	24	74%	19
Bangkok	Thai	62%	37	NA	3	84%	37

Figure 8: Average Skill Score for RTG School Students, by Reading Material at Home



Note: *p < .05, **p < .01, ***p < .001

Figure 9: Average Scores for RTG School Students, by CLE Support



Equity Conclusions

In this section, gender, early childhood education experience in the language of instruction, instruction in the home language, and exposure to print and literacy activities outside school were found to be traits or activities related to reading skills. All analyses used variables of interest as predictors of reading skills and controlled for city only (in the case of RTG schools) due to the small size of the dataset. These relationships are not causal – they do not indicate that, for example, having a storybook at home in this context causes a higher fluency score – these observations simply point to who are among the more and less successful readers at this point in time. Conversely, they reveal who might be in need of more assistance. The group who appears to be most in need of support are boys and those who have less exposure to print or reading activities outside of school. There was no statistically significant relationship found between prior education experience or extra language classes and reading skills.

However, the school-by-school analysis and evidence from the situation analysis, presented in the following section, does suggest that preparation and support programs may be beneficial for children’s reading, and this is an area for further investigation.

School by School Results and Situation Analysis

Looking further into the literacy assessment results, we find that children’s average literacy skills vary quite a bit school by school. Figures 10 and 11 display the variation in the proportion of readers and overall reading comprehension for RTG schools and LCs in Mae Sot.

Within RTG schools in Mae Sot, we see that the proportion of readers per school ranges from 44% to 90%, while the proportion of reading comprehension questions answered correctly only ranges from 23 to 46%. In addition, there does not appear to be a strong relationship between the proportion of independent readers in a school and overall reading comprehension scores. That is, average reading comprehension scores do not increase with the proportion of readers in a school.

This data suggests that there is a wider range in Burmese’s children’s Thai literacy abilities compared to their literacy skills in Burmese, and many are still struggling with higher-level skills like comprehension.

An analysis of these scores alongside student profile information and data collected during the situational analysis reveals some interesting relationships between student background, learning environment and literacy. These relationships are presented in an attempt to compliment statistical findings from this assessment, and, in other cases, to present interesting findings that, while not statistically proven, may be relevant for future programming.

Most striking in RTG schools, is the fact that four of the five schools with the highest proportion of readers provided some form of additional Thai language support, whether it be in the form of after school classes, one on one tutoring, or additional resources and homework for students to practice with. Interestingly, the school with the largest proportion of readers did not provide support of this kind, but they do participate in the School within School program, wherein students study the Thai curriculum with a Thai national teacher in their LC before transferring into the partner RTG school in grade two. While no statistical evidence was gathered to investigate this relationship, it can be inferred that increased exposure and additional support in the language of instruction, whether before or during entry into RTG school, may well have a positive impact on the literacy levels of students, particularly those learning in a second language.

Furthermore, half of the four schools with the highest proportion of readers provided targeted support to students at younger grades by providing bilingual language and teaching assistants in the classroom who can speak Thai as well as the students’ mother tongue language. In some cases this was Burmese and in others it was Karen. This support seems to not only improve reading skills, but also higher-level skills like comprehension. Once again, while these relationships are not statistically proven, the data does seem to show a positive relationship between bilingual support in the classroom, particularly at lower grade levels, and second language acquisition.

Figure 10: Average Proportion of Readers and Reading Comprehension for RTG Schools in Mae Sot, by School

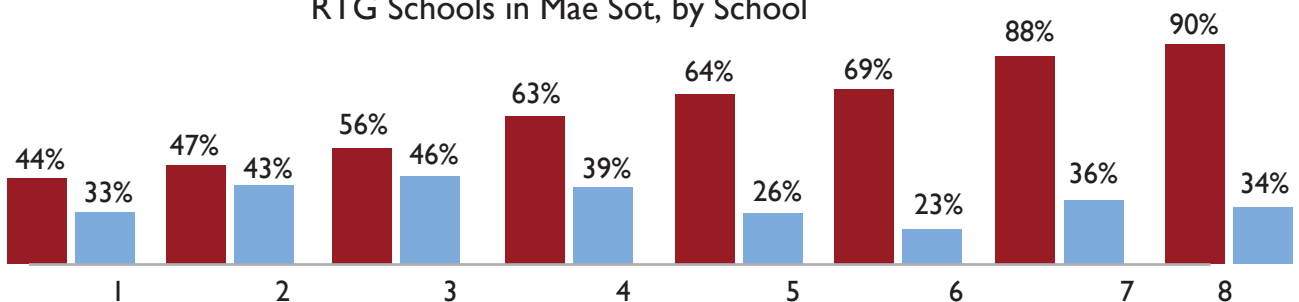
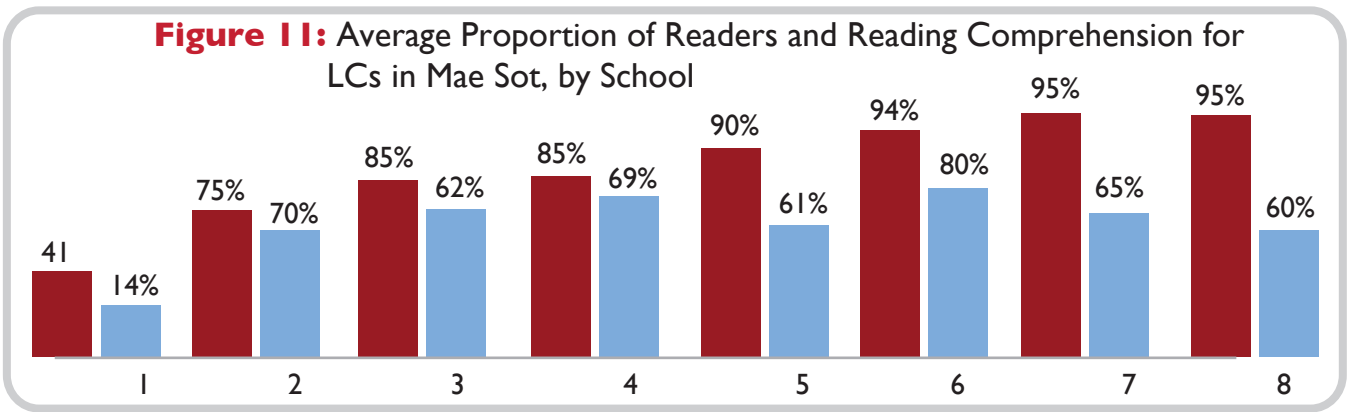


Figure 11: Average Proportion of Readers and Reading Comprehension for LCs in Mae Sot, by School



Interestingly, three of the eight sampled schools are providing Burmese language classes to students. In the case of School 5, where 95% of the student body is Burmese, these classes are taken not only by Burmese students, but also by Thai students, helping to increase bilingualism among all students in the school and increase the level of support that peers can offer one another in the language acquisition process. While no visible trends exist to indicate that these classes help to improve literacy, they do seem to be prevalent among schools with high levels of support for students, both academically and socially, which fosters greater integration and academic success. The relationship between support for social integration and literacy can also be seen with School 7, which not only provides additional Thai classes for migrant students and language training for teachers, but has also trained three individuals to be migrant student support staff. It seems that forms of social support like this have a positive impact on students and their overall success in school.

The results from the students in RTG schools in Bangkok also seem to suggest that support and preparation programs can be beneficial. As outlined in detail above in the analysis of the assessment results, the students in RTG schools in Bangkok performed better than students in RTG schools in Mae Sot, and in fact their comprehension skills were the strongest of all the students in the assessment. The situational analysis found that the overwhelming majority of these students in Bangkok had attended a Thai language and school readiness program for a minimum of one year and, in some cases, two years. This program, implemented by a local organization specializing in preparing migrant students for integration into schools, may be a contributing factor to students in RTG schools in Bangkok outperforming students in schools in Mae Sot.

Thus, with a school by school analysis, possible relationships can be identified between literacy and additional language support and exposure, bilingual teaching and language assistance at younger grades, and support for social integration in the school community.

A wide range in the proportion of readers and average reading comprehension per school can also be seen in

LCs in Mae Sot. The proportion of independent readers per school ranges from 41 to 95% and the average reading comprehension scores range from 14% to 80% correct. However, when one school that appears to be an outlier, School 1, is removed, the range of reader and reading comprehension reduces to 75 to 95% readers and 60 to 80% comprehension, a smaller skill range than is seen in RTG schools. Similar to the schools, we do not see a linear relationship between the proportion of individual readers in a school and the overall reading comprehension.

In general, the majority of children who were attending LCs can read independently in Burmese and understand text at a higher level than their peers in RTG schools in Mae Sot. This is consistent with the finding outlined above that students learning in their home language performed better, and with the theory on evidence on mother tongue based education. This again underlies the need for support and preparation for children who will be learning in their second language.

The importance of mother tongue language comes into play in the LC context as well, as indicated by the results displayed in Figure 43. The two schools with the lowest proportion of independent readers are schools where Karen is the most common mother tongue language of students. Not only that, but directors and teachers in both of these LCs reported that language was one of the major challenges experienced by students, and that difficulties with language often led to lower academic performance, decreased motivation and student drop out. Thus, the issue of students struggling when learning in a second language is not only relevant in RTG schools, but also in LCs in multi-ethnic areas where students' first language may not be Burmese.

Another factor that was identified by the situational analysis which may have an influence on reading skills was students' personal circumstances. While the learning environment plays an important role in students' academic performance, each of the four schools with the lowest proportion of independent readers reported external issues and their impact on academic success. One of the major issues was accessibility and attendance at school, with schools reporting that students often had to leave school for periods of time to work, which disrupted their learning, resulting in decreased academic

performance. In three of these schools, a significant proportion of the sampled students were above the typical age for their grade level, indicating that they had taken breaks in their education or repeated grades. A lack of student motivation, an interest to earn money rather than attend school, limited encouragement from parents to study and economic barriers were also cited as having impacts on students' academic performance by these LCs. When all of these factors are considered alongside the results of these LCs, it can be inferred that external forces may well also have an impact on students' academic success and can thus influence literacy rates among students.

Recommendations for Literacy

- **Programs to promote access to books and reading activities outside of school are needed:** The assessment finds that these two factors appear important in supporting children's literacy. The RTG, schools, NGOs, and other stakeholders working to promote education quality, should therefore consider programs such as community libraries and book banks, parent and community reading activities, or reading buddy systems which promote children's access to books and support reading outside of school. There appears to be a particular lack of books in Burmese (and Karen) for students attending LCs and this should be a priority. Given the lower performance of boys the programs should also make specific efforts to ensure boys also receive support outside of school.

- **Programs to support children's second language skills should be developed and scaled up:** While around two thirds of migrant children in RTG schools are able to read a basic text, this means that there is still a significant proportion of children who are struggling to read. Karen children attending Burmese LCs are also finding it more difficult to read. This confirms that children studying in a second language require additional support. More investigation is required to understand what type of support is most effective. Some options are second language and school readiness preparation programs and bilingual teaching assistants. The Bangkok RTG school preparation program may be a model to further investigate for scale-up. For students who are not ready to study in Thai, LCs could introduce a MTB-MLE program. This would allow students to gradually transition from their home language to Thai language education programs so they are ready to attend a RTG school or Thai NFE.

- **Scale-up ECD programs to support strong literacy skills:** The importance of ECD programs for children's learning and development is well known, and the assessment confirms that ECD programs, particularly those in the language of instruction of primary education, are helping students to develop stronger reading skills. The RTG, LCs, and NGOs should scale-up efforts to ensure migrant children

have access to quality ECD programs in the language of primary school. There are programs already existing in Bangkok and Mae Sot that can provide a reference point for scale-up.

- **Reading comprehension should be promoted:** Lower scores in reading comprehension often relate to instruction and indicate that children are not being effectively taught to read for understanding and meaning. The RTG, schools and organizations working on teacher training should therefore make efforts to ensure that teachers know how to teach children to read, with special focus being paid to teaching reading and writing for meaning and communication. Community based programs which include book sharing should also ensure that those who are sharing books with children emphasize enjoyment, meaning and communication which are the ultimate purposes of reading.



Children learning in their mother tongue language displayed stronger reading skills than their peers learning in the Thai language (credit: WE).

APPENDICES

Appendix A

In order to ensure that data collectors agreed on recording measures and to test inter-rater reliability, two children at each school were jointly assessed with one enumerator leading the administration and one listening and marking scores. Long one-way analysis of variance (ANOVA) calculated the intra-class correlation within pairs of assessors for a measure of reliability. Table I presents the results below. Using Fleiss' benchmarks for excellent ($ICC > 0.75$), good or fair ($0.75 \geq ICC > 0.4$), and poor ($0.4 \geq ICC$).

Table AI. Reliability, Thai Language Assessment

	N	Intra-class correlatio
Letters	196	0.98
Fluency	202	0.99
Accuracy	201	0.99
Comprehension	202	0.98

Of the 202 children participating in the Thai language assessment, 21 (10.3%) were selected for inter-rater reliability testing, and the inter-rater reliability for the Thai language assessment is excellent. There were not enough paired observations to calculate intra-class correlations for the Burmese language assessment.

However, while only one language of assessment was tested, information about the scoring of this assessment suggests that the assessment was administered in a consistent manner.

¹. Fleiss JL. The Design and Analysis of Clinical Experiments. New York, NY: John Wiley & Sons Inc; 1986.

Appendix B

Table B1. Detailed Literacy Assessment Scores

		Average BKK LC (N=13)	Average BKK RTG school (N=59)	Average MST LC (N=155)	Average MST RTG school (N=108)
Thai	Letter ID	30.54	48.46		40.75
	Letter ID (%)	0%	82%		68%
	% Reader	0.00	81%		62%
	Fluency	0%	58.47		26.31
	Accuracy	0%	75%		47%
	Reading comprehension #1	0%	51%		16%
	Reading comprehension #2	0%	75%		60%
	Reading comprehension #3	0%	37%		21%
	Reading comprehension #4	0%	64%		33%
	Reading comprehension #5	0	80%		53%
	Reading comprehension total	0	3.07		1.81
	Reading comprehension total (%)	0.00	61%		36%
	Reading with comprehension tier	0.00	0.83		0.40
Thai Readers only (N=49 in BBK; 71 in MST)	Fluency	0.00	71.60		42.12
	Accuracy	0%	91%		75%
	Reading comprehension total	0.00	3.44		2.18
	Reading comprehension total (%)	0%	69%		44%
Burmese	Letter ID			28.45	
	Letter ID (%)			86%	
	% Reader			83%	
	Fluency			25.18	
	Accuracy			68%	
	Reading comprehension #1			86%	
	Reading comprehension #2			27%	
	Reading comprehension #3			52%	
	Reading comprehension #4			61%	
	Reading comprehension #5			79%	
	Reading comprehension total			3.04	
Reading comprehension total (%)			61%		
Burmese Readers only (N=135)	Reading with comprehension tier			0.85	
	Fluency			29.81	
	Accuracy			79%	
	Reading comprehension total			3.26	
	Reading comprehension total (%)			65%	



Letter recognition is a key component of literacy skill development (credit: WE).

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