Cambodia

Education Survey Results

February 2020

Table of Contents

LIST OF ACRONYMS

CFCT – Child Focused Community Transformation

CLA – Citizen-Led Assessment

FH – Food for the Hungry

HH – Households

IDELA -International Development Learning Assessment

ODK – Open Data Kit

PPS – Population Proportion to Sample Size

Executive Summary

FH Cambodia conducted education assessments in September 2018 and in August 2019 with 2 419 caregiver respondents, 1 390 children 3.5-6.5 years of age for International Development Learning Assessment (IDELA) survey and 1 430 children for Citizen-Led Assessment. This survey covered eight clusters (Bakk Anloung, Trapeang Prasat C, Trapeang Prasat D, and Trapeang Prasat E in Trapeang Prasat District, Oddar Meanchey Province; and Boeng Mealea, Kantuot, Svay Leu, and Ta Siem in Svay Leu District, Siem Reap Province). The purpose of the survey was to establish a benchmark for effective project planning, implementation, and to identify the priorities of the education project with regards to issues identified in these clusters.

The key findings of this baseline result in terms of school preparedness were the total IDELA score of children 5.6-6.5 years of age was 48.7%, and only 6% of them have mastered IDELA skills who achieved 75% or more in the different domains: emergent literacy, emergent numeracy, social-emotional and motor skills. The domain with the highest average score was motor skills followed by Emergent Numeracy, Socio-emotional, then Emergent Literacy. Emergent literacy had been consistently the lowest from children 3.5-6.5 years of age. In the cross tabulation analysis of caregivers' support at home having at least one children's book, it is clearly visible that as the number of books has increased, so does the IDELA score of children 5.5-6.5 years of age, and support that caregivers provide with their children is engaged in learning activities with children. The findings showed that it is evident that for children 5.5-6.5 years of age whose caregiver who is not involved in any learning activity.

For early grade success, the survey showed that there were only 1.6% of nine-year-old children who were able to achieve the national grade level standards in both third grade literacy and numeracy skills. When disaggregated by gender, the girls have 11.9% higher percentage than boys. In cluster level, the result in literacy skill varied considerably from 3.8% in Ta Siem to 23.5% in Trapeang Prasat-E; in numeracy, only three clusters have attained percentage from 3.2% in Trapeang Prasat D, 5,6% in Trapeang Prasat-C, and 5.9% in Trapeang Prasat-E. Same children from these three clusters attained both numeracy and literacy standards. Among the seven interventions, when compared to other interventions, on time entry in grade 1 has the greatest impact, next were children engaged in out of school learning activities and caregivers are engaged in learning activities with their children,

As part of our program pivot, education is one of the sectors we identified to be our focus. We will use this result to reflection on which of the current interventions we have will still holds true and which of these we need to think more taking into consideration the interventions which will highly impact the achievement of our big goal of seeing the children reach their God-given potential through targeted early child interventions in the first nine years of life that will bring holistic development and cognitive gains for lifelong success.

1. Introduction

1.1. Background

Cambodia's education indicators are among the lowest in Asia. The rate of school enrollment for lower secondary is 34 percent and for upper secondary is only 21 percent (USAID). Due to high rates of poverty in the rural areas, the education system is of poor quality. There is an insufficient number of classrooms and teachers, and school dropout rates in Cambodia remain high at the primary school (8.7 percent) and lower secondary school (19.6 percent) levels.

The current education system comprises primary (grades 1–6), lower secondary (grades 7–9), and upper secondary (grades 10–12). Basic education is defined as grades 1–9. Entry to upper secondary level is regulated by a national examination at the end of grade 9. Technical and vocational education programs run parallel to upper secondary programs and are the responsibility of the Ministry of Labor and Vocational Training.

The quality and relevance of the education currently provided in Cambodia is generally poor, due in part to the fact that many teachers lack basic content knowledge and pedagogical skills. Additionally, official teaching hours in Cambodia are 684-760 hours in a school year, a figure significantly lower than the international recommendation of 850-1000 hours per academic year. The quality of education in Cambodia is further undermined by the informal loss of teaching hours: on average in 2013, 27% of teaching hours (50.5 days) were lost due to additional official school holidays, teacher absence, and shortened teaching sessions.

The results reverberate through the population. Only 30% of children aged 3-5 are developmentally on track in literacy and numeracy[1]. In a national Early Grade Reading Assessment (EGRA) in 2010, two-thirds of grade 1 students could not read a single familiar word and almost half of grade 2 students similarly were unable to read any familiar words. A national grade 6 assessment in 2015 showed just 45.7% of students passed Khmer and 43.4% passed mathematics.

FH Cambodia's approach to development is holistic, integrated and a multi-sectoral which equip and empower community leaders to facilitate transformative solutions to address issues surrounding their own communities, which can be sustained by the communities itself, will enhance the skills and will highly encourage active engagement of children, youth and households. Health, Livelihood (Savings and Agriculture), Risk and Resilience, and Education.

In Education, FH/Cambodia partners with caregivers, teachers and the community to support their children throughout their education. FH programs support a holistic, integrated approach, promoting evidence-based

[1] MOEYS (2016). Early Childhood Education. Available at http://www.moeys.gov.kh/en/early-childhood-education.html#.X0Xgf8gzbIV

interventions that improve child learning. FH works in partnership with the Ministry of Education at the Provincial and District Level in providing teacher training in evidence-based teaching practices in numeracy and literacy in both in preschool and in primary schools. FH advocates with community leaders to influence local agencies to allot a budget for establishment of community preschools, building a space for learning for children's clubs and establishing community libraries accessible to both caregivers and children. FH implements cascade groups at the community level to engage caregivers in early childhood stimulation and school readiness activities. Working through community volunteers in bi- monthly meetings, caregivers practice child stimulation and emerging literacy and numeracy with children in the first five years of life. In addition, FH works with caregivers and parents to decrease and mitigate toxic stress, which hinders development. There are 974 Caregiver Volunteers engaged in the training on early childhood stimulation and school readiness activities. However, this approach in education was fully rolled-out in the program in the beginning of fiscal year 2017

1.2. Purpose of the Survey

The purpose of these two baseline surveys was to establish a benchmark for effective project planning, implementation, and to identify the priorities of the education project with regards to issues identified in these clusters.

1. To measure the baseline status for the CFCT program indicators including the global key performance indicators related to the education sector.
2. To establish benchmarks for effective project planning and implementation, as well as form the basis for the progressive monitoring of the achievement of the planned outputs and results, through the collection of quantitative data.

1.3. Research Questions

Home Environment

1. Is there a difference in scores for children in HH where the child has three or more children's books? Explain.
2. Is there a difference in scores when caregivers engage in regular learning activities?
3. How does pre-school attendance affect whether the child is able to pass third grade literacy and numeracy standards?
4. How does caregiver knowledge of grade requirements affect child performance?
5. How do caregiver practices affect the ability of a child to pass grade three standards?
6. How do dropout and grade repetition affect ability to pass the assessment?
7. How does on-time entry into grade 1 affect ability to pass the assessment?

International Development and Early Learning Assessment (IDELA)

1. Do children have the skills to successfully transition into grade 1?
2. What is the relationship between gender and child development scores?
3. Are children making appropriate development gains from year to year?

4. Which domain is the furthest behind?

5. How do the results differ by clusters or region?

Citizen Led Assessment (CLA)

1. Are children, age 9*, able to perform third grade reading and literacy standards?
2. How is the child's gender associated with learning outcomes?
3. Are children making appropriate literacy and numeracy gains from ages from grades 1-3?
4. Are children making appropriate literacy and numeracy gains from grades 4-8?
5. How does child learning outcomes differ by cluster or region?
6. How do out-of-school activities increase ability to pass the assessment?
7. How does a supporting reading environment increase ability to pass the assessment?

1.4. Survey Objectives

The survey covered areas where FH Cambodia is currently implementing the integrated projects, including interventions on education, specifically in Tropeang Prasat Region, Otdar Meanchey Province covering 4 clusters (Bakk Anloung, Tropeang Prasat C, D and E) and Svay Leu Region, Siem Reap Province covering another 4 clusters (Boeng Mealea, Svay Leu, Kantuot and Ta Siem).

The two baseline surveys were conducted under the coordination of the FH Cambodia Program Director (Programs Quality/M&E Coordinator) which covered the education survey only for 4 clusters in 2018 (Bakk Anloung, Trapeang Prasat C, Trapeang Prasat D, and Trapeang Prasat E clusters) and 4 clusters in 2019 (Boeng Mealea, Kantuot, Svay Leu and Ta Siem Clusters). Data collection was conducted digitally through the Open Data Kit (ODK) software and the targeted respondents to the questionnaire were households with caregivers of children 3.5 to 15 years of age. Additional tools were used i.e. IDELA for assessing children 3.5 to 6.5 years and CLA for children 7 to 15 years.

IDELA includes five domains which focus on;

- Gross and fine motor skills (hopping, copying a shape, drawing a human figure, folding a paper).
- Emergent literacy (oral comprehension, letter identification, emergent writing, expressive vocabulary, and phonemic awareness).
- Emergent numeracy (size/length identification, sorting, number identification, shape identification, simple operations, puzzle, one-one correspondence).
- Socio-emotional development (personal information, friends, recognizing emotions in self and others and conflict resolution) and approaches to learning.

CLA includes

- Find out what the child can comfortably answer to do grade level (usually 3rd grade level) reading of words, sentences and paragraphs; and arithmetic skills.
- Assess the reading environment in the home.

- Assess the out-of-school learning activities that are available in the community (children's clubs, tutorials) and the frequency of participation in out-of-school activities.

Caregiver Assessment includes:

- Determine how the behavior of the individual caregiver in the home is associated with their children's performance on the Citizen Led Assessment and the International Development and Early Learning Assessment.

1.5 IDELA, CLA and Caregivers' Assessment

All households selected responded to the caregivers' tool, and children in these households responded to either IDELA or CLA or both depending on their age group. Children from the selected HHs from 7-15 years of age participated in the CLA, and children between 3.5 to 6.5 years participated in the IDELA. Achieved responses were as in table 1.2 below.

Table 1.2: Achieved sampled population.

Cluster	Respondents to Caregivers' Tool	Respondents to IDELA Tool	Respondents to CLA Tool
Bakk Anloung	272	202	128
Trapeang Prasat C	318	225	153
Trapeang Prasat D	343	256	177
Trapeang Prasat E	292	233	128
Boeng Mealea	295	125	212
Kantuot	299	116	215
Svay Leu	289	102	198
Ta Siem	311	131	219
Total	**2416**	**1390**	**1430**

2. Caregiver Survey Results

This section presents key findings of the study about the home environment, IDELA and CLA results.

2.1. Availability of children's books in the home

Survey results found that an average of 85.74% of all the households do not have children's books available at home for children 0-2 years. This finding further shows that the clusters with the lowest percentage were Bakk Anloung, Svay Leu and Trapeang Prasat E respectively (95.6%, 92.1%, 91.7%) (Table 2.1.1). As shown in figure 2.1.1, only 5.8% of households have three or more children's books at home for children 0-2 years.

Figure 2.1.1: Children's books available at home for 0-2 years old child years

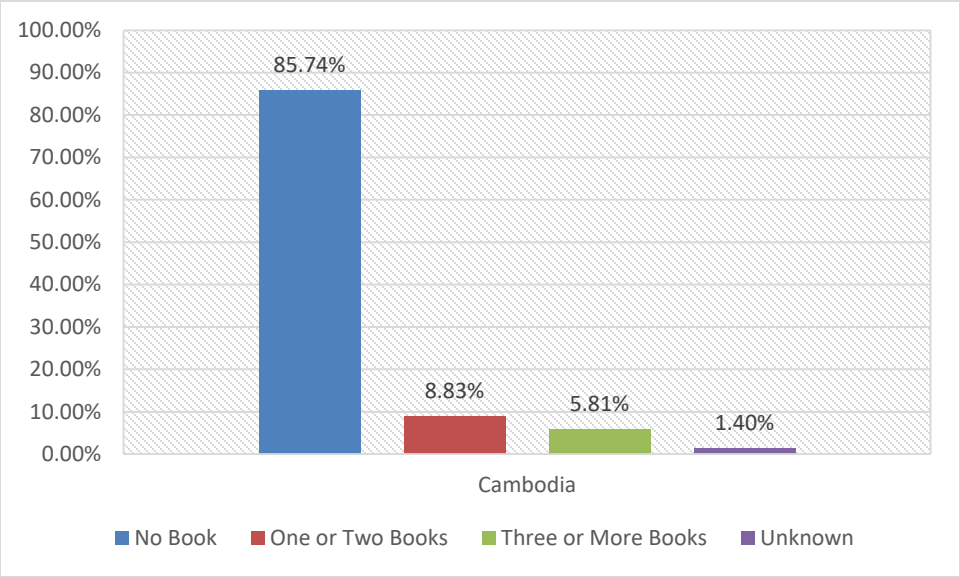


Table 2.1.1: Children's books available at home for 0-2 years old child per Cluster

No. of books available	Bakk Anloung	Trapeang Prasat C	Trapeang Prasat D	Trapeang Prasat E	Boeng Mealea	Kantuot	Svay Leu	Ta Siem	Cambodia
No Book	95.6%	86.1%	85.6%	91.7%	86.2%	68.3%	92.1%	80.3%	**85.74%**
One or Two Books	4.4%	7.9%	10%	5%	8.5%	21.8%	5.3%	7.7%	**8.83%**
Three or More Books	0%	5.9%	3.3%	1.7%	5.3%	9.9%	2.6%	12%	**5.81%**
Unknown/Blank	0%	0%	1.1%	1.7%	0%	0%	0%	0%	**1.40%**

The baseline value was slightly higher for caregivers of children 3-6 years old with three or more children's books in the home. However, more than half of the households still do not have any single book for children in this age group as highlighted in figure 2.1.2 and table 2.1.2. The improvement could be attributed to a possibility of some of the children attending early child development centers.

Figure 2.1.1: Children's books available at home for 3-6 years old child

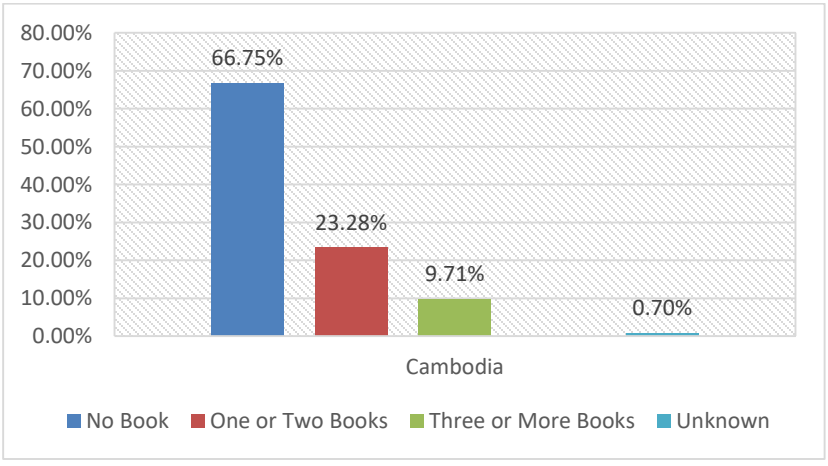


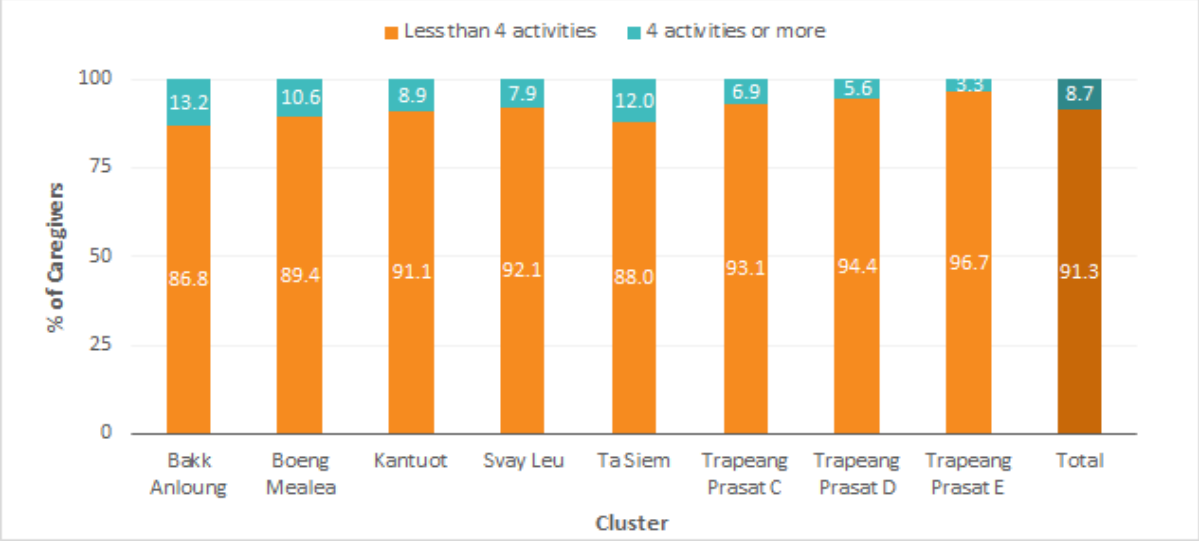
Table 2.1.1: Children's books available at home for 3-6 years old child years per Cluster

No. of books available	Bakk Anloung	Trapeang Prasat C	Trapeang Prasat D	Trapeang Prasat E	Boeng Mealea	Kantuot	Svay Leu	Ta Siem	Cambodia
No Book	71.2%	57.5%	76.6%	67.4%	58.1%	57.6%	76.9%	68.8%	**66.75%**
One or Two Books	25%	32.8%	15.8%	27.5%	25.8%	26.4%	15.7%	17.2%	**23.28%**
Three or More Books	3%	9.2%	7.6%	4.3%	16.1%	16%	7.4%	14.1%	**9.7%**
Unknown	0.8%	0.6%	0%	0.7%	0%	0%	0%	0%	**0.7%**

2.2. Caregiver engagement in learning activities

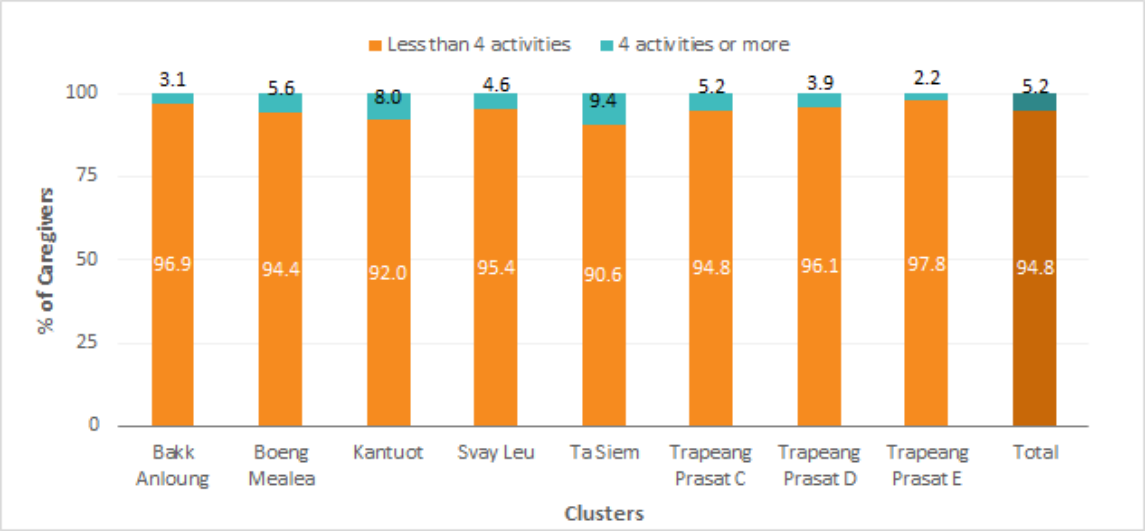
On parents' engagement in learning activities (figure 2.2.1), parents were asked whether they engaged their children in learning activities. Parents' engagement in learning activities include; reading or telling stories, singing songs to/with child, playing games with child, naming things, counting objects, drawing or helping with child's homework. Caregivers were asked the number of times they did any of the activities with the child in the previous 3 days. In addition, results in table 2.2.1 showed that less than 10% of parents in Trapeang Prasat E, Trapeang Prasat D and Trapeang Prasat C clusters engage in four or more times/activities with their children 0-2 years.

Figure 2.2.1: Parent engagement with children in learning activities for 0-2 years old child, disaggregated by cluster



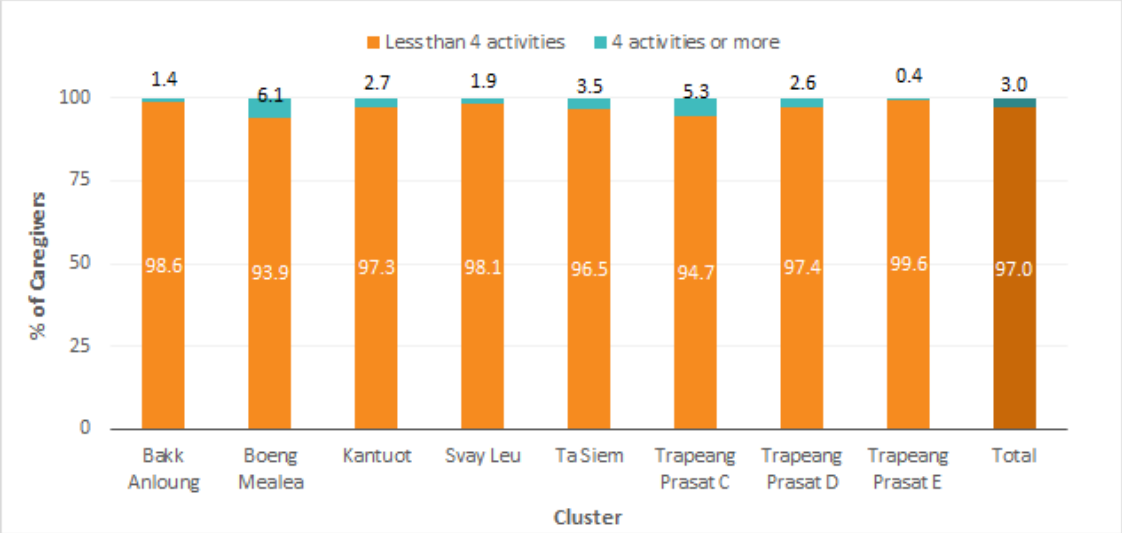
Parents who engage in learning activities four or more times per week with their children 3-6 years showing a lower percentage than the younger age group above. Figure 2.2.2 and table 2.2.2 show these values, though there are parents who engage their children two to three times.

Figure 2.2.2: Parent engagement with children in learning activities for 3-6 years old child, disaggregated by cluster



In figure 2.2.3, parents have fewer engagement in learning activities of four or more times for both groups of children 3-6 and 7-18 years of age, and even 22% of parents didn't engage in any learning activities with them.

Figure 2.2.3: Parents' engagement with children in learning activities for 7-18 years' old, disaggregated by cluster



2.3. Preschool attendance of children aged 7-15 years

Based on the survey results, 51.6% of 7-15-year-old children attended pre-school education and 45.2% didn't attend pre-school as highlighted in figure 2.3.1. Notably, children in Trapeang Prasat D and Kantuot clusters had the highest reported levels of not having attended pre-school education (Table 2.3.1).

Figure 2.3.1: Pre-school Attendance of children aged 7-15 years

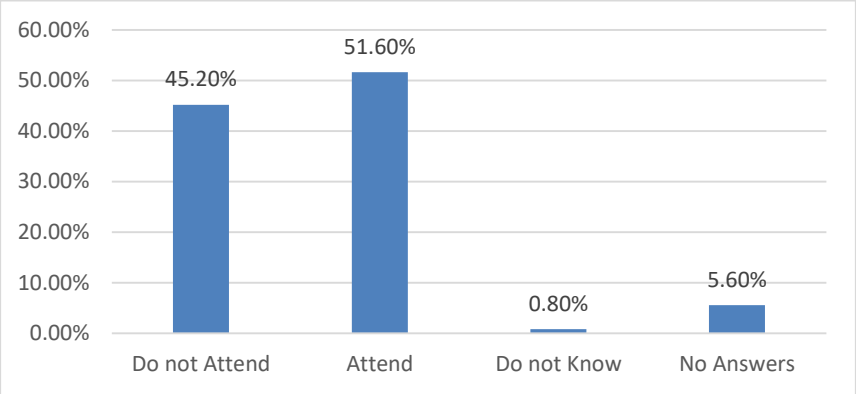


Table 2.3.1 Pre-school Attendance of children aged 7-15 years per cluster

Cluster	Bakk Anloung	Trapeang Prasat C	Trapeang Prasat D	Trapeang Prasat E	Boeng Mealea	Kantuot	Svay Leu	Ta Siem	Cambodia
Do not Attend	42.4%	52.1%	52.6%	38.1%	37.3%	57.3%	42.6%	39.3%	**45.2%**
Attend	51.4%	40.7%	38.4%	58.6%	62.7%	42.7%	57.4%	60.7%	**51.6%**
Do not Know	1.4%	1.1%	0.4%	0.4	0%	0%	0%	0%	**0.8%**
No Answers	4.8%	6.1%	8.6%	2.9%	0%	0%	0%	0%	**5.6%**

As shown in table 2.3.2, those who didn't attend school said that there were no preschools. The next reason given was schools were very far from home (distance) with Trapeang Prasat D having the highest ratio (46.1%). Interestingly, 2.8% of caregivers expressed that preschool is not necessary.

Figure 2.3.2: Reasons of caregivers for not sending children to preschool

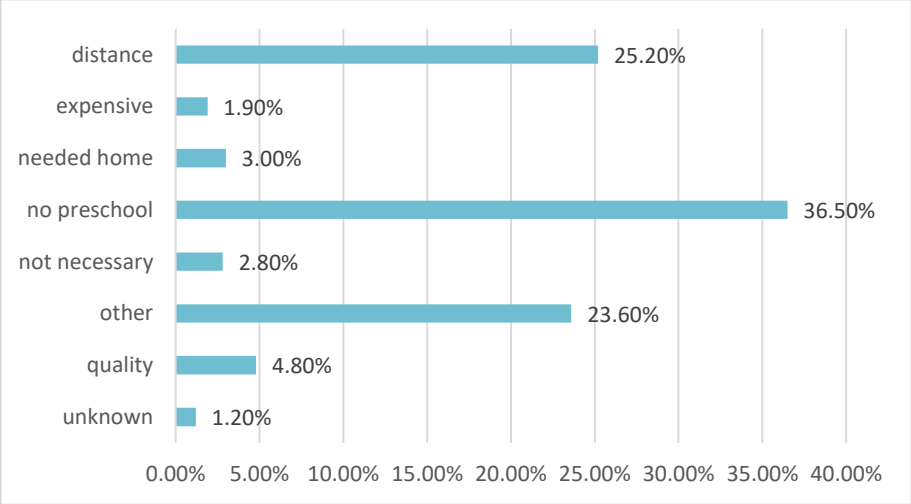


Table2.3.2: Reasons for not sending children to preschool per cluster

Reasons	Bakk Anloung	Trapeang Prasat C	Trapeang Prasat D	Trapeang Prasat E	Boeng Mealea	Kantuot	Svay Leu	Ta Siem	Cambodia
distance	31.5%	24.1%	46.1%	24.2%	16.7%	21.3%	21.0%	16.7%	**25.2%**
expensive	2.2%	0.7%	4.3%	2.2%	1.3%	0.8%	1.2%	2.4%	**1.9%**
needed home	1.1%	2.2%	0.7%	2.2%	3.8%	1.6%	9.9%	2.4%	**3.0%**
no preschool	43.8%	39.4%	26.2%	33.0%	43.6%	48.4%	14.8%	42.9%	**36.5%**
not necessary	0%	1.5%	2.1%	2.2%	2.6%	6.6%	3.7%	1.2%	**2.8%**
other	21.3%	32.1%	20.6%	1.1%	26.9%	20.5%	45.7%	20.2%	**23.6%**
quality	0%	0%	0%	0%	3.8%	0.8%	2.5%	11.9%	**4.8%**
unknown	0%	0%	0%	0%	1.3%	0.0%	1.2%	2.4%	**1.2%**

2.4. Caregivers meeting with teacher on a regular basis

Parent teacher meetings are an effective way for parents to discuss the things they feel are hindering their child's learning. Face to face communication with the teacher immensely helps the parents to understand the progress of their child and make responsive plans to support their child's learning process. The baseline value shows that a high number of parents did not meet the teachers of their children (71.54%) in the last two months (figure 2.4.1.). In Svay Leu Cluster one of 10 parents met the teacher of their children in the last 2 months (table 2.4.1).

Figure 2.4.1: Frequency of parent-teacher meetings (in the last 2 months)

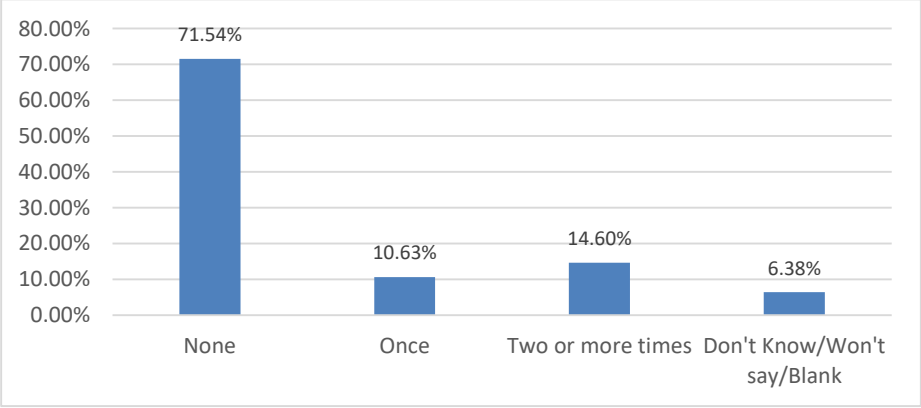


Table 2.4.1: Frequency of parent-teacher meetings (in the last 2 months) per Cluster

Frequency of meeting	Bakk Anloung	Trapeang Prasat C	Trapeang Prasat D	Trapeang Prasat E	Boeng Mealea	Kantuot	Svay Leu	Ta Siem	Cambodia
None	68.1%	66.5%	61.6%	70.3%	65.4%	79.2%	88.2%	73.0%	**71.5%**
Once	11.9%	9.5%	13.8%	14.6%	19.0%	6.0%	5.1%	5.1%	**10.6%**
Two or more times	14.3%	17.5%	16.0%	10.5%	15.6%	14.8%	6.2%	21.9%	**14.6%**
Don't Know/Won't say	5.80%	6.50%	8.60%	6..60%	0%	0%	0%	0%	**6.38%**

For those who attended meetings, the main reason given is to discuss their child's school work/performance and teacher requested to meet as highlighted in figure 2.4.2.

Figure 2.4.2: Reasons of parent-teacher meetings

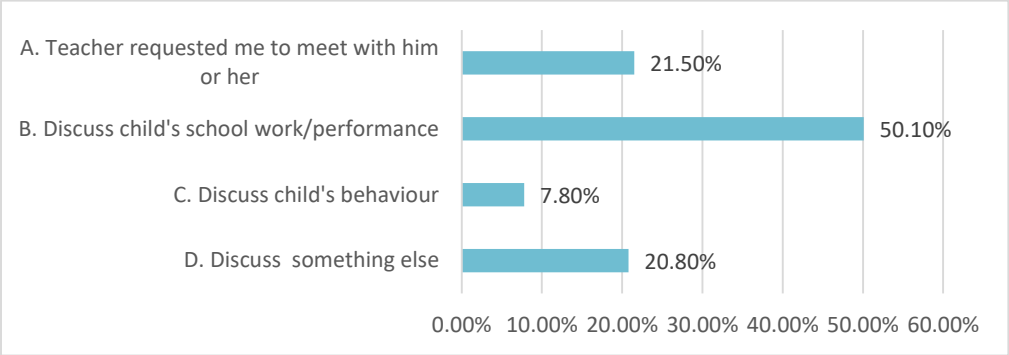


Table 2.4.2: Reasons of parent-teacher meetings per Cluster

Frequency of meeting	Bakk Anloung	Trapeang Prasat C	Trapeang Prasat D	Trapeang Prasat E	Boeng Mealea	Kantuot	Svay Leu	Ta Siem	Cambodia
Discuss something else	18.0%	33.0%	22.0%	14.0%	21.4%	20.0%	29.4%	8.3%	**20.8%**
Discuss child's behavior	15.0%	14.0%	6.0%	9.0%	0.0%	6.7%	11.8%	0.0%	**7.8%**
Discuss child's school work/performance	53.0%	40.0%	41.0%	66.0%	66.7%	46.7%	29.4%	58.3%	**50.1%**
Teacher requested me to meet with him or her	15.0%	14.0%	31.0%	11.0%	11.9%	26.7%	29.4%	33.3%	**21.5%**

Children are more likely to complete homework successfully when parents monitor their assignments. Teachers generally give pupils tips on how to study, however it takes time and practice to develop good study habits at home with support of the caregivers. Figure 2.4.3 shows that a high percentage of caregivers provide help in their child's homework (40.35%) in the last 3-5 days. Looking at the cluster level, caregivers in Trapeang Prasat D (56.8%) and Bakk Anloung (40%) clusters have higher engagement in child homework for 3-5 days a week. However, caregivers in Trapeang Prasat E cluster need more push to encourage them to provide the support in their children's homework since a higher percentage of their caregivers did not engage with their children at all (refer to table 2.4.3). Results from Svay Region clusters were not collected because of some technical issues on the ODK.

Figure 2.4.3: Caregiver engagement in child's homework in the last 7 days per Cluster

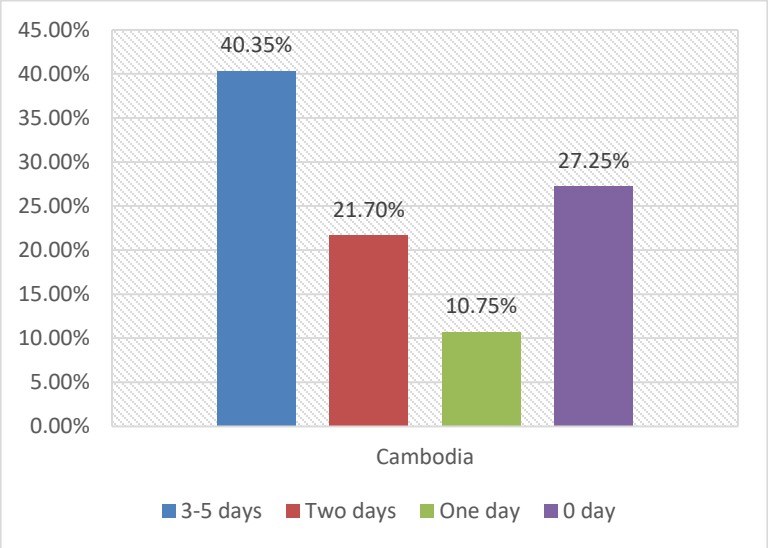


Table 2.4.3: Caregiver engagement in child's homework in the last 7 days per Cluster

Number of days	Bakk Anloung	Trapeang Prasat C	Trapeang Prasat D	Trapeang Prasat E	Cambodia
3-5 days	40.0%	35.3%	56.8%	29.3%	**40.35%**
Two days	24.0%	23.5%	14.9%	24.4%	**21.70%**
One day	10.0%	13.7%	9.5%	9.8%	**10.75%**
0 day	26.0%	27.5%	18.9%	36.6%	**27.25%**

2.5. Designated space in the home for study

One of the keys to effective studying is finding a good location. It is difficult to study in a room full of distractions. In regard to children having a designated place to study, close to 80% of the households have a specified place to study for their children with Trapeang Prasat C having the highest percentage (89.4%), shown in table 2.5. Results from Svay Region clusters were not collected because of some technical issues on the ODK.

Figure 2.5: Children with designated place to study

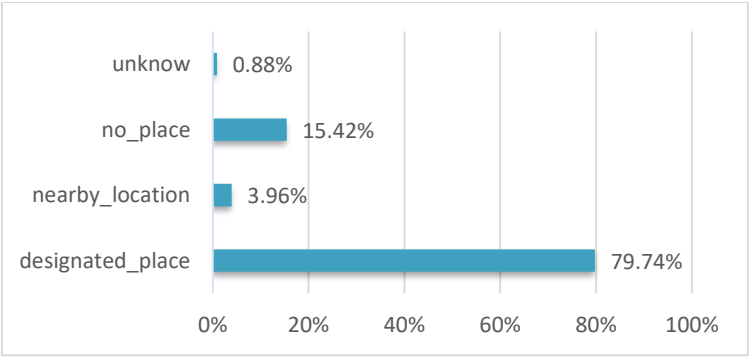


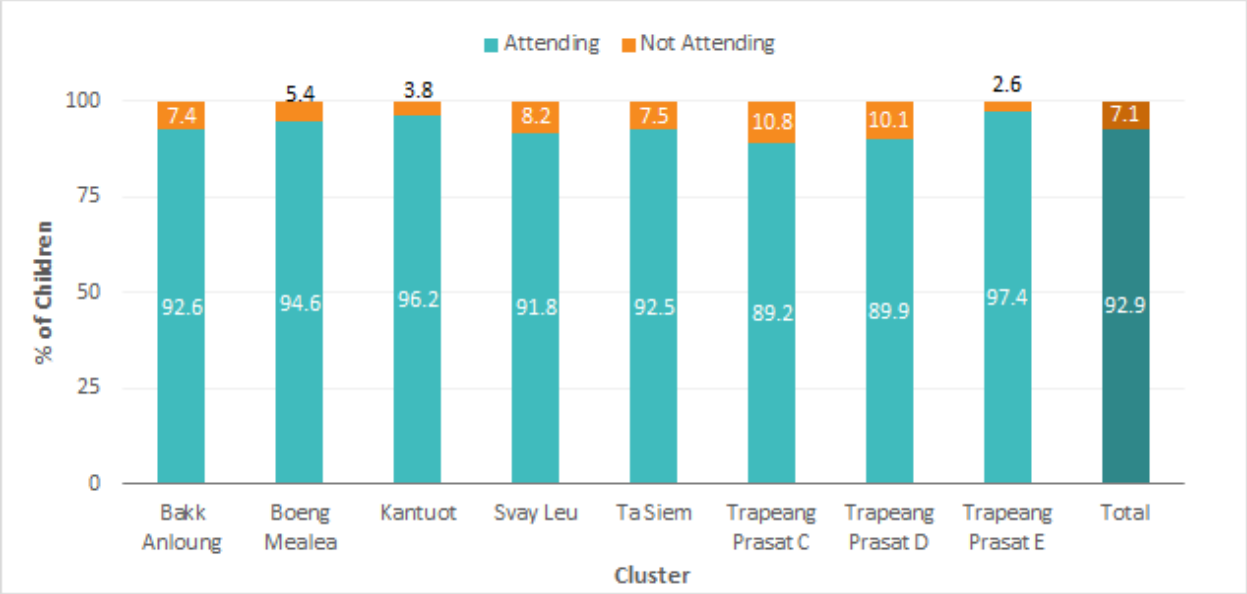
Table 2.5: Children with designated place to study per Cluster

Place of Study	Bakk Anloung	Trapeang Prasat C	Trapeang Prasat D	Trapeang Prasat E	Cambodia
Designated Place	86.3%	89.4%	71.4%	73.8%	**79.74%**
Nearby Location	11.8%	1.8%	1.3%	2.4%	**3.96%**
No Place	2.0%	7.0%	26.0%	23.8%	**15.42%**
Unknown	0%	1.8%	1.3%	0%	**0.88%**

2.6 School Attendance

On average across all clusters, school attendance was quite high (92.9%). School attendance in the various clusters varied less than 10% from 89.2% in Trapeang Prasat C to 97.4% in Trapeang Prasat E.

Figure 2.6.1: School attendance by cluster



The results displayed in Table 2.6.1 showed that the most frequently cited reason for children not attending school was illness followed by school was too far, both at 18.3%. In addition, 14% stated that the child was needed at home to care for family members (7.3%) or they needed to work for the family (6.7%). This is proof that child labor is still real and happening, especially in Trapeang D and Svay Leu where more than 12% gave this response. Also, in Trapeang E 20% cited the child finding work as the reason for not attending school. Looking more closely at the cluster level, Table 2.6.1 shows that the reasons for children not currently attending school varied substantially by cluster.

Table 2.6.1: Reasons for child not currently attending school

Reasons	Bakk Anloung	Trapeang Prasat C	Trapeang Prasat D	Trapeang Prasat E	Boeng Mealea	Kantuot	Svay Leu	Ta Siem	Cambodia
Child failed examinations	0.0	2.6	0.0	0.0	0.0	0.0	8.3	11.8	3.0
Child found work	0.0	2.6	3.2	20.0	0.0	0.0	0.0	11.8	3.7
Child graduated from primary school	11.8	7.9	3.2	0.0	13.3	0.0	0.0	0.0	4.9
Child graduated from secondary school	0.0	0.0	0.0	0.0	6.7	0.0	0.0	0.0	0.6
Child had problems in school	0.0	7.9	0.0	0.0	0.0	8.3	0.0	5.9	3.0
Child had prolonged illness	17.6	15.8	19.4	30.0	0.0	33.3	20.8	17.6	18.3
Child needed at home to care for family members	17.6	5.3	9.7	10.0	13.3	0.0	4.2	0.0	7.3
Child needed to work for the family	5.9	5.3	12.9	0.0	0.0	0.0	12.5	5.9	6.7
Child or caregiver felt they had enough schooling	0.0	2.6	0.0	10.0	0.0	0.0	0.0	0.0	1.2
No money for school fees	5.9	2.6	0.0	0.0	0.0	0.0	0.0	0.0	1.2
Other	35.3	23.7	19.4	30.0	66.7	41.7	37.5	23.5	31.7
School was too far away	5.9	23.7	32.3	0.0	0.0	16.7	16.7	23.5	18.3

The average number of days of school attended in the past 10 days was 8.8 days. (figure 2.6.2) Trapeang Prasat C had lowest average attendance (7.9) while Kantuot had the highest (9.0).

Figure 2.6.2: Average number of days of school attendance in the last two weeks by cluster

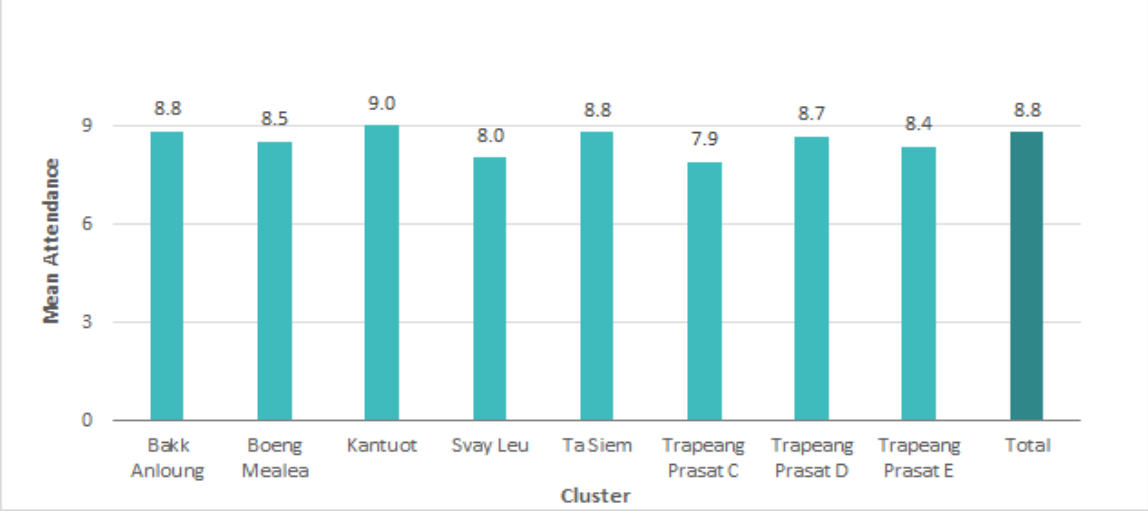


Table 2.6.2 presents the reasons given for irregular school attendance. This data is not available for clusters in the Svay Leu Region. Irregular attendance was most often attributed to a sick child. The reason next most often given was the need for the child to help work on the family's farm or help the family business.

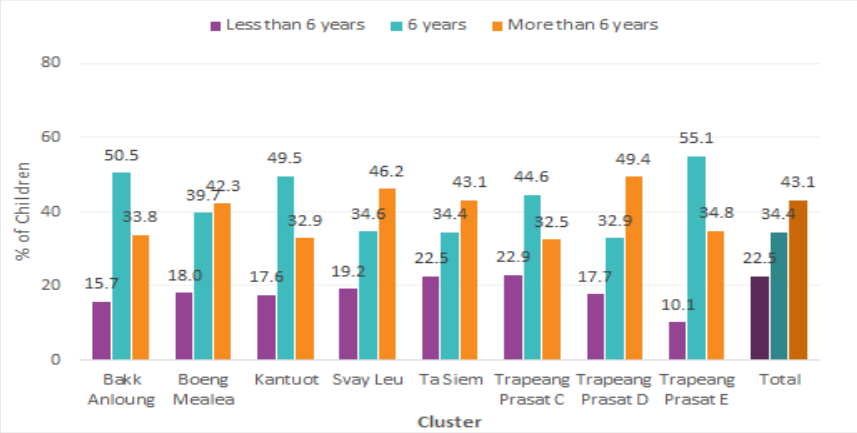
Table: 2.6.2 Reasons given by caregivers for irregular school attendance by cluster

Reason	Bakk Anloung	Trapeang Prasat C	Trapeang Prasat D	Trapeang Prasat E	Cambodia
Child was sick	20.8%	13.3%	27.0%	34.6%	**23.4%**
Child was needed at home to help with the farm or family business	9.4%	24.5%	13.5%	12.8%	**16.2%**
Child did not want to go to school	17.0%	15.3%	12.2%	10.3%	**13.5%**
Child was needed at home to care for family members	15.1%	16.3%	16.2%	5.1%	**13.2%**
School was closed or teachers were absent	13.2%	13.3%	5.4%	19.2%	**12.9%**

2.7 Age at entrance in primary grade 1

As shown in figure 2.7.1, a little more than one-third of the children were reported to have begun primary grade 1 at the recommended age of 6. Caregivers in Trapeang Prasat E reported the highest rate of on time entry into primary grade 1 (55%). Across all clusters, the largest percent of caregivers who said that the first entry of their child was when they were older than 6 years old. Caregivers in Trapeang Prasat D reported the highest rate of late entry into primary grade 1 with nearly half indicating entry at an age older than 6. A majority of caregivers in Boeng Meala (42.3%), Svay Leu (46.2%) and Ta Siem (43.1%) also reported their children entered at an age older than 6. Surprisingly, 22.5% of the children who entered grade 1 were younger than 6 years' old. Caregivers in Trapeang Prasat C reported the highest rate of early entry into primary grade 1 (22.9%).

Figure 2.7.1: Age at entry in primary 1 disaggregated by cluster



Results showed that the reasons for late entry of children to grade 1were different from one cluster to others. As highlighted in figure 2.7.2, not ready for school was the main reason for not sending children to schools. In addition, Kantuot cluster noted that the child was not ready as well as distance to school (Table 2.7.2).

Figure 2.7.2: Reasons given by caregivers for late entry of child to School

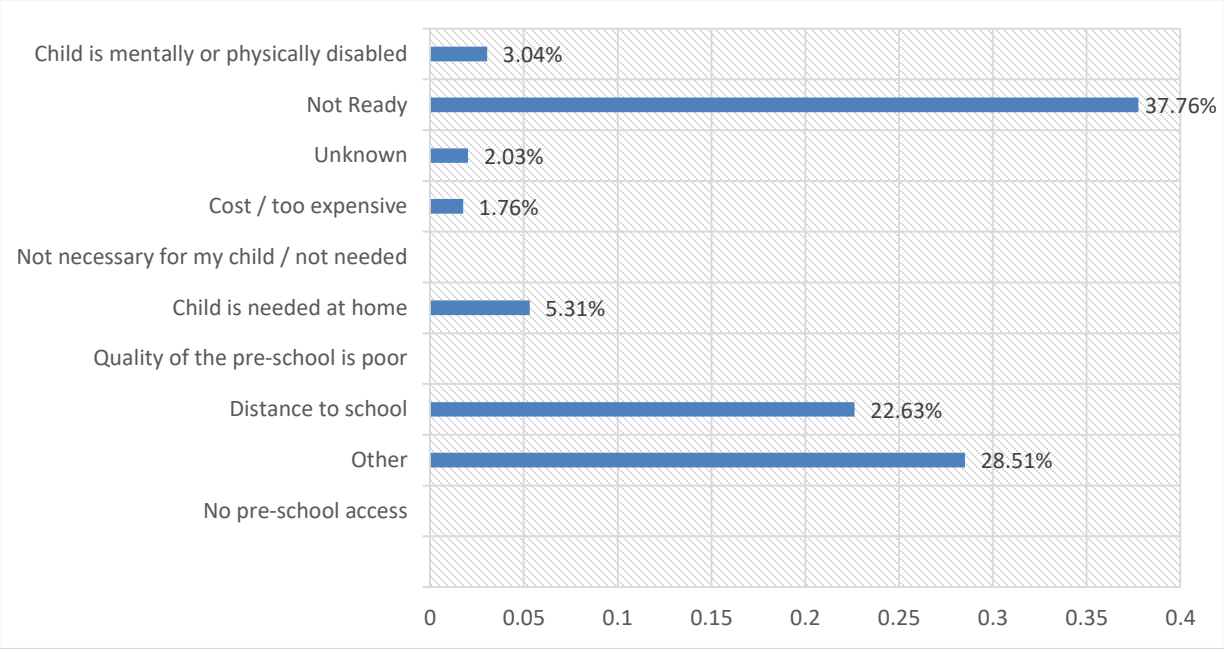


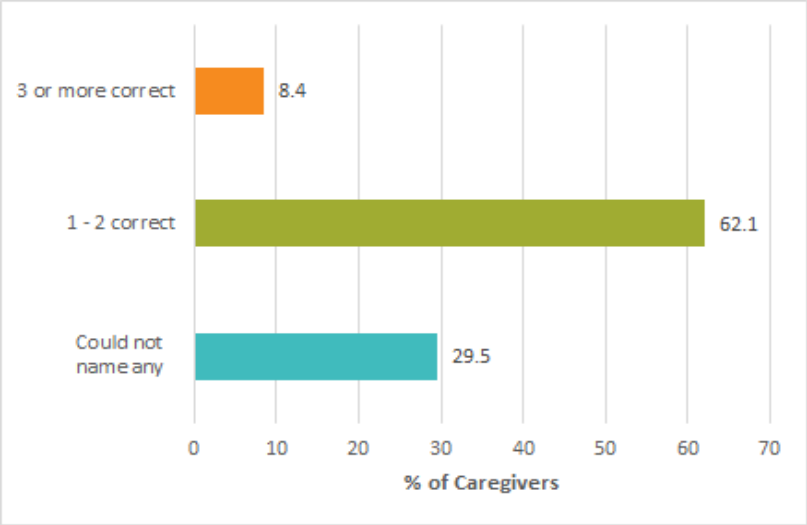
Table 2.7.2: Reasons given by caregivers for late entry of child to School by cluster

Reasons	Bakk Anloung	Trapeang Prasat C	Trapeang Prasat D	Trapeang Prasat E	Boeng Mealea	Kantuot	Svay Leu	Ta Siem	Cambodia
Not Ready	40.30%	24.36%	20%	34.18%	46.30%	52.20%	36.90%	47.80%	**37.76%**
Other Reasons	25.37%	35.90%	32.50%	34.18%	24.40%	20.30%	31%	24.40%	**28.51%**
Distance to school	23.88%	25.64%	44.17%	17.72%	12.20%	21.70%	19%	16.70%	**22.63%**
Child is needed at home	5.97%	6.41%	0.83%	6.33%	7.30%	2.90%	8.30%	4.40%	**5.31%**
Child is mentally or physically disabled	0%	1.28%	0%	1.27%	3.70%	2.90%	2.40%	6.70%	**3.04%**
Cost / too expensive	1.49%	3.85%	2.50%	3.80%	2.40%	0%	0%	0%	**1.76%**
Unknown	2.99%	2.56%	0%	2.53%	3.70%	0%	2.40%	0%	**2.03%**

2.8 Caregivers' knowledge of grade requirements

Regarding knowledge of grade requirements, 62.1% of caregivers could name 1-2 correct benchmarks, 8.4% could correctly name 3 or more requirements but 29.5 of them could not name any as shown in figure 2.8.

Figure 2.8: Caregivers' knowledge on grade requirements



3. RESULTS – IDELA

3.1 IDELA results – Global KPI

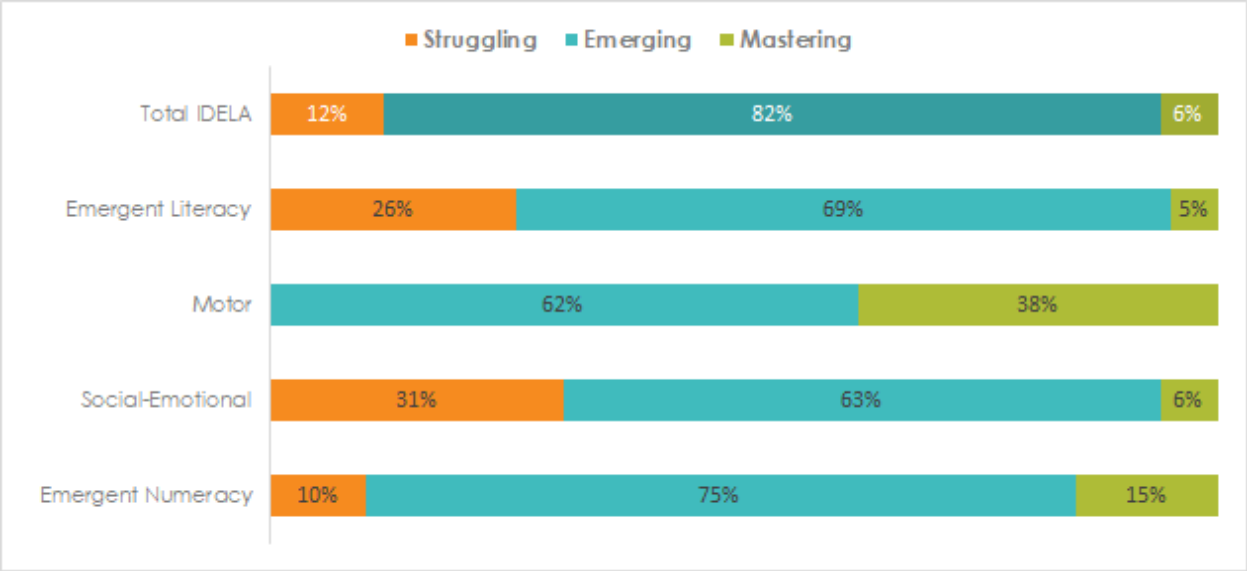
Although increasing numbers of children are enrolling in primary school, many enter late or early, fall behind, fail to progress and drop out. The degree to which children arrive at school with the cognitive, social and emotional skills they need is a growing concern. A child's readiness for school is linked to school outcomes: Children who enter school ready to learn are more likely to perform well and complete successive levels of education. IDELA assesses the development and early learning of young children (ages 3.5-6.5 years) in social emotional development, math, literacy and motor skills. There are two areas that we are looking at, the Total IDELA Score indicator (continuous) which tells the spread, and the Mastery of IDELA skills (categorical) which tells the depth. The results revealed that only the Total IDELA Score 5.6 – 6.5 years of age is 48.7%, while 6% of these children who have mastered IDELA skills of 75% or higher.

GLOBAL KPI:	Proportion of children, aged 5.6 – 6.5 years, who have mastered IDELA skills.	**6%**
Total IDELA Score of children 5.6-6.5 years of age.		**48.7%**

3.2 IDELA Results – Country Level

As mentioned above, children are considered to have mastery level skills necessary to begin grade 1 if their total IDELA score are 75% or more, and in this baseline only 6% of children 5.6 - 6.5 years of age reached that level (figure 3.2). In addition, the domains of development related to literacy and socio-emotional showed the lowest proportion of children having attained mastery level status.

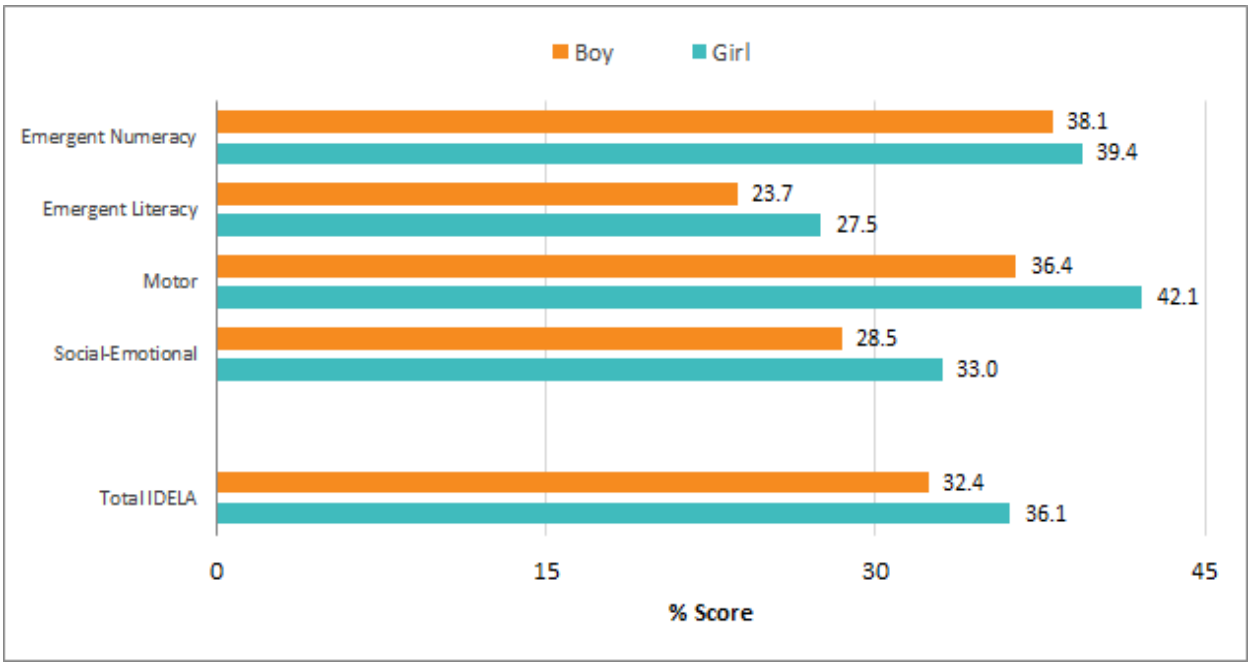
Figure 3.2: Proportion of children 5.6 – 6.5 years of age by performance level and domain



3.3 Average IDELA Score by gender

Looking at the differences between gender and development score, results showed that there were small differences between boys' and girls' scores. In the motor skills domain, the difference range was 5.7% benefitting girls. In emergent numeracy, boys were 1.3% below the girls (Figure 3.3).

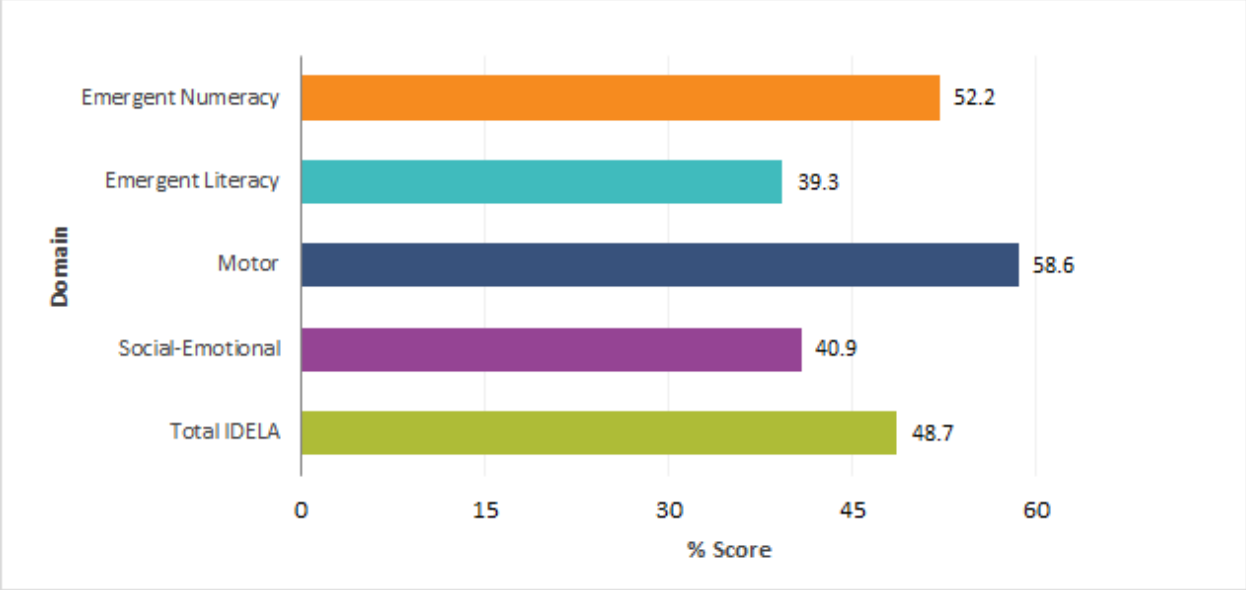
Figure 3.3: Average IDELA scores by Sex



3.4 IDELA Results for Children 5.6 – 6.5 years of age

The average Total IDELA Score for children 5.6 to 6.5 years of age was 48.7% (figure 3.4). The domain with the highest average score was motor skills followed by Emergent Numeracy, Socio-emotional, then Emergent Literacy.

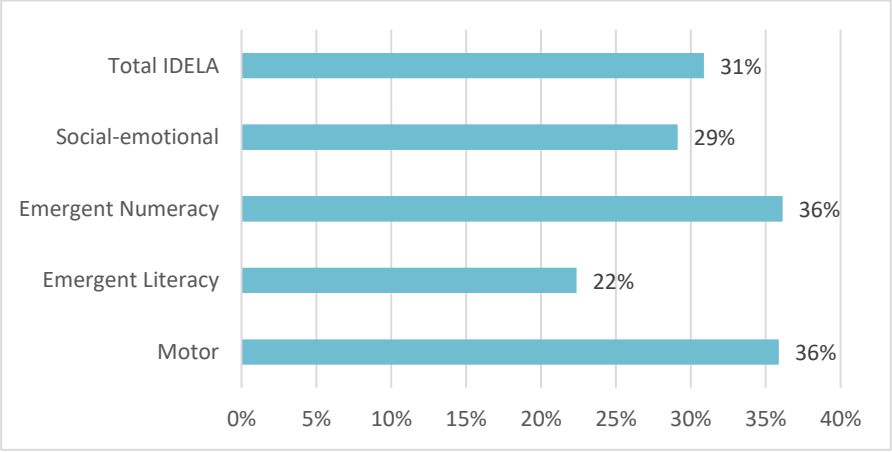
Figure 3.4: IDELA results for children 5.6 – 6.5 years of age by domain



3.5 IDELA Results for Children 4.6 – 5.5 years of age

The average Total IDELA Score for children 4.6 to 5.5 years of age was 31% (figure 3.4). The domains with the highest average score were motor skills and emergent numeracy, followed by Socio-emotional and Emergent Literacy as the lowest.

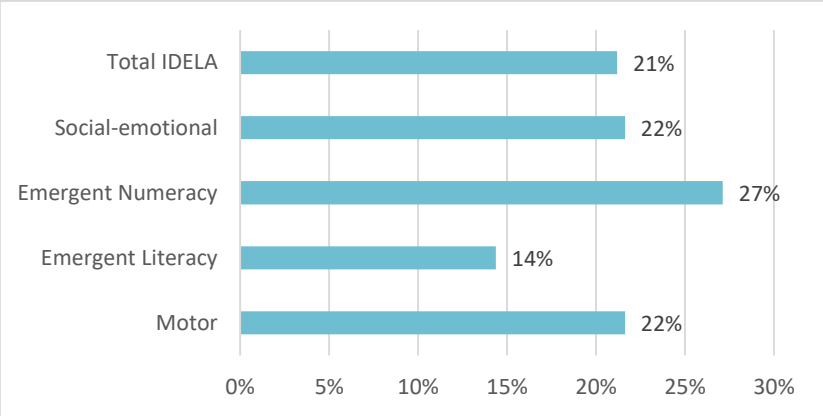
Figure 3.5: IDELA results for children 4.6 – 5.5 years of age



3.6 IDELA Results for Children 3.5 – 4.5 years of age

The average Total IDELA Score for children 3.5 to 4.5 years of age was 21% (figure 3.4). The domain with the highest average score was emergent numeracy, with social-emotional and motor skills the same and emergent literacy as the lowest.

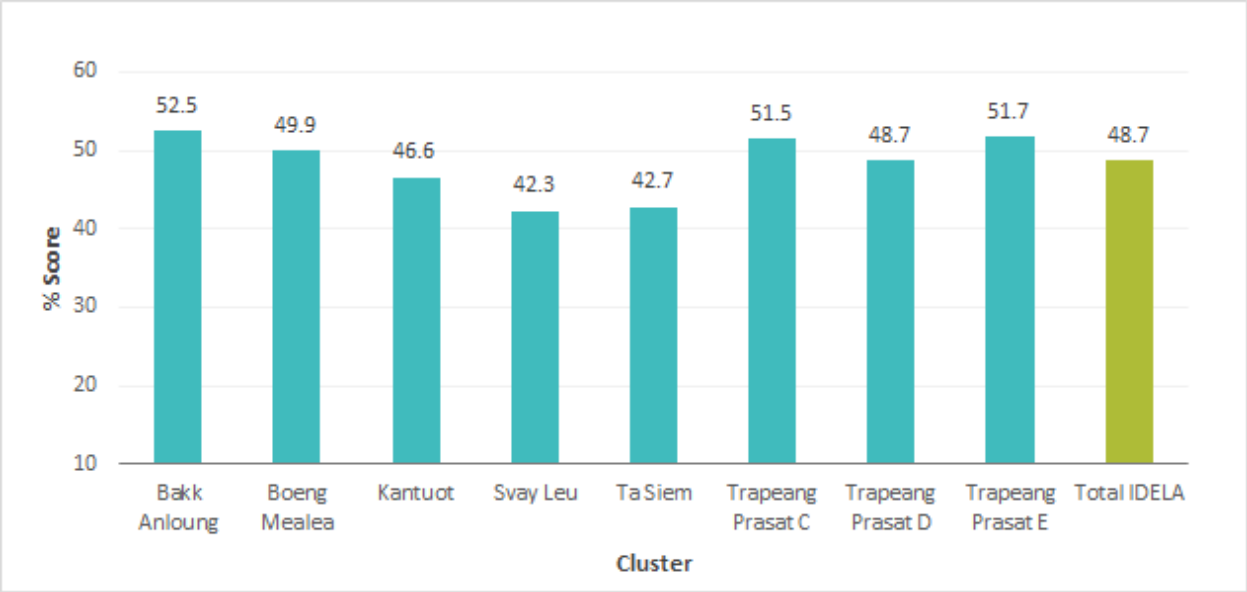
Figure 3.6: IDELA results for children 3.5 – 4.5 years of age



3.7 IDELA Results for Children 5.6 – 6.5 years of age by Cluster

As shown in figure 3.7, the average IDELA scores for clusters varied from 42.3% in Svay Leu to 52.5% in Bakk Anloung, a range of 10.2%.

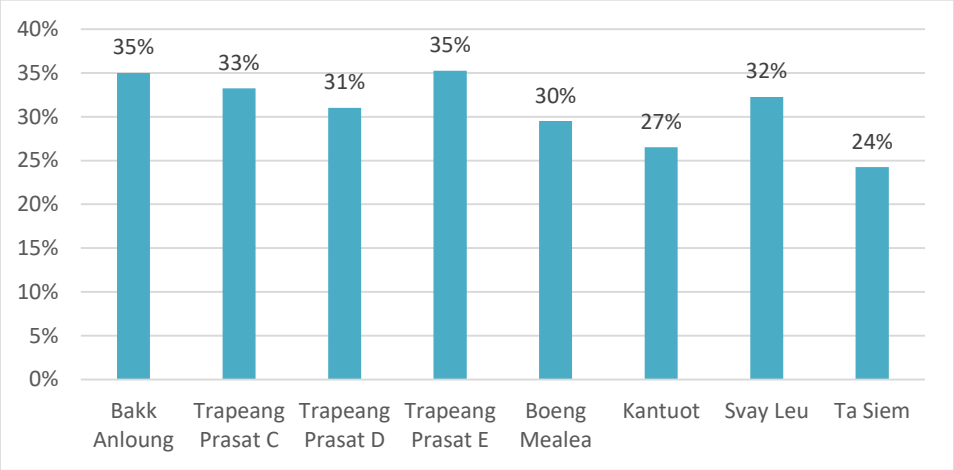
Figure 3.7: IDELA results for children 5.6 – 6.5 years of age by cluster



3.8 IDELA Results for Children 4.6 – 5.5 years of age by Cluster

As shown in figure 3.8, the average IDELA scores for clusters varied from 24% in Ta Siem to 35% both in Bakk Anloung and Trapeang Prasat E, a range of 11%.

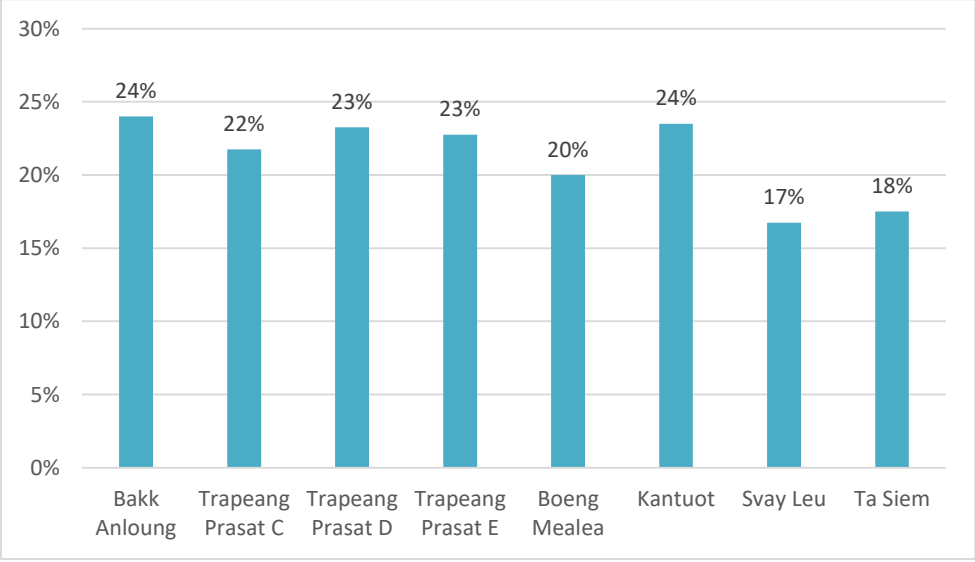
Figure 3.8: IDELA results for children 4.6 – 5.5 years of age by cluster



3.9 IDELA Results for Children 3.5 – 4.5 years of age by Cluster

As shown in figure 3.9, the average IDELA scores for clusters varied from 17% in Svay Leu to 24% both in Bakk Anloung and Kantuot, a range of 7%. It is interesting to note that children Bakk Anloung has been consistent to have the highest IDELA score among the other clusters. Also that the highest of the children here in this age group is where the lowest number with children 4.6-5.5 year of age.

Figure 3.9: IDELA results for children 3.5 – 4.5 years of age by cluster



4. Cross Tabulation Results – Home Learning Environment & IDELA Outcomes

- **Is there a difference in scores for children in HH where the child has three or more children's books? Explain.**

The hypothesis is that the more books a caregiver has, the higher the IDELA score of the child should be. It is clearly visible in figure 4.1 that as the number of books the caregiver has increases, so does the IDELA score of children 5.5 - 6.5 years of age. While the average IDELA score for children 5.5-6.5 years of age whose caregivers have no books is 32% and the average IDELA score for children whose caregivers have one to two books is 34%, it increases to 40% when a caregiver has three or more books.

Figure 4.1: Relationship Between IDELA Score of children 5.5-6.5 years of age and the Number of Books a caregiver has

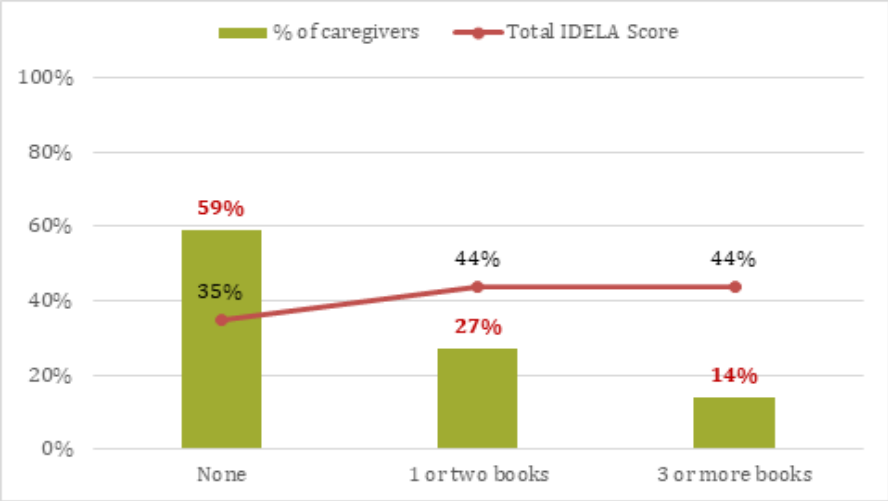


Table 4.1: Association between caregivers with children aged 5.5 -6.5 years having three or more books and the children achieving the mastery status in IDELA

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	0.8067	0.1777	3.6621 (T)

Table 4.1 shows that children aged 5.5 - 6.5 years of age whose caregivers do not have any books are 81% as likely to achieve mastery level (a score of 75% or more) compared to children with caregivers who have 3 or more books. The finding is not statistically significant as the confidence interval crosses over one.

Table 4.2: Association between caregivers with children aged 5.5 -6.5 years having one or more books and the children achieving the mastery status in IDELA

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	2.7827	1.0005	7.7398 (T)

In table 4.2, children aged 5.5 - 6.5 years of age whose caregivers have one or more books are almost 3 times more likely to achieve mastery level compared to children with caregivers who do not have any books. The finding is not statistically significant as the confidence is greater than 5%.

Table 4.3: Association between IDELA score of children aged 3.5 -6.5 years and the number of books the caregivers have

Table 4.3.1: ANOVA - 3 or more books				
Variation	SS	df	MS	F statistic
Between	0.8495	1.0000	0.8495	17.3870
Within	48.1764	986.0000	0.0489	
Total	49.0259	987.0000		
P Value	0.0000			

Table 4.3.2: ANOVA - 1 or more books				
Variation	SS	df	MS	F statistic
Between	1.8813	1.0000	1.8813	39.3455
Within	47.1447	986.0000	0.0478	
Total	49.0259	987.0000		
P Value	0.0000			

Table 4.3.3: Predicting the Effect of Number of Books on the Average IDELA score						
Variable	**Coefficient**	**95% Confidence**	**Limits**	**Std Error**	**F-test**	**P-value**
3 or more books	0.0410	-0.0130	0.0950	0.0270	2.2406	0.1348
1 or more books	0.0820	0.0490	0.1150	0.0170	23.8457	0.0000
CONSTANT	0.2140	0.1970	0.2300	0.0080	646.0085	0.0000
Correlation Coefficient: r^2 = 0.04						
Source	**df**	**Sum of Squares**	**Mean Square**	**F-statistic**	**p-value**	
Regression	2.0000	1.9883	0.9941	20.8178	0.0000	
Residuals	985.0000	47.0377	0.0478			
Total	987.0000	49.0259				

Tables 4.3.1 and 4.3.2 present the Analysis of Variance (ANOVA). ANOVA compares the difference in means between the two groups. Table 4.3.1 compares the difference in average IDELA score between children whose caregivers have three or more books and children whose caregivers have less than three books, and table 4.3.2 compares the difference in average IDELA score between children whose caregivers have one or more books and if caregivers have no books. Both the ANOVA tables show that there is a significant difference in the average IDELA score between two groups in both scenarios. This finding is highly statistically significant as p values in both cases are less than 0.01.

Table 4.3.3 presents the Linear Regression looking at the relationship between the number of books and the average IDELA score. Applying the coefficients in the table to the regression equation we have,

$$\text{IDELA score } (\hat{Y}) = 21.4 + 4.1\ (3 \text{ or more books}) + 8.2\ (1\text{or more books})$$

These results tell us that, if both the expository variables are constant, i.e. their values are zero, children will still be able to achieve an average IDELA score of 21.4%. If one or more books is constant (i.e. the value is zero), with every one-unit increase in three or more books increases the IDELA score by 4.1%. Similarly, if we keep 3 or more books constant, then IDELA score increases by 8.2% for every one-unit increase in one or more books. Since the coefficient for each expository variable is greater than the standard Standard Error, we conclude that the true value of the coefficient is not 0. Since the p-value for the regression equation is less than .05, we conclude that there is a correlation between the expository variables, collectively, and the average IDELA score. However, the correlation coefficient

is 0.04, which is very small indicating that the linear relationship between the expository variables and IDELA score is weak.

- **Is there a difference in scores when caregivers engage in regular learning activities?**

The hypothesis is that the more the caregiver is engaged in learning activities with their children, the higher the IDELA score should be. In figure 4.2, it is evident that for children 5.5-6.5 years of age whose caregiver is not involved in any learning activity, the average IDELA score is 31%, which increases to 40% if the caregiver is engaged in one to three activities and further to 42% when a caregiver is engaged in four or more activities. Therefore, these findings support the hypothesis.

Figure 4.2: Relationship between Caregivers with children 5.5 -6.5 years of age who are engaged in learning activities and the IDELA Score

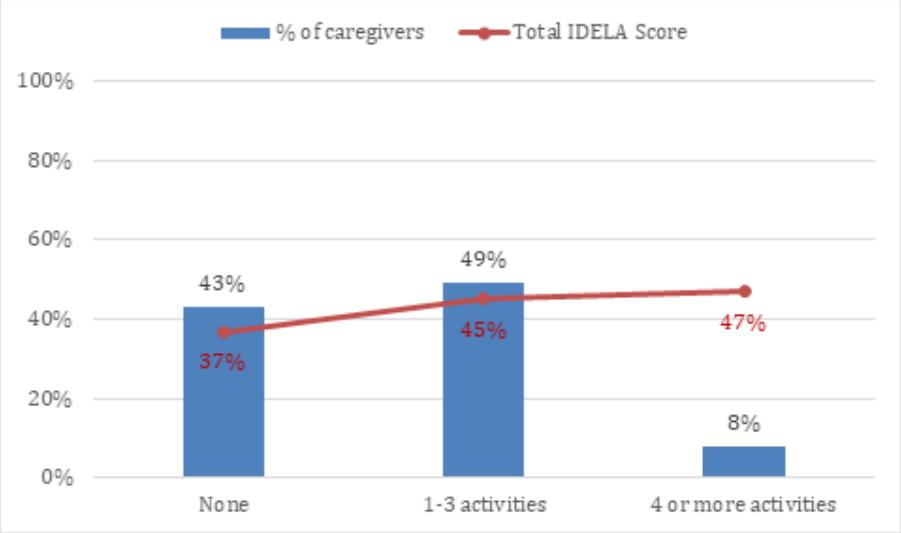


Table 4.4: Association between caregivers with children aged 5.5 -6.5 years engaged in 1 or more activities and the children achieving the mastery status in IDELA

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	1.7419	0.5156	5.8846 (T)

As seen in table 4.4, children aged 5.5 - 6.5 years of age whose caregivers are engaged in one or more activities are 1.7 times as likely to achieve mastery level (a score of 75% or more) as children whose caregivers are not engaged in any activities. The finding is not statistically significant as the confidence interval crosses over one.

Table 4.5: Association between caregivers with children aged 5.5 -6.5 years engaged in 4 or more activities and the children achieving the mastery status in IDELA

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	0.0000	Undefined	Undefined (T)
Risk Ratio (RR)	0.9207	0.8803	0.9630 (T)

As seen in table 4.5, there were not enough samples to understand the association between caregivers with children aged 5.5 -6.5 years engaged in 4 or more activities and the children achieving the mastery status in IDELA. However, from the risk ratio, children of caregivers who engage in 4 or more activities have 93% of the risk that they will not be able to achieve mastery status in IDELA as children of caregivers who do not engage in 4 or more activities. The finding is not statistically significant as the confidence interval crosses over one.

Table 4.6: Association between IDELA Score of children aged 3.5 -6.5 years and the number of activities caregivers are engaged in.

Table 4.6.1: ANOVA -1 or more activities				
Variation	SS	df	MS	F statistic
Between	0.0096	1.0000	0.0096	0.1836
Within	30.8216	590.0000	0.0522	
Total	30.8312	591.0000		
P Value	0.6685			

Table 4.6.2: ANOVA - 4 or more activities				
Variation	SS	df	MS	F statistic
Between	0.0008	1.0000	0.0008	0.0149
Within	30.8305	590.0000	0.0523	
Total	30.8312	591.0000		
P Value	0.9029			

Table 4.6.3: Predicting the Effect of Number of Activities on the Average IDELA score						
Variable	**Coefficient**	**95% Confidence**	**Limits**	**Std Error**	**F-test**	**P-value**
1 o more activities	0.0090	-0.0300	0.0490	0.0200	0.2184	0.6404
4 o more activities	-0.0080	-0.0770	0.0610	0.0350	0.0500	0.8231
CONSTANT	0.2590	0.2280	0.2890	0.0160	271.0173	0.0000
Correlation Coefficient: r^2 = 0.00						
Source	**df**	**Sum of Squares**	**Mean Square**	**F-statistic**	**p-value**	
Regression	2.0000	0.0122	0.0061	0.1166	0.8899	
Residuals	589.0000	30.8190	0.0523			
Total	591.0000	30.8312				

Tables 4.6.1 and 4.6.2 present the Analysis of Variance (ANOVA). ANOVA compares the difference in means between the two groups. Table 4.6.1 compares the difference in average IDELA score between children whose caregivers are engaged in one or more activities and children whose caregivers are not engaged at all, and table 4.6.2 compares the difference in average IDELA score between children whose caregivers are engaged in 4 or more activities and if caregivers are engaged in less than 4 activities. Both the ANOVA tables show that there is no significant difference in the average IDELA score between two groups in both scenarios.

Table 4.6.3 presents the Linear Regression looking at the relationship between the number of activities a caregiver is engaged in and the average IDELA score of the children. Applying the coefficients to the regression equation we get,

$$\text{IDELA score } (\hat{Y}) = 25.9 + 0.9\ (1 \text{ or more activities}) - 0.8\ (4 \text{ or more activities})$$

Since the standard error is greater than the coefficients for each expository variable, we cannot conclude that the coefficient is no 0. Also, since the p-values for each expository variable is greater than .05 and the p-value for the regression is greater than .05 we cannot be confident that the expository variables are correlated with IDELA score.

- **Looking at the two factors above (number of books and number of learning activities), which one (or ones) have the strongest impact on early learning performance?**

Summary Table 1: Prescriptive Analysis for Number of Books and Number of Activities and their Residual Effect on Average IDELA Score						
Variable	**Coefficient**	**95% Confidence**	**Limits**	**Std Error**	**F-test**	**P-value**
3 or more books	0.0530	-0.0110	0.1170	0.0320	2.6842	0.1019
1 or more books	0.0660	0.0240	0.1080	0.0210	9.5245	0.0021
1 o more activities	-0.0010	-0.0400	0.0380	0.0200	0.0018	0.9660
4 o more activities	-0.0210	-0.0900	0.0480	0.0350	0.3513	0.5536
CONSTANT	0.2340	0.2010	0.2660	0.0170	197.9219	0.0000
Correlation Coefficient: r^2 = 0.04						
Source	**df**	**Sum of Squares**	**Mean Square**	**F-statistic**	**p-value**	
Regression	4.0000	1.0861	0.2715	5.3584	0.0003	
Residuals	587.0000	29.7451	0.0507			
Total	591.0000	30.8312				

The Multiple Linear Model from our summary table 1 above is:

Average IDELA Score ($\hat{Y}$) = 23.4 + 5.3 (3 or more books) + 6.6 (1 or more books) -0.1 (1 or more activities) – 2.1 (4 or more activities)

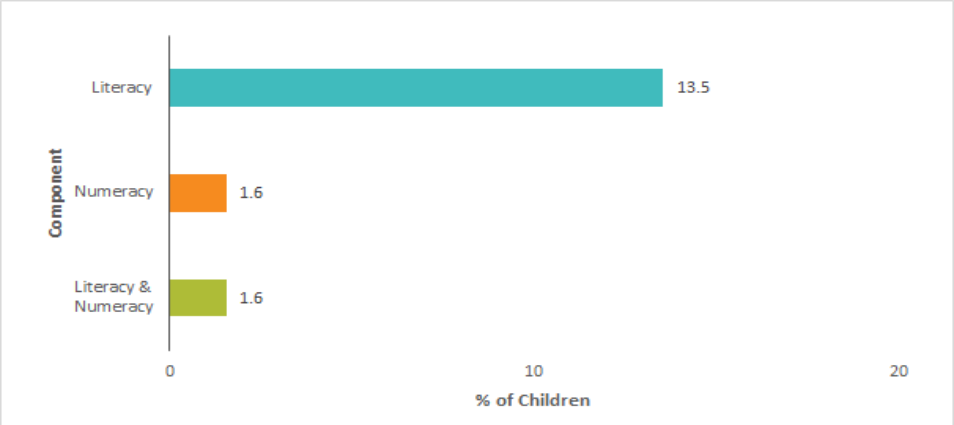
From the above summary table 1, we observe that caregivers having at least one children's book in the home has a stronger residual effect than caregivers engaged in one or more activities. Coming up with a prediction equation like this is only a useful exercise if the expository variables in our dataset have some correlation with our outcome variable. Since we have determined that the number of activities in which a caregiver is engaged is not correlated, we are left with only the number of books as our expository variables that are correlated to IDELA score. Because one or more books and three or more books are not independent we can merge their coefficients. Therefore, for every one-unit increase in the books, the IDELA score will increase 11.9%.

5. RESULTS – CLA

5.1 CLA Results – Global KPI

The results revealed that, only 1.6% of 9-year-old children were able to perform both third grade literacy and numeracy standards. Furthermore, 1.6% of 9-year-old children were able to perform numeracy standards and 13.5% of 9 year olds met literacy standards (see figure 5.1)

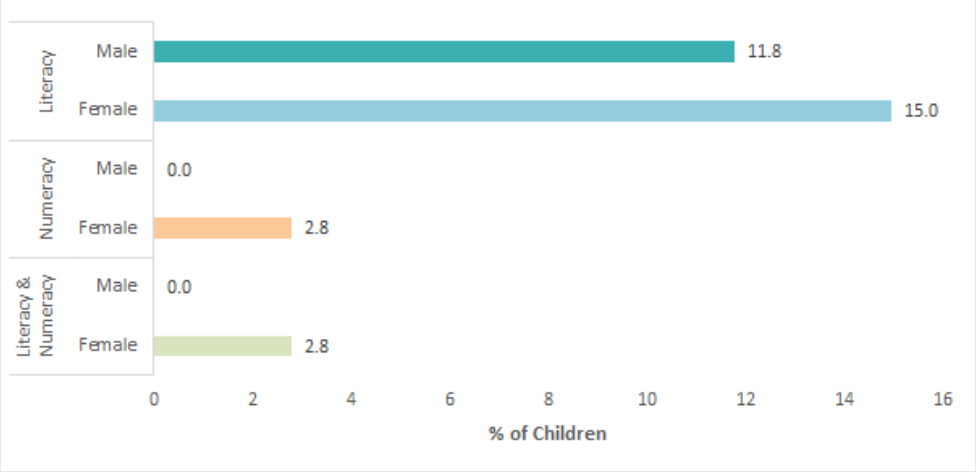
Figure 5.1: Proportion of Children age 9 attaining Grade 3 standards



5.2 CLA Results by gender

When the proportion of children age 9 who achieved the grade 3 standards is disaggregated by gender (Figure 5.2), we find a higher percentage of girls met the literacy standards, numeracy standards, and both literacy and numeracy standards.

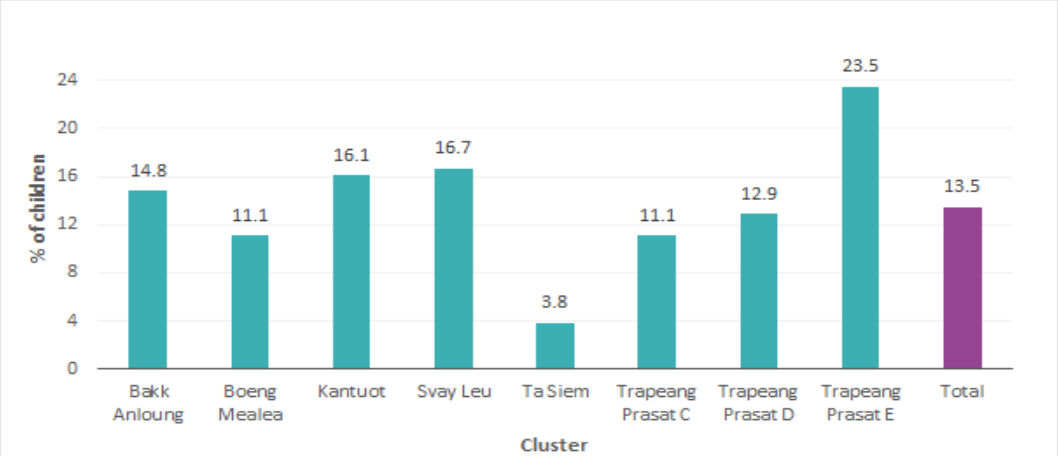
Figure 5.2: Proportion of Children age 9 attaining Grade 3 standards by gender



5.3 CLA Literacy results by cluster

The proportion of children age 9 who passed the grade 3 literacy standards varied considerably from 3.8% in Ta Siem to 23.5% in Trapeang Prasat E. (figure 5.3)

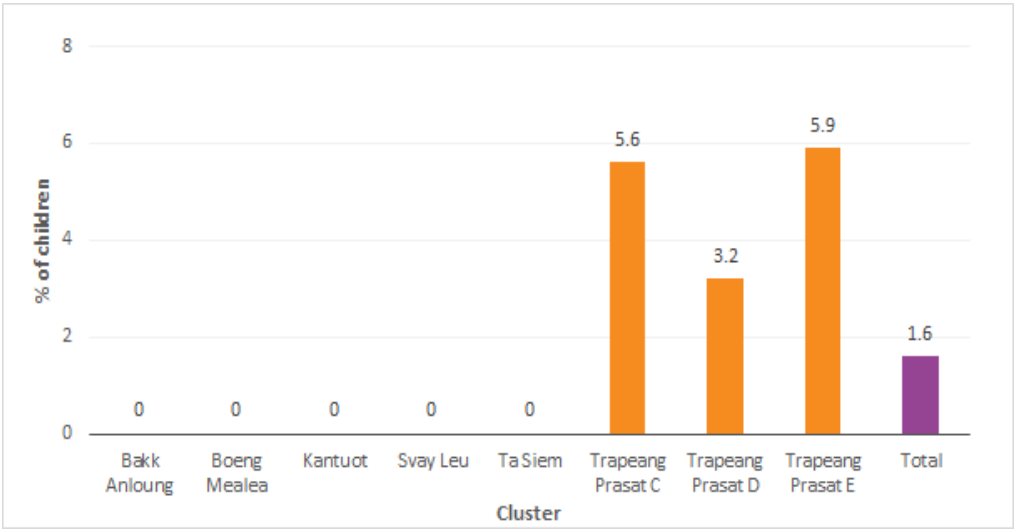
Figure 5.3: Proportion Children age 9 attaining Grade 3 standards in Literacy by cluster



5.4 CLA Numeracy results by cluster

Figure 5.4, there were three clusters having children age 9 attained the grade 3 numeracy standards, Trapeang C (5.6%), Trapeang D (3.2%) and Trapeang E (5.9%), the rest of the clusters have none of their children reached that in this baseline survey.

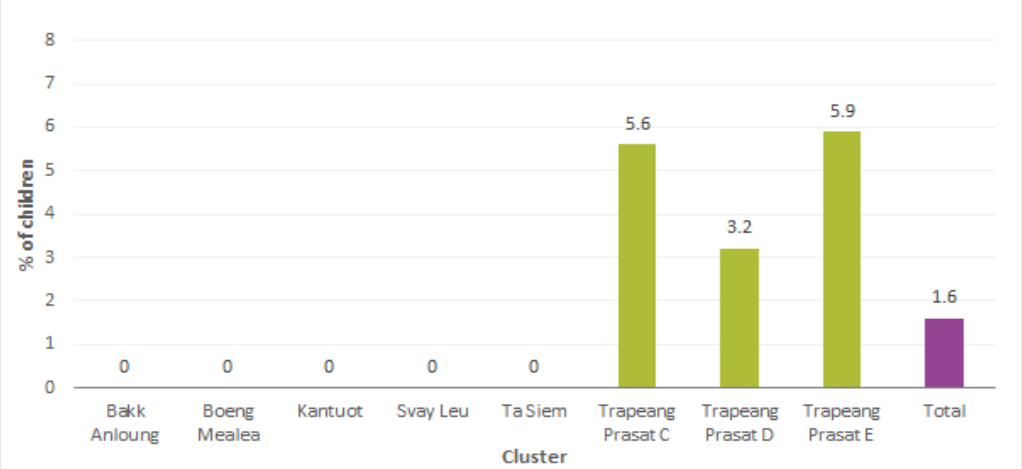
Figure 5.4: Proportion of Children age 9 attaining Grade 3 standards in Numeracy by cluster



5.5 CLA Literacy and Numeracy Results by cluster

Figure 5.5 shows that the same children who attained the numeracy standards also attained the literacy standards as the proportion who attained the numeracy standards are the same as those who attained the literacy and numeracy standards.

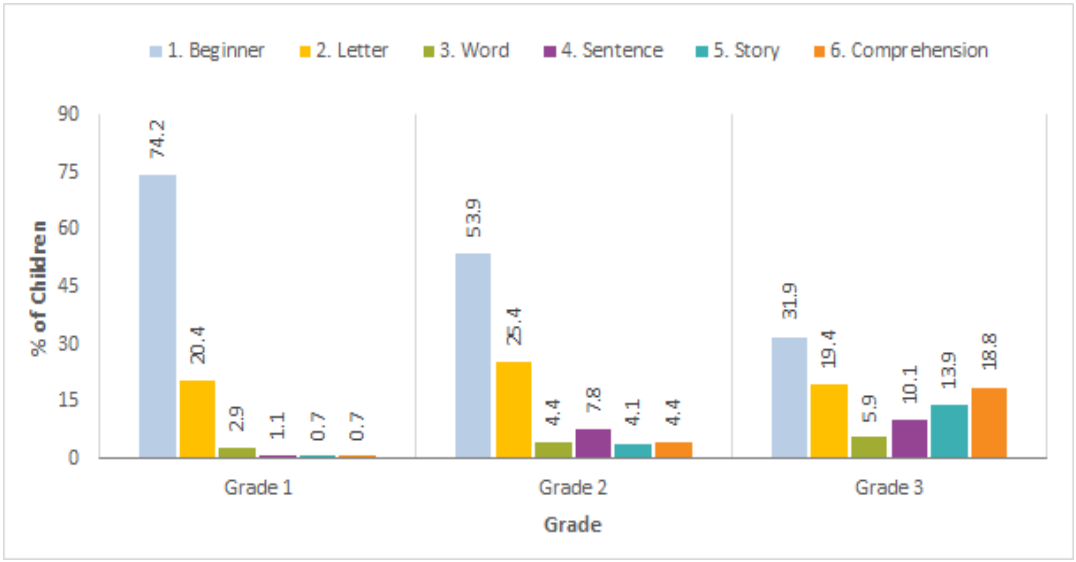
Figure 5.5: Proportion of Children age 9 attaining Grade 3 standards in Literacy and Numeracy by cluster



5.6 Distribution of literacy results in grades 1-3

Regarding literacy gain, children made some gains from grade 1 to 3. Based on figure 5.6, only 18.8% of children in grade 3 were able to complete literacy standards for grade 3 through comprehension.

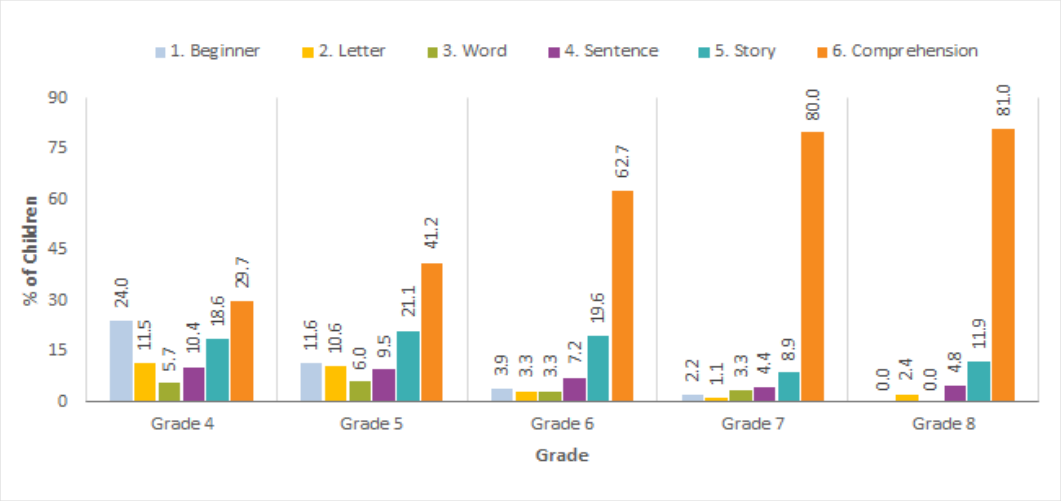
Figure 5.6: Distribution of Literacy Skills of Children in Grades 1 to 3



5.7 Distribution of literacy results grades 4-8

In terms of gaps in literacy, there are many children that their grade is higher than 3 but their competency in literacy still did not reach comprehension. Even only 81% of children in grade 8 were able to complete grade 3 comprehension level (Figure 5.7). These are some of the factors why children are dropping because they cannot cope with the lesson on higher level, aside from the factors mentioned by the caregivers in the earlier section.

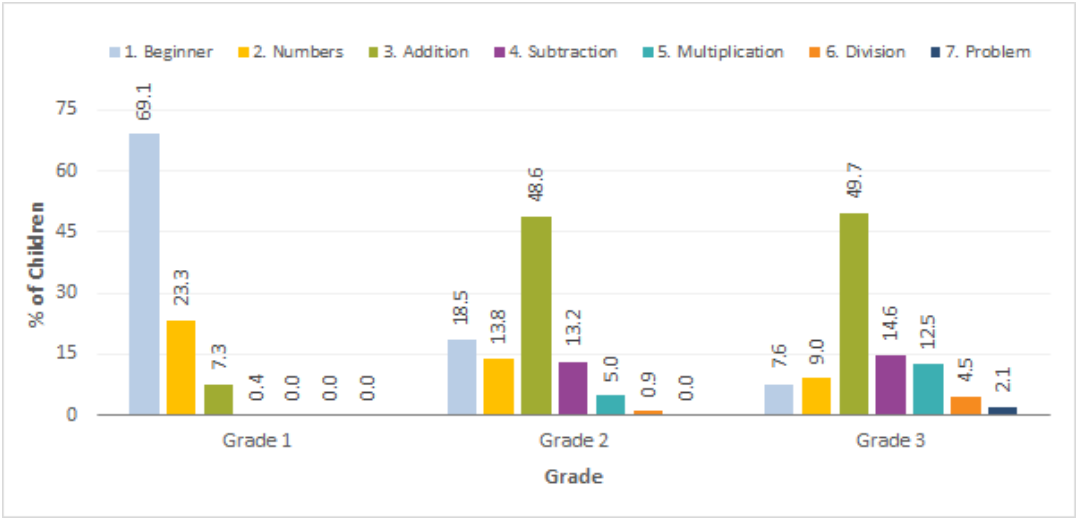
Figure 5.7: Distribution of Literacy Skills of Children in Grades 4-8



5.8 Distribution of numeracy results in grade 1-3

Nearly half of children in grade 3 were able to perform at the addition level, however. there was only a 1.1% increase compared with grade 2 students. Skills in subtraction, multiplication, division and problem solving were lacking considerably in the grade 3 level.

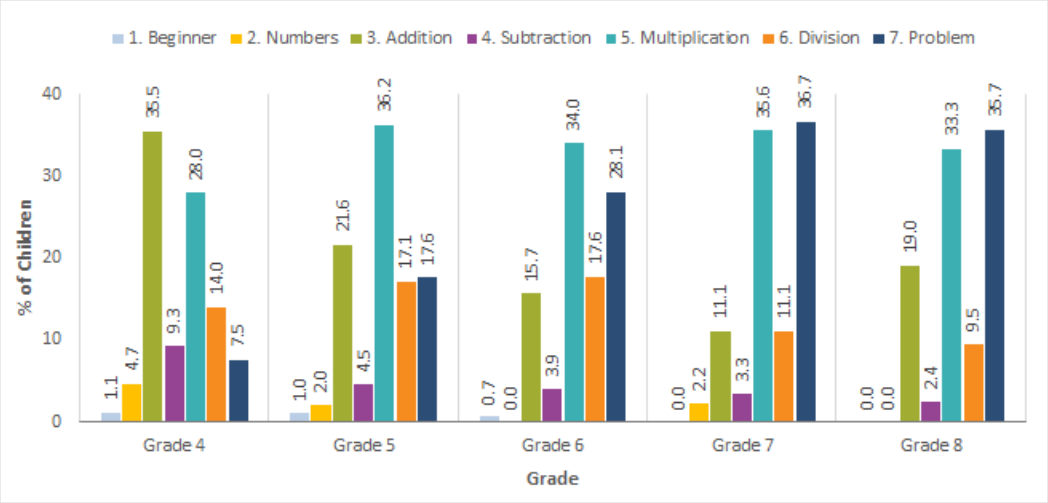
Figure 5.8: Distribution of Numeracy Skills of Children in Grades 1-3



5.9 Distribution of numeracy results in grade 4-8

As shown in figure 5.9, just over one-third of children in grade 7 attained the problem solving level of the CLA and there was no increase in that proportion for children in grade 8. It showed that less than half the children were able to achieve the standards for division by grade 8 and approximately 80% were able to achieve the standards for multiplication by grade 8 and division is one pulling factor why many children stayed their competency in this level only (multiplication).

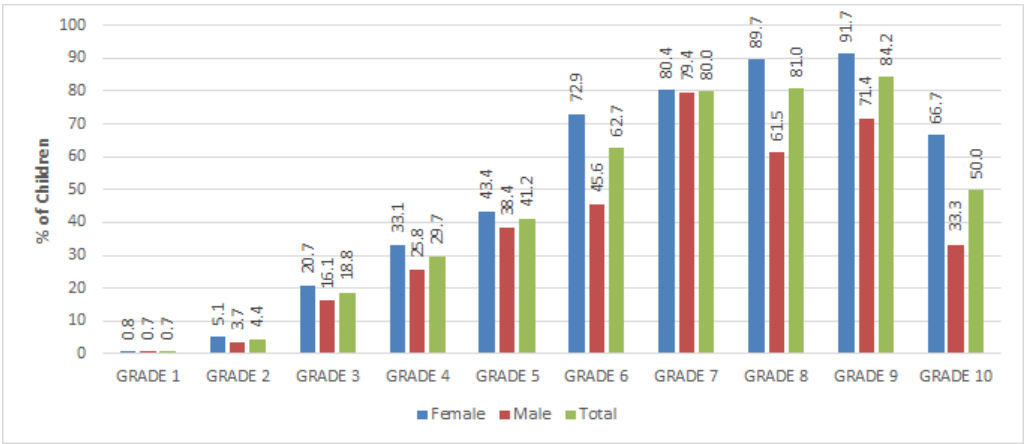
Figure 5.9: Distribution of Numeracy Skills of Children in Grades 4 to 8



5.10 CLA Literacy results – all grades

Figure 5.10 revealed that boys lagged behind with girls in attaining the literacy standards in every grade. The greatest disparities were found in grade 6 (27.3%), grade 8 (28.2%) and grade 10 (33.4%). The proportion of children meeting the literacy standards increased in every grade until the 10th grade where only 50% of youth achieved the grade 3 standards for literacy. It is good to note that this represents three of six children in the sample who were in the 10th grade.

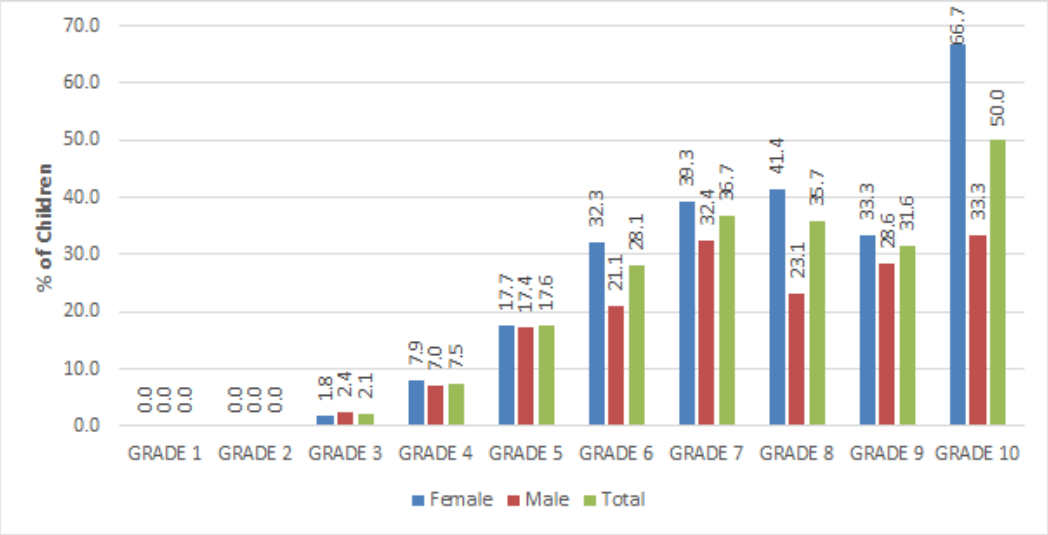
Figure 5.10: Proportion of Children Who Met the Standards for Literacy by Grade and Gender



5.11 CLA Numeracy results – all grades

As with literacy, girls performed better on the numeracy standards in every grade. Also as with literacy, the greatest disparity was seen in grade 6, (11.2%) grade 8, (18.3%) and grade 10 (33.4%)

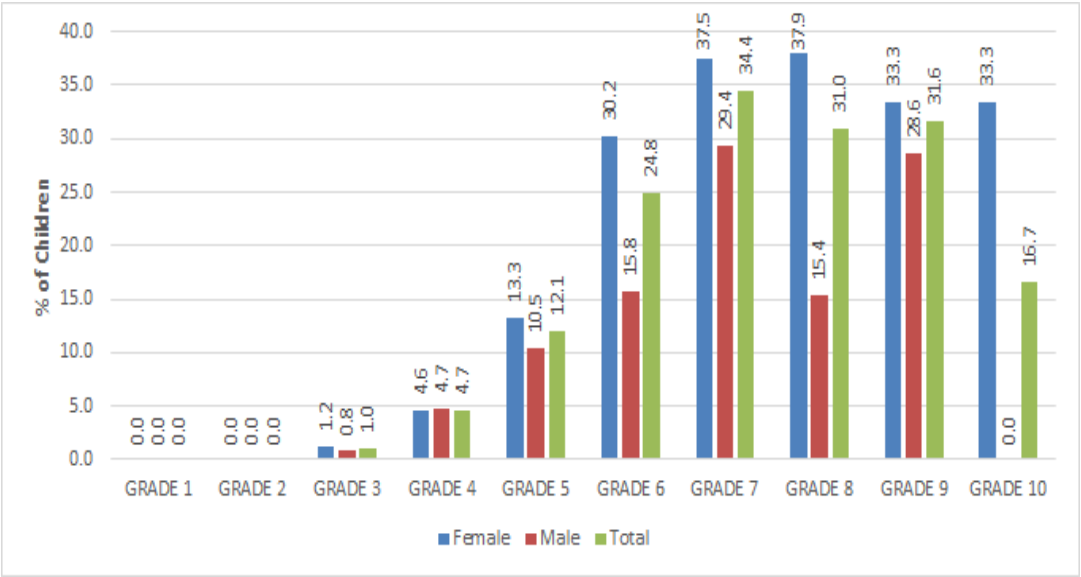
Figure 5.11: Proportion of Children Who Met the Standards for Numeracy by Grade and Gender



5.12 CLA Literacy and Numeracy results – all grades

Similar to literacy and numeracy, girls achieved both literacy and numeracy standards at a higher rate than boys in every grade. Also as with literacy and numeracy, the greatest disparities were seen in grade 6 (14.4%), grade 8 (22.5%) and grade 10 (33.3%).

Figure 5.12: Proportion of Children Who Met the Standards for Literacy and Numeracy by Grade and Gender



6. Cross Tabulation Results – Home & Community Environments and CLA outcomes

6.1 Relationships between out of school learning opportunities and ability to pass the assessment

- **How does participation in out of school learning opportunities affect whether the child is able to pass third grade literacy and numeracy standards?**

The hypothesis is that the more the child is engaged in out of school learning activities, the higher the likelihood of the child meeting the grade 3 standards for literacy, numeracy and both literacy and numeracy. It is evident from figure 6.1 that if the child is not engaged in any activities, only 9% of children were able to meet literacy standards, however, if the children are engaged in at least one activity, the proportion of children meeting literacy standards increases to 20%, and further increases to 36% with 2 or more activities. The proportion of children able to pass the numeracy and both literacy and numeracy standards increases from 1% for those not engaged in an out of school learning activity to 7% for those engaged in two or more activities.

Figure 6.1: Relationship between attendance in out of school learning activities and child's ability to pass CLA assessment

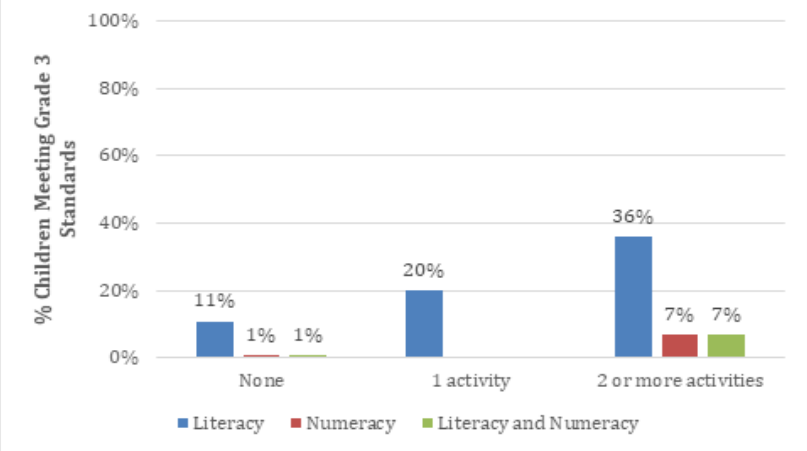


Table 6.1.1: Association Between Engagement in Out of School Learning Activities and Child's Ability to Pass Grade 3 Literacy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	2.9012	1.1637	7.2329 (T)

As seen in table 6.1.1, children 9 years of age who are engaged in out of school activities are almost three times more likely to meet the literacy standard compared to the children who are not engaged in any out of school activity. The finding is not statistically significant as the width of the confidence interval is greater than 5 percent.

Table 6.1.2: Association Between Engagement in Out of School Learning Activities and Child's Ability to Pass Grade 3 Numeracy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	2.3030	0.2028	26.1555 (T)

As seen in table 6.1.2, children 9 years of age who are engaged in out of school activities are 2.3 times more as likely to meet the numeracy standard compared to the children who are not engaged in any out of school activity. The finding is not statistically significant as the confidence interval crosses over one.

Table 6.1.3: Association Between Engagement in Out of School Learning Activities and Child's Ability to Pass Grade 3 Literacy and Numeracy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	2.3030	0.2028	26.1555 (T)

As seen in table 6.1.3, children 9 years of age who are engaged in out of school activities are 2.3 times more likely to meet the literacy and numeracy standards compared to the children who are not engaged in any out of school activity. The finding is not statistically significant as the confidence interval crosses over one.

6.2 Relationship between a supportive reading environment and ability to pass the assessment

- **How does provision of a supportive reading environment affect whether the child is able to pass third grade literacy and numeracy standards?**

The hypothesis is that if the child is provided with a supportive reading environment, they are more likely to meet the grade 3 standards for literacy, numeracy and both literacy and numeracy. Figure 6.2 shows that this hypothesis may be true as 18% of the children provided with a supportive reading environment meet the literacy standards compared to only 13% of children who are not provided a supportive reading environment. However, in the case of numeracy and both literacy and numeracy, slightly more children passed the numeracy and literacy and numeracy standards who did not have a supportive reading environment compared to those who did.

Figure 6.2: Relationship Between home reading environment and child's ability to pass CLA assessment

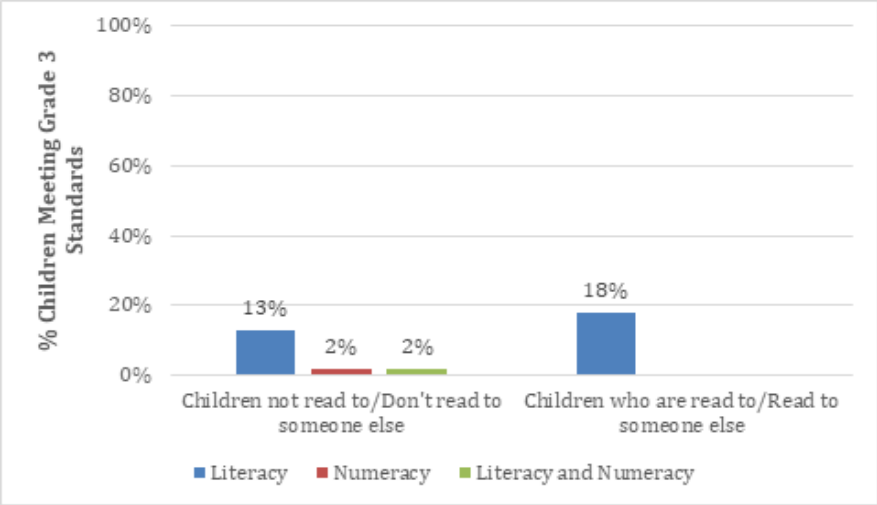


Table 6.2.1.1: Association Between Caregivers Supporting Reading Environment and Child' Ability to Pass Grade 3 Literacy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	1.4967	0.5794	3.8662 (T)

As seen in table 6.2.1, children 9 years of age whose caregivers support the reading environment are almost one and a half times more likely to meet the literacy standard compared to the children whose caregivers do not support the reading environment. The finding is not statistically significant as the confidence interval crosses over one.

Table 6.2.2: Association Between Caregivers Supporting Reading Environment and Child' Ability to Pass Grade 3 Numeracy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	0.0000	Undefined	Undefined (T)
Risk Ratio (RR)	0.9799	0.9576	1.0027 (T)

As seen in table 6.2.2, there were not enough samples to understand the association between the two groups regarding numeracy standards. However, from the risk ratio, we see that those who did not have a supportive reading environment had almost the same risk of not attaining numeracy standards as those who did. The finding is not statistically significant as the confidence interval crosses over one.

Table 6.2.3: Association Between Caregivers Supporting Reading Environment and Child' Ability to Pass Grade 3 Literacy and Numeracy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	0.0000	Undefined	Undefined (T)
Risk Ratio (RR)	0.9799	0.9576	1.0027 (T)

As seen in table 6.2.3, there were not enough samples to understand the association between the two groups regarding literacy and numeracy standards. However, from the risk ratio, we see that those who did not have a supportive reading environment had almost the same risk of not attaining both literacy and numeracy standards as those who did. The finding is not statistically significant as the confidence interval crosses over one.

6.3 Relationships between pre-school attendance and ability to pass the assessment

- **How does pre-school attendance affect whether the child is able to pass third grade literacy and numeracy standards?**

As visible in figure 6.3, 16% of children of age 9 years, who attended pre-school, are able to meet grade 3 literacy standards compared to 13% of children who did not attend the pre-school but were still able to meet the literacy standards. In terms of numeracy, and for both literacy and numeracy, 4% of those not attending preschool were able to meet the numeracy standards. There were no children who attended the pre-school and met the standards for numeracy or both literacy and numeracy.

Figure 6.3: Relationship Between Preschool Attendance and the Ability of the Child to Pass Grade 3 Literacy and Numeracy Standards

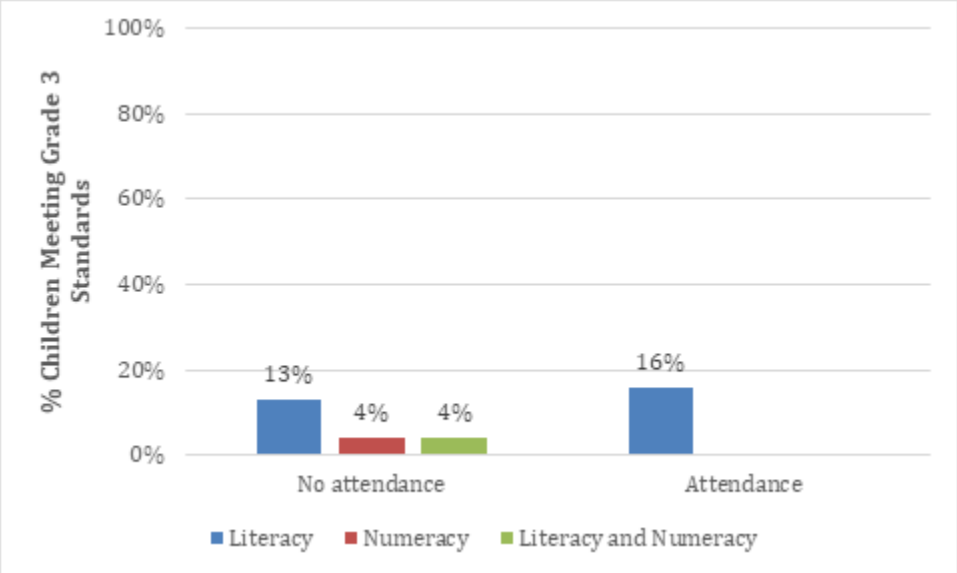


Table 6.3.1: Association between Attendance in Preschool and Child's Ability to Pass Grade 3 Literacy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	1.3301	0.5673	3.1188 (T)

As seen in table 6.3.1, children who have attended preschool are 1.33 times more likely to meet the literacy standard compared to the children who did not attend the preschool. The finding is not statistically significant as the confidence interval crosses over one.

Table 6.3.2: Association between Attendance in Preschool and Child's Ability to Pass Grade 3 Numeracy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	0.0000	Undefined	Undefined (T)
Risk Ratio (RR)	0.9620	0.9208	1.0051 (T)

As seen in table 6.3.2, there were not enough samples to understand the association between the two groups regarding numeracy standard. However, from the risk ratio, we see that those who did not attend preschool have 96% of the risk of not attaining the numeracy standards as those who did attend. The finding is not statistically significant as the confidence interval crosses over one.

Table 6.3.3: Association between Attendance in Preschool and Child's Ability to Pass Grade 3 Literacy and Numeracy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	0.0000	Undefined	Undefined (T)
Risk Ratio (RR)	0.9620	0.9208	1.0051 (T)

As seen in table 6.3.3, there were not enough samples to understand the association between the two groups regarding both literacy and numeracy standard. However, from the risk ratio, we see that those who did not attend preschool have 96% of the risk of not attaining the literacy and numeracy standards as those who did attend. The finding is not statistically significant as the confidence interval crosses over one.

6.4 Relationship between caregiver knowledge of grade requirements and child's ability to meet grade 3 literacy and numeracy standards

- **How does caregiver knowledge of grade requirements affect child performance?**

The hypothesis is that the greater the knowledge on grade requirements of caregivers of children 9 years of age, the more likely the child is able to meet the grade 3 standards. Figure 6.4, clearly shows that as the

knowledge of grade 3 benchmarks of caregivers with children 9 years of age increases, the proportion of children who are able to meet the grade 3 requirements in literacy also increases. Slightly more children of caregivers with knowledge of 1-2 requirements were able to meet the numeracy and literacy and numeracy standards than children of caregivers with no knowledge of requirements.

Figure 6.4: Relationship Between Caregiver's Knowledge of Grade Requirements and Child's Ability to Meet Grade 3 Standards

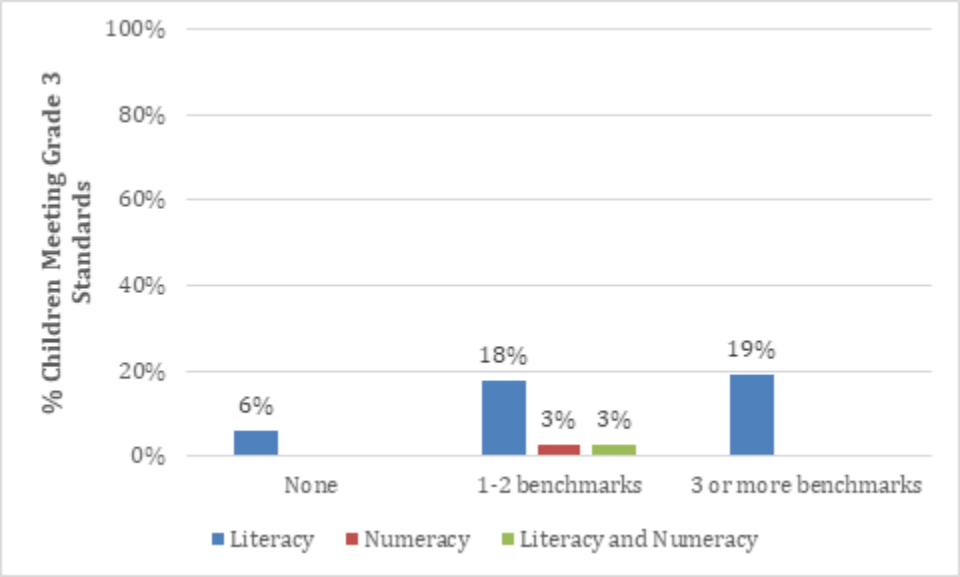


Table 6.4.1: Association Between Caregivers Knowledge of Grade Requirements and Child's Ability to Pass Grade 3 Literacy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	3.7582	1.0769	13.1150 (T)

As seen in table 6.4.1, children 9 years of age whose caregivers have knowledge of one or more grade three requirements are almost four times as likely to meet the literacy standard compared to the children whose caregivers have no knowledge of grade 3 requirements. The finding is not statistically significant as the confidence interval is between 6.26% and 1.26%

Table 6.4.2: Association Between Caregivers Knowledge of Grade Requirements and Child's Ability to Pass Grade 3 Numeracy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	Undefined	Undefined	Undefined (T)
Risk Ratio (RR)	1.0246	0.9968	1.0531 (T)

As seen in table 6.4.2, there were not enough samples to understand the association between the two groups regarding numeracy standard. From the risk ratio, we see that children of caregivers with knowledge of grade 3 standards have about the same risk of not attaining the numeracy standards as those whose caregivers did not have knowledge of the standards. The finding is not statistically significant as the confidence interval crosses over one.

Table 6.4.3: Association Between Caregivers Knowledge of Grade Requirements and Child's Ability to Pass Grade 3 Literacy and Numeracy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	Undefined	Undefined	Undefined (T)
Risk Ratio (RR)	1.0246	0.9968	1.0531 (T)

As seen in table 6.4.3, there were not enough samples to understand the association between the two groups regarding both literacy and numeracy standard. However, from the risk ratio, we see that children of caregivers with knowledge of grade 3 standards have about the same risk of not attaining both the literacy and the numeracy standards as those whose caregivers did not have knowledge of the standards. The finding is not statistically significant as the confidence interval crosses over one.

6.5 Relationship Between the Caregiver Providing Specified Place for Study and Child's ability to pass CLA assessment

- **How do caregiver practices affect the ability of a child to pass grade three standards?**

The hypothesis is that if a specified place for study is provided to a child, the higher the likelihood of the child meeting the grade 3 standards for literacy, numeracy and both literacy and numeracy. The graph in figure 6.5 does not support this hypothesis as more children who do not have a place to study were able to meet the standards when compared to those who do have a designated place to study. Only 26 caregivers responded to this question.

Figure 6.5: Relationship Between the Caregiver Providing Specified Space for Study and Child's ability to pass CLA assessment

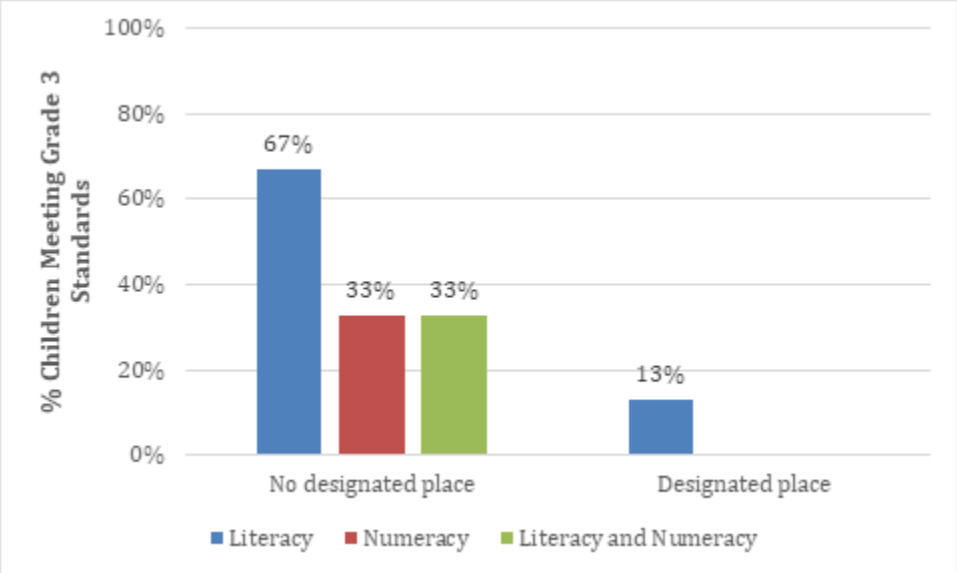


Table 6.5.1: Association Between Provision of a Specified Space for Study and the Child's Ability to Pass Grade 3 Literacy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	0.0750	0.0051	1.1047 (T)

As seen in table 6.5.1, children 9 years of age whose caregivers provide a specified space for study are 7.5% as likely to meet the literacy standard compared to the children whose caregivers do not provide a specified place of study. The finding is not statistically significant as the confidence interval crosses over 1.

Table 6.5.2: Association Between Provision of a Specified Space for Study and the Child's Ability to Pass Grade 3 Numeracy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	0.0000	Undefined	Undefined (T)
Risk Ratio (RR)	0.6667	0.2995	1.4839 (T)

As seen in table 6.5.2, there were not enough samples to understand the association between the two groups regarding numeracy standards. However, from the risk ratio, we see that children of caregivers who do not provide a specified place to study have 66.7% of the risk of not attaining the numeracy standards as those whose caregivers do provide a specified space for study. The finding is not statistically significant as the confidence interval crosses over 1.

Table 6.5.2: Association Between Provision of a Specified Space for Study and the Child's Ability to Pass Grade 3 Numeracy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	0.0000	Undefined	Undefined (T)
Risk Ratio (RR)	0.6667	0.2995	1.4839 (T)

As seen in table 6.5.3, there were not enough samples to understand the association between the two groups regarding both literacy and numeracy standards. However, from the risk ratio, we see that children of caregivers who do not provide a specified place to study have 66.7% of the risk of not attaining both literacy and numeracy standards as those whose caregivers do provide a specified space for study. The finding is not statistically significant as the confidence interval crosses over 1.

6.6 Relationship Between on time entry into grade 1 and child's ability to pass CLA assessment

- **How does on time entry into grade 1 affect the child's ability to pass grade 3 literacy and numeracy standards?**

The hypothesis is that if the child enters the school at the right age, it is more likely that the child will be able to meet the grade 3 standards for literacy, numeracy and both literacy and numeracy. The hypothesis is clearly supported by the graph in figure 6.6. A much higher percentage of children who entered grade 1 on time were able to pass the literacy standards than those who entered late into grade 1. The proportion of children who passed the numeracy and both literacy and numeracy standards was also higher among those children who entered grade 1 on time.

Figure 6.6: Relationship Between on time entry into grade 1 and child's ability to pass CLA assessment

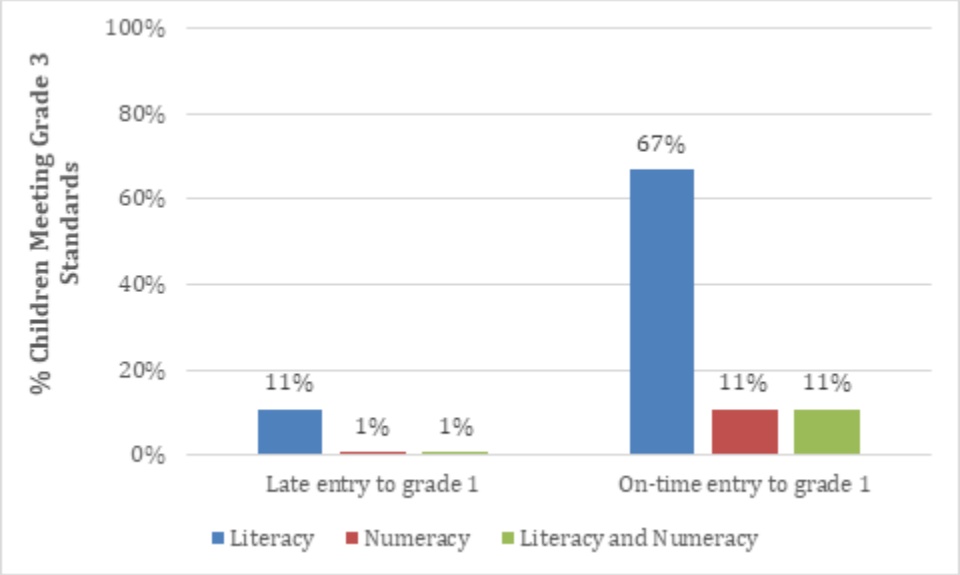


Table 6.6.1: Association Between On Time Grade 1 Entry and Child' Ability to Pass Grade 3 Literacy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	15.9000	3.6857	68.5924 (T)

As evident in table 6.6.1, children who enter on time into grade 1 are almost 16 times more likely to meet grade 3 requirements in literacy compared to children who did not enter grade 1 on time. Since the width of the confidence intervals is more than 5%, the finding is not statistically significant.

Table 6.6.2: Association Between On Time Grade 1 Entry and Child' Ability to Pass Grade 3 Numeracy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	11.0625	0.9055	135.1547 (T)

As evident in table 6.6.2, children who enter on time into grade 1 are 11 times more likely to meet grade 3 requirements in numeracy compared to children who did not enter grade 1 on time. The finding is not statistically significant as the confidence interval crosses over 1.

Table 6.6.3: Association Between On Time Grade 1 Entry and Child' Ability to Pass Grade 3 Literacy and Numeracy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	11.0625	0.9055	135.1547 (T)

As evident in table 6.6.3, children who enter on time into grade 1 are 11 times more likely to meet grade 3 requirements in both literacy and numeracy compared to children who did not enter grade 1 on time. The finding is not statistically significant as the confidence interval crosses over 1.

6.7 Relationship Between School Absenteeism and Child's Ability to Pass CLA Assessment

- **How does school absenteeism affect the child's ability to grade 3 literacy and numeracy standards?**

The hypothesis is that if the child is attending the school, the likelihood of the child meeting the grade 3 standards for literacy, numeracy and both literacy and numeracy is higher. Figure 6.7 shows that a greater

proportion of children who attended school were able to pass the literacy, numeracy, and both literacy and numeracy standards.

Figure 6.7: Relationship Between School Absenteeism and Child's Ability to Pass CLA Assessment

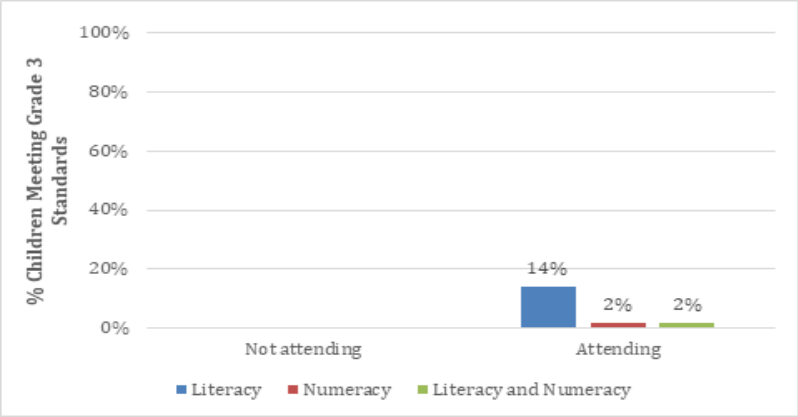


Table 6.7.1: Association Between School Absenteeism and Child' Ability to Pass Grade 3 Literacy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	Undefined	Undefined	Undefined (T)
Risk Ratio (RR)	1.1656	1.0989	1.2364 (T)

As seen in table 6.7.1, there were not enough samples to understand the association between the two groups regarding literacy standards. Since the risk ratio is slightly more than one, those who do not attend school have a slightly greater risk to not pass grade 3 standards than those attending school. The finding is highly statistically significant as the confidence interval width is less than 1%.

Table 6.7.2: Association Between School Absenteeism and Child' Ability to Pass Grade 3 Numeracy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			

Odds Ratio (cross product)	Undefined	Undefined	Undefined (T)
Risk Ratio (RR)	1.0167	0.9978	1.0359 (T)

As seen in table 6.7.2, there were not enough samples to understand the association between the two groups regarding numeracy standards. From the risk ratio we see that both groups have the same risk to not pass grade 3 numeracy standards. The finding is not statistically significant as the confidence interval crosses over 1.

Table 6.7.3: Association Between School Absenteeism and Child' Ability to Pass Grade 3 Literacy and Numeracy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	Undefined	Undefined	Undefined (T)
Risk Ratio (RR)	1.0167	0.9978	1.0359 (T)

As seen in table 6.7.3, there were not enough samples to understand the association between the two groups regarding both literacy and numeracy standards. From the risk ratio we see that both groups have the same risk to not pass grade 3 literacy and numeracy standards. The finding is not statistically significant as the confidence interval crosses over 1.

6.8 Relationship Between Caregiver's Engagement in Learning Activities and Child's Ability to Pass CLA Assessment

The hypothesis is that the more learning activities a caregiver is engaged in, the higher the likelihood of the child meeting the grade 3 standards for literacy, numeracy and both literacy and numeracy. It is evident from the graph in Figure 6.8 that only 13% of children meet literacy standards if their caregiver is not engaged in any activity. The proportion increases to 24% if the caregiver is engaged in one to three activities and further to 33% if the caregiver is engaged in four or more activities. 17% of children whose caregivers were engaged in four or more activities met the numeracy and both literacy and numeracy standards while

there were no children who met the numeracy standards whose caregiver was not engaged in four or more learning activities.

Figure 6.8: Relationship Between Caregiver's Engagement in Learning Activities and Child's Ability to Pass CLA Assessment

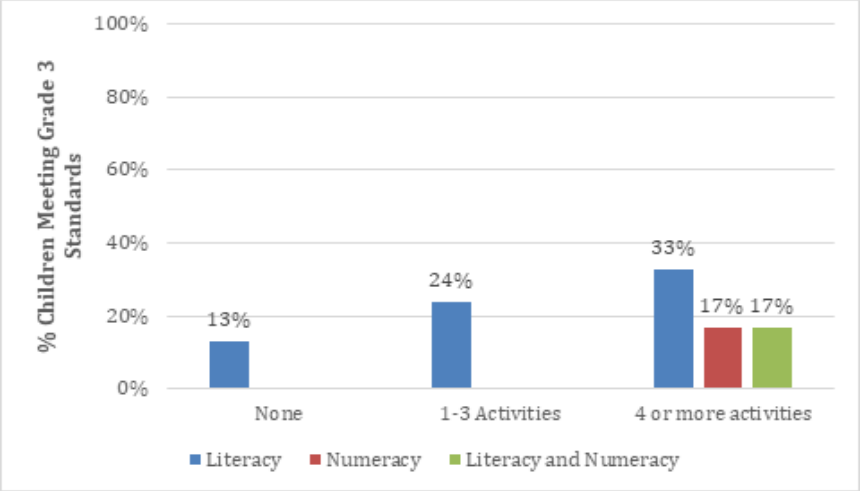


Table 6.8.1: Association Between a Caregiver's Engagement in Learning Activities and a Child' Ability to Pass Grade 3 Literacy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	2.3947	0.8278	6.9275 (T)

From table 6.8.1 we see that a child whose caregiver is engaged in learning activities is 2.4 times more likely to meet grade 3 literacy standards. This finding is not statistically significant as the confidence interval crosses over 1.

Table 6.8.2: Association Between a Caregiver's Engagement in Learning Activities and a Child' Ability to Pass Grade 3 Numeracy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper

PARAMETERS: Odds-based			
Odds Ratio (cross product)	Undefined	Undefined	Undefined (T)
Risk Ratio (RR)	1.0200	0.9812	1.0604 (T)

As seen in table 6.8.2, there were not enough samples to understand the association between the two groups regarding numeracy standards. From the risk ratio we see that both groups have the same risk to not pass grade 3 numeracy standards. The finding is not statistically significant as the confidence interval crosses over 1.

Table 6.8.3: Association Between a Caregiver's Engagement in Learning Activities and a Child' Ability to Pass Grade 3 Literacy and Numeracy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS : Odds-based			
Odds Ratio (cross product)	Undefined	Undefined	Undefined (T)
Risk Ratio (RR)	1.0200	0.9812	1.0604 (T)

As seen in table 6.8.3, there were not enough samples to understand the association between the two groups regarding both literacy and numeracy standards. From the risk ratio we see that both groups have the same risk to not pass grade 3 literacy and numeracy standards. The finding is not statistically significant as the confidence interval crosses over 1.

6.9 Relationship between caregivers of children 7-15 years of age meeting teachers and the child's ability to meet CLA standards

- **Does having caregivers of Children 7-15 years meeting teachers regularly influences a child meeting literacy and numeracy standards**

The hypothesis is that the more times the caregiver meets the teacher, the higher the likelihood of the child meeting the grade 3 standards for literacy, numeracy and both literacy and numeracy. Figure 6.9 shows that children of caregivers who have met with teachers two or more times had a higher rate of passing the grade 3 literacy standards than children of caregivers who have never met the teacher or those who met just once. Very few of any of the three groups passed the numeracy standards.

Figure 6.9: Relationship Between the Caregiver Meeting Teachers Regularly and Child's Ability to pass CLA assessment

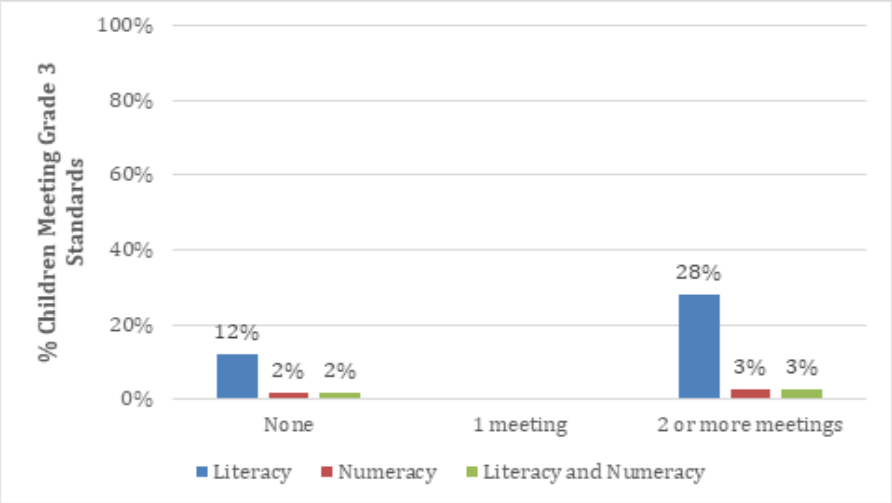


Table 6.9.1: Association Between a Caregiver's Meeting with Teachers and a Child's Ability to Pass Grade 3 Literacy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	1.6899	0.7212	3.9597 (T)

From table 6.9.1 we see that children of caregivers who have met with the teacher are 1.7 times as likely to meet grade 3 literacy standards as children of caregivers who have never met with the teachers. This finding is not statistically significant as the confidence interval crosses over 1.

Table 6.9.2: Association Between a Caregiver's Meeting with Teachers and a Child's Ability to Pass Grade 3 Numeracy Standards

	Point	**95% Confidence Interval**	
	Estimate	**Lower**	**Upper**
PARAMETERS: Odds-based			
Odds Ratio (cross product)	1.0625	0.0943	11.9657 (T)

From table 6.9.2 we see that children of caregivers who have met with the teacher are slightly more likely to meet grade 3 numeracy standards than children of caregivers who have not met with teachers. This finding is not statistically significant as the confidence interval crosses over 1.

Table 6.9.3: Association Between a Caregiver's Meeting with Teachers and a Child's Ability to Pass Grade 3 Literacy and Numeracy Standards

	Point	95% Confidence Interval	
	Estimate	Lower	Upper
PARAMETERS: Odds-based			
Odds Ratio (cross product)	1.0625	0.0943	11.9657 (T)

From table 6.9.3 we see that children of caregivers who have met with the teacher are slightly more likely to meet grade 3 literacy and numeracy standards. This finding is not statistically significant as the confidence interval crosses over 1.

SUMMARY OF CLA ANALYSIS AND RECOMMENDATIONS FOR EDUCATION PROGRAMMING

Summary Table 2: Logistic Regression to determine association between the ability of children of age 9 meeting grade 3 standards for literacy and different interventions							
Term	**Odds Ratio**	**0.95**	**C.I.**	**Coefficient**	**S.E.**	**Z-Statistic**	**P-Value**
Pre School Attendance (Yes/No)	0.4282	0.1832	1.0012	-0.8481	0.4333	-1.9572	0.0503
Grade Requirement (Yes/No)	0.3828	0.1640	0.8933	-0.9603	0.4324	-2.2209	0.0264
Out of School Learning (Yes/No)	1.3215	0.4258	4.1011	0.2788	0.5778	0.4825	0.6295

Reading Environment (Yes/No)	0.7121	0.2331	2.1752	-0.3395	0.5697	-0.5959	0.5512
On-Time Grade 1 Entry (Yes/No)	4.5410	0.6466	31.8897	1.5131	0.9945	1.5215	0.1281
Learning Activities (Yes/No)	1.1139	0.4185	2.9647	0.1079	0.4994	0.2160	0.8290
Meeting with Teachers (Yes/No)	1.0287	0.3868	2.7362	0.0283	0.4991	0.0567	0.9548

From the summary table 2 above, we can conclude that when compared to other interventions, on time entry in grade 1 will likely have the strongest residual effect on literacy. Promoting on time entry in grade 1 will likely have 4.5 times more the residual effect on children meeting literacy standards compared to the other interventions. Next largest residual effect of 1.3 is of children engaged in out of school learning activities, i.e. it is 1.3 times more likely that children who are engaged in out of school learning activities will be able to meet literacy standards compared to other interventions. Finally, when caregivers are engaged in learning activities with their children, it has a very small residual effect of 1.1 i.e. it is 1.1 times more likely that children whose caregivers engage in learning activities with their children will be able to meet the literacy standards.

Summary Table 3: Association between the ability of children of age 9 meeting grade 3 standards for numeracy and different interventions

Term	Odds Ratio	0.95	C.I.	Coefficient	S.E.	Z-Statistic	P-Value
Out of School Learning (Yes/No)	0.0582	0.0077	0.4374	-2.8437	1.0290	-2.7636	0.0057
On-Time Grade 1 Entry (Yes/No)	0.3048	0.0330	2.8125	-1.1882	1.1338	-1.0479	0.2947
Meeting with Teachers (Yes/No)	0.0222	0.0031	0.1605	-3.8077	1.0092	-3.7731	0.0002

For the regression model on literacy (Summary table 2), we included seven interventions in the regression model. However, for numeracy, we have to remove some of the interventions for which we could not calculate an odds ratio in the 2x2 tables. We know from 2x2 tables, that those interventions did not interact in the model.

Summary tables 3 (above) and 4 (below) both show the same associations between three interventions and a child meeting numeracy standards (Summary table 3) and a child meeting both literacy and numeracy standards (Summary table 4). The intervention with the strongest residual effect on attainment of grade 3 numeracy and grade 3 literacy and numeracy standards is on-time grade 1 entry.

Summary Table 4: Association between the ability of children of age 9 meeting grade 3 standards for literacy and numeracy and different interventions

Term	Odds Ratio	0.95	C.I.	Coefficient	S.E.	Z-Statistic	P-Value
Out of School Learning (Yes/No)	0.0582	0.0077	0.4374	-2.8437	1.0290	-2.7636	0.0057
On-Time Grade 1 Entry (Yes/No)	0.3048	0.0330	2.8125	-1.1882	1.1338	-1.0479	0.2947
Meeting with Teachers (Yes/No)	0.0222	0.0031	0.1605	-3.8077	1.0092	-3.7731	0.0002

7. Conclusions and Recommendations

7.1 Overall Outcomes

School Preparedness

This baseline survey revealed that the total IDELA score of children 5.6-6.5 years of age was 48.7%, and only 6% of them have mastered IDELA skills who achieved 75% or more in the different domains: emergent literacy, emergent numeracy, social-emotional and motor skills. The domain with the highest average score was motor skills followed by Emergent Numeracy, Socio-emotional, then Emergent Literacy. Emergent literacy had been consistently the lowest from children 3.5-6.5 years of age. Looking at the differences between gender and development score, results showed that there were small differences between boys' and girls' scores. In the cluster level, average IDELA scores varied from 42.3% in Svay Leu to 52.5% in Bakk Anloung, a range of 10.2%.

There are factors that considered which affect the IDELA score of the children were the caregivers' support having available books at home and active engagement in learning of their children. In the cross tabulation

analysis of caregivers' support at home having at least one children's book, it is clearly visible that as the number of books has increased, so does the IDELA score of children 5.5-6.5 years of age, i.e. the IDELA score of these children with no books got 32%, while 34% IDELA score when caregivers have one to two books and 40% IDELA score when caregiver has three or more books. The Analysis of Variance (ANOVA), further reveals that the finding is highly statistically significant that between children whose caregivers have one or more books and if caregivers have no books. Linear Regression also confirms this relationship by showing correlation. As for now, less than 10% of caregivers' have 3 or more books available books at home both for groups of children 0-2 and 3-6 years of age, Svay Leu having the least among the eight clusters. For one or two books available at home, caregivers with 0-2 years of age having 8.83% and 3-6 years of age having 23.38%, TPR-D having the least percentage among the eight clusters.

Another support that caregivers provide with their children is engaged in learning activities with children. The findings showed that it is evident that for children 5.5-6.5 years of age whose caregiver who is not involved in any learning activity, the average IDELA score is 31%, which increases to 40% if the caregiver is engaged in one to three activities and further to 42% when a caregiver is engaged in four or more activities. However, the ANOVA showed that in this case there is no significant difference in the average IDELA score between two groups in both scenarios, and the linear regression cannot guarantee the relationship between these two, either. In this baseline result, the caregivers who engaged in learning activities four or more times for both groups of children from 0-2, 3-6 and 7-18 years of age was less than 10% and 22% of the caregivers didn't engage in any learning activities with their children.

Recommendations

- In the cascade group training, encourage and deepen the understanding of caregiver on the significant impact of reading children's book at home for children at the very young age. If caregivers have limited resources to buy these books, strengthen and reinforce the easy access of these in the community library, not only for children in the children's club but also with caregivers.
- Strengthen, and continue to build the capacity and confidence of the cascade volunteers to in learning the practices being promoted in helping the children to increase positive, active caregiver engagement with children from birth to three years of age in learning activities. Though in this study, caregivers' engagement in learning activities with children did not show any significant impact but the attitude of caregivers toward supporting and seeing the value of education is creating an impact, i.e. sending their children to school, creating a learning environment from home which provides them encouragement.

Early Grade Success

This survey showed that there were only 1.6% of nine-year-old children who were able to achieve the national grade level standards in both third grade literacy and numeracy skills. When disaggregated by

gender, the girls have 11.9% higher percentage than boys. In cluster level, the result in literacy skill varied considerably from 3.8% in Ta Siem to 23.5% in Trapeang Prasat-E; in numeracy, only three clusters have attained percentage from 3.2% in Trapeang Prasat D, 5,6% in Trapeang Prasat-C, and 5.9% in Trapeang Prasat-E. Same children from these three clusters attained both numeracy and literacy standards.

In terms of looking at the complete literacy gain of children in grade 3, only 18.8% achieved the comprehension level. There were identified gaps with many children promoted in grades 4 to 8 whose competency in literacy did not reach comprehension level; particularly children in grade 8 only 81% of them completed the comprehension level. Results disaggregated by gender, boys lagged behind with girls in attaining the literacy standards in every grade. The greatest disparities were found in grade 6 (27.3%), grade 8 (28.2%) and grade 10 (33.4%). The proportion of children meeting the literacy standards increased in every grade until the 10th grade where only 50% of youth achieved the grade 3 standards for literacy. It is good to note that this represents three of six children in the sample who were in the 10th grade.

In numeracy gains, nearly half of children in grade 3 were able to perform at the addition level. However, this gain was only a 1.1% increase compared with children in grade 2, while other arithmetic skills (subtraction, multiplication, division and problem solving) were lacking considerably in the grade 3 level. Furthermore, over one-third of children in grade 7 attained the problem solving level but there was no increase in that proportion for children in grade 8; less than half in the same level achieved division level and only 80% in multiplication level. As with literacy, girls performed better on the numeracy standards in every grade. Also as with literacy, the greatest disparity was seen in grade 6, (11.2%) grade 8, (18.3%) and grade 10 (33.4%).

There are seven factors that are believed to be affecting the achievement of children to complete grade three with the literacy and numeracy skills which match national standards for success: participation in out of school learning opportunities, supportive reading environment, pre-school attendance, caregiver knowledge of grade requirements, caregiver providing specified place for study, timely entry into grade 1, school absenteeism, caregiver's engagement in learning activities, and caregiver's meeting with teachers. In cross tabulation analysis, these different activities were further studied using either Odds Ratio or Risk Ratio to see the association between an activity and the capacity of children to complete the grade three national standard competency.

The highlights of the cross tabulation analysis were: if the child is attending the school, the likelihood of the child meeting the grade 3 standards for literacy is higher and those who do not attend school have a slightly greater risk to not pass grade 3 standards than those attending school. This is highly statistically significant which means that the difference observed in the sample can be a basis for us to make a conclusion of the effectivity of engaging children in an activity towards the population. However, it is not true for numeracy, and both literacy and numeracy but we cannot conclude its non-effectivity either because both are not statistically significantly. Moreover, the results showed that if the child is not engaged in any

activities, the caregiver having greater knowledge on grade requirements of caregivers of children 9 years of age, children who entered grade 1 on time, the more learning activities a caregiver is engaged in, and the more times the caregiver meets the teacher, the higher the likelihood of the child meeting the grade 3 standards for literacy, numeracy and both literacy and numeracy. However, all the findings say that not statistically significant which means that the difference observed in the sample cannot be made a basis for us to make a conclusion of the effectivity of these activities of towards the achievement the grade 3 standard competencies of the whole population.

On the other hand, these activities: providing a supportive reading environment for children, children attending preschool, and providing specified place for study in this survey did not support the hypothesis of meeting the literacy, numeracy and both literacy and numeracy. However, since these findings were not statistically significant, we cannot conclude the non-effectivity of these activities toward the achievement grade 3 standard competencies of the whole population.

Furthermore, we can conclude that when compared to other interventions, on time entry in grade 1 will likely have the strongest residual effect on literacy. Promoting on time entry in grade 1 will likely have 4.5 times more the residual effect on children meeting literacy standards compared to the other interventions. Next largest residual effect of 1.3 is of children engaged in out of school learning activities, i.e. it is 1.3 times more likely that children who are engaged in out of school learning activities will be able to meet literacy standards compared to other interventions. Finally, when caregivers are engaged in learning activities with their children, it has a very small residual effect of 1.1 i.e. it is 1.1 times more likely that children whose caregivers engage in learning activities with their children will be able to meet the literacy standards.

For the regression model, the intervention with the strongest residual effect on attainment of grade 3 numeracy and grade 3 literacy and numeracy standards is on-time grade 1 entry.

Recommendations

- Promotion of entry into grade one which is 6 years of age as recommended by national standard across the target communities, since on-time grade 1 entry is expected to have the highest impact among the 7 interventions. In addition to this, continue teachers support on teacher's training on effective methods of teaching children on the first three grade school levels.
- Improved the content of the children's club curriculum more methods and strategies of learning literacy and numeracy, and create routine activities to enhance their skills to address even the gaps for children in higher level achieve the national standard for these competencies. Though the findings said that it cannot guarantee the effectivity of this intervention to the performance of the child in achieving the target grade 3 competencies. We can still bank in the positive impact of these community learning spaces as mentioned in the school readiness section.

- Promote strong awareness of caregivers to engage in the learning activities of children such as reading, storytelling, and helping their children to study and do their homework at home.

Conclusion

The results of this baseline survey showed the serious issue the early grade competency of nine-year-old children who are able to achieve the national grade level standards in both literacy and numeracy skills, including the gaps that were seen for children in the higher grade level not achieving the competencies that they could have been achieved. As well as the results in the level of mastered IDELA score of children entering grade 1, especially in emergent literacy.

7.2 Program Implications and Action Plan

As part of our program pivot, education is one of the sectors we identified to be our focus. We will use this result to reflection on which of the current interventions we have will still holds true and which of these we need to think more taking into consideration the interventions which will highly impact the achievement of our big goal of seeing the children reach their God-given potential such as interventions prior to grade 1 entry, we'll focus our caregivers having available children's book at home. For caregiver intervention, we'll focus on the behavior to promote that showed greater impact in the results on the cross tabulation analysis such as having available children's books, especially with children 0-6 year of age and engaging themselves in the learning activities of children at home such as helping do their homework and in their studying. More importantly, the results from this survey will provide closer engagement with government and community members in order to identify ways to improve learning outcomes for children. FH Cambodia will provide more support to communities, not only to prepare children to be ready for grade 1 entry in school but also in early grade success.

Annexes

Annex A. Methodology (Terms of Reference)