E²QUIP2
Educational Quality Improvement Program
Policy • Systems • Management

Using Opportunity to Learn and Early Grade Reading Fluency to Measure School Effectiveness in Nepal

Executive Summary

In 2008, the Educational Quality Improvement Program 2 (EQUIP2), in partnership with Save the Children, conducted a study of school effectiveness in Nepal. Data were collected from 23 Save the Children-supported schools in the districts of Kailali and Kanchanpur. The study aimed to determine whether schools provide adequate opportunities to learn and whether teachers and students use those opportunities to ensure that children learn to read fluently in the language of instruction (Nepali) by Grade 3.

The study found that few children at the start of Grade 3 had learned to read fluently enough to ensure comprehension. Forty-four percent of the students could not read a single word of Grade 3 text. Only 38 percent of students could read at a rate of 40 words per minute (wpm) or faster, a rate that may ensure comprehension. Although most students read below a desirable level for Grade 3, almost all students had adequate pre-literacy skills: they recognized letters and could orient themselves in relation to text. Differences in reading fluency were most pronounced between native and non-native Nepali speakers. Fifty-two percent of non-native Nepali speakers were unable to read compared to only 36 percent of native Nepali speakers. Girls speaking Tharu at home tended to score lower in areas of letter knowledge, reading fluency, and comprehension than the rest of the sample. We also found that the percentage of Grade 3 children who could not read at all varied considerably from 4 percent of students at one school to 81 percent of students at another school.

The data collected on opportunities to learn reveal that the low student reading performance was, in part, attributable to the amount of unused potential instructional time. School being closed, teacher absence, and time lost during the school day combined to reduce the amount of time available for instruction by as much as 26 percent, an equivalent of 49 out of 192 days in the school year.

The actual time available for instruction—when school was open and teachers and students were present—was further reduced by the manner in which teachers and students used their time in class. Observations of student and teacher activity in Grade 1, 2, and 3 classrooms revealed that, on average, 40 percent of students were off task and not engaged in learning during a lesson. Students were most frequently off task when the teacher was off task and not actively leading a lesson or assigning activities to the students. When these measures of time-on-task were taken into account, we found that schools lost the equivalent of an additional 58 days of potential instruction time because of off-task teachers and students.

Closer examination of the data on classroom activity determined the amount of time students spent on reading-related activities. We observed little instruction in reading, little student use of books or other written materials, and almost no students reading. Students were observed participating in these reading activities during only 8 percent of the classroom observations.

This research demonstrates that: a) teacher and student attendance need to be more closely monitored and the factors that impact them addressed; b) the daily school schedule needs to be better managed to ensure adequate time for reading instruction in the early grades; and c) teachers need to learn instructional strategies to engage students in reading or reading-related exercises. Furthermore, given the low levels of reading fluency, schools need strategies for building the reading skills of students throughout the primary grades, as few, if any, are learning to read well enough to learn across all subject areas.

Introduction

Save the Children USA has supported schools and communities in the Kailali and Kanchanpur districts of Nepal for the last 25 years. Their current program serves more than 70,000 students in these districts. In 2008, the Education Quality Improvement Program 2 (EQUIP2) teamed with Save the Children to investigate the effectiveness of the schools receiving Save the Children support. School effectiveness was treated two ways in this study. First, since literacy is perhaps the most critical outcome of primary education, the study assessed whether students were learning to read by Grade 3. Second, the study gathered and analyzed data to determine whether schools consistently provided opportunities for students to learn, and in particular, to learn to read. The findings presented in this report are a first step in helping Save the Children, and others, identify ways to improve school support efforts in Nepal and elsewhere.

Background and Framework

Progress toward providing education for all requires countries to identify and employ models of effective schooling that can reach rural, poor children. Beginning in 2003, the Education Quality Improvement Program 2 (EQUIP2) examined whether complementary, community-based schools were such a model. Through a series of ten case studies titled *Meeting EFA: Reaching the Underserved through Complementary Models of Education*, EQUIP2 developed a methodology for assessing complementary programs' cost-effectiveness in terms of providing access, ensuring completion, and promoting learning.

Based on this research, EQUIP2 found that some programs supporting complementary models are more cost-effective than their public school counterparts in part because they offer a more consistent opportunity to learn. Complementary program schools were found to share a number of characteristics: schools located near students, school schedules adjusted to fit the local lifestyle, more regular student attendance, more regular teacher attendance, and scaled-back curriculum focused on core skills.

To build on these findings, EQUIP2 examined opportunity to learn as a framework for understanding how schools can improve teaching and learning. In *Opportunity to Learn:*

A high impact strategy for improving educational outcomes in developing countries, EQUIP2 identified and justified 12 factors of a foundational opportunity to learn:

1. Percentage of days school is open;
2. Teacher attendance;
3. Student attendance;
4. Percentage of the school day available for instruction;
5. Percentage of student time-on-task;
6. Equivalent percentage of days available for instruction;
7. Percentage of students with a textbook;
8. Percentage of observed textbook use;
9. Percentage of time spent reading;
10. Grade 3 reading ability;
11. Class size; and
12. School support.

To understand how these factors interact to promote learning, better tools for evaluating student literacy skill development are needed. One drawback of the EQUIP2 complementary education research was the scarcity of data on student learning outcomes. The use of proxies such as end-of-cycle exams is not ideal because, as Thomas Kellaghan (2004) noted, such exams discriminate between high achieving students rather than reflect the range of all students' performance. USAID investment in early grade reading assessment (EGRA) methodologies offered EQUIP2 a chance to expand its research on school effectiveness.

EGRA provides a methodology for quickly assessing a variety of early literacy skills, which can be used to gauge school and/or system effectiveness at fostering acquisition of those skills. The EdData II project in particular has been instrumental in promoting and improving EGRA and has supported its application in almost 20 countries. However, one of EGRA's limitations is the floor effect: It does not measure the skills of students unable to read letters, words, or connected text. To remedy this, the Concepts about Print (CAP) methodology was used to evaluate pre-reading skills in students who are non-readers.

The combination of the opportunity to learn framework, EGRA, and CAP is the inspiration behind EQUIP2's research on effective schools. This research is based on the idea that school effectiveness, as measured by whether the school enables children to learn to read, is a function of how well the school ensures an opportunity to learn and whether it draws on teaching approaches that make the best use of instructional time. With this in mind, the study attempts to answer the following research questions:

• How well do schools provide opportunity to learn?
• How does actual opportunity to learn compare to potential opportunity to learn?
• How does opportunity to learn vary across schools?

Save the Children afforded EQUIP2 access to schools in Kailali and Kanchanpur where the organization operates and lent the services of a Research Fellow. This paper presents the results of the collaboration between Save the Children and EQUIP2 in Nepal.

Context

Nepal has rich cultural, ethnic, and linguistic diversity, but struggles against high rates of poverty, ethnic discrimination, and an often unstable political atmosphere. Nepal's economic and social development has lagged far behind that of other South Asian countries and remains one of the poorest nations in the world. According to UNICEF, as of 2007, 55 percent of Nepal's population lived below the international poverty line, earning less than USD1.25 per day. Although the incidence of poverty has declined slightly over time, income inequality has continued to rise. A key factor behind this growth in inequality has been the head of household's education level as women and ethnic minorities are often excluded from the education system or provided with the poorer services (ADB, 2009).

While Nepali is the country's national language, it is spoken by only 41 percent of the population. The majority of Nepalese speak over 100 other languages spoken by different ethnic groups. While many children do not learn Nepali at home, they find themselves in a school system that expects them to learn in the national language.

Table 1. Basic information about schools in the target area

	Kailali District	Kanchanpur District	Total
Total Number of Schools	140	115	255
Total Enrollment	39,062	31,421	70,483
% girls	47%	51%	49%
Number of Schools Receiving Support for at Least 5 Years	21	115	
Number of Schools Receiving Support for 3 to 4 Years	119	0	

Save the Children works in partnership with local NGOs in over 40 districts to implement early childhood development, primary education, school health and nutrition, and adolescent development programs. The primary education program in Kailali works with the Nepali NGO Backward Society Education (BASE) and the program in Kanchanpur works with the Nepali NGO the Nepal National Social Welfare Association (NNSWA). These programs include several components that create more positive learning environments for children, improve school effectiveness, and strengthen community involvement. Table 1 summarizes basic information about the Save the Children programs. More than half of the schools have received support from Save the Children for five years or more, including all of the schools in the Kanchanpur district.

In both districts, Save the Children programming supports teachers, students, and school administrators. As part of the Child Friendly Schools Initiative, Save the Children works with schools to establish reading corners, provides active learning and child-centered instruction training and workshops, and conducts classroom visits. Save the Children also provides learning materials to schools. Through the School Management Committee Strengthening Program, Save the Children provides management committees with training and support to conduct school self-assessments and to develop

school improvement plans. Save the Children also works with local governments and parents to ensure that all children under five years receive immunization, de-worming, and vitamin A supplements provided by the Government of Nepal.

Sampling and Methodology
Sampling
From the universe of 255 Save the Children schools, the five schools that had been exposed to the selected reading passage during piloting were eliminated. The remaining 250 schools were stratified based on district location, distance from a town center, and participation in each of the Save the Children education programs.

Table 2. Characteristics of sample schools

	SC Kailali District	Control Kailali District	SC Kanchanpur District	Control Kanchanpur District	Total
Total Number of Schools	10	4	6	3	23
Receiving SC support:					
for more than 7 years	3	-	3	-	16
for 5 to 7 years	3	-	2	-	
for 3 to 4 years	4	-	1	-	
for 0 to 2 years[a]		3		1	
Total Enrollment	5,394	2,469	3,074	461	11,398
Grade 3 Enrollment	502	318	423	79	1,322
Average Grade 3 Class Size	43	59	50	20	44

a. Three of the control schools were participating in Save the Children's School Health and Nutrition program. Given that this was the only aspect of the program in which they were participating, they were still considered control schools within this sample.

Save the Children was implementing eight programs in the districts of Kailali and Kanchanpur and schools were categorized by the number of programs in which they participated and by the number of years of participation. A sample of 20 Save the Children-supported schools was then randomly selected to mirror the characteristics of the universe. However, due to weather conditions, unofficial school closings, and other complications, researchers were unable to visit 4 of the schools, resulting in a final sample of 16 Save the Children-supported schools. In addition to these 16 schools, 7 other schools located in the same districts were chosen as a control group. The control schools were similar to Save the Children schools in terms of size, distance from town, and students' socio-economic background, but they were not receiving support from Save the Children primary education programs at the time of the study. Also, 55 percent of students in control schools reported speaking Nepali at home compared to only 45 percent of students at Save the Children schools. The characteristics of the final sample of 23 schools are summarized in Table 2 and in Annex A.

Methodology

The research team spent one day visiting each school. A visit consisted of six activities:

- A general observation noting the presence of certain school facilities and whether teachers and students were inside or outside the classroom;
- A one hour observation in Grade 1, 2, and 3 classrooms using the Stallings Observation Instrument;
- An interview with the principal to obtain information on student enrollment, teachers, teacher and student attendance, support visits received by the school, and community participation at the school level;
- Interviews with each of the teachers observed;
- Interviews with individual students; and
- Two reading assessments measuring print awareness and basic literacy skills.

For the student interviews and reading tests, the team randomly selected 20 students from Grade 3 at each school in a boy-to-girl ratio reflective of the gender balance in the full class. The students were first asked a number of questions pertaining to their home environment and attendance at school. The literacy tests included CAP questions to assess pre-reading skills and student familiarity with printed text and books and EGRA components to assess the number of letters recognized in isolation, the number of words read correctly in isolation, and the number of words read correctly in context per minute. The number of words read correctly per minute was used as the measure of reading fluency, a recognized and robust index of reading comprehension that reliably differentiates between strong and poor readers as demonstrated in Matthew Jukes' 2006 study, *Development of Assessments of Reading Ability and Classroom Behavior.*

The letter recognition, reading fluency, and reading comprehension assessments were developed by a Save the Children Alliance team as part of the four country study of Rewrite the Future (Naylor et al., 2008).

Save the Children staff pilot tested additional text for this sample by choosing grade-appropriate passages from past editions of government issued textbooks. Passages were altered slightly to prevent the possibility of children who had seen them previously reading from memory. Those students who were able to read at least 40 words in the first minute were asked to finish the passage and answer four reading comprehension questions.

Table 3 provides a summary of student characteristics. Clearly, students were split between two linguistic groups: those who reported speaking Nepali as their mother tongue (47 percent) and those who did not (53 percent). Of those who reported not speaking Nepali at home, the vast majority spoke Tharu. Schools varied in the percentage of Grade 3 students who reported speaking Nepali at home. In 30 percent of the schools, between 75 and 100 percent of students reported speaking Nepali, while in another 30 percent of the schools, less than 25 percent of students reported speaking Nepali. The two districts also differed significantly in terms of language: 58 percent of students in Kanchanpur reported speaking Nepali, while in Kailali, 51 percent reported speaking Tharu and only 41 percent spoke Nepali.

Table 3. Characteristics of students in the sample

Number of Grade 3 students tested	480
Boys	54%
Girls	48%
Language spoken as mother tongue:	
Nepali	47%
Tharu	41%
Rana Tharu	8%
Doteli	2%
Other	2%
Average age (years)	10
% overage (older than 10 years)	30%
% who attended kindergarten	66%
% who did not repeat Grade 3	94%
% who live 10 min. or less from school	48%
% who walk 10 to 30 min. to school	38%
% who walk more than 30 min. to school	15%
Average family size	7
% of students who earn money for work	0%
% who have in their home:	
- a radio	66%
- an inside toilet	22%
- electricity	68%
- a television	25%
- a refrigerator	0%

The majority of students in the sample (94 percent) were in their first year in Grade 3 and 66 percent reported having attended kindergarten. Almost all children in the sample (86 percent) reported living within a 30 minute walk to school. Two-thirds of students said they had electricity, but only 25 percent reported having a television and 22 percent said their house had an inside toilet.

Limitations of the Study

While the data from this study are robust and representative of education in the Kanchanpur and Kailali districts, there are important limitations to the methodology and data. While 480 students were tested, the school sample size was limited due, in part, to the day-long school visits. The small sample of schools made the identification of relationships between variables at the school level more challenging, limiting the conclusions drawn from the study about schools in Nepal as a whole. Furthermore, students' performance on the reading assessments may have been negatively affected by their unfamiliarity with the EGRA methodology. Only 47 percent of the students

identified Nepali as their mother tongue, limiting their performance on the Nepali-only reading assessment. Students were tested in Nepali because it was the official language of instruction in which students were expected to be literate. Also, the EGRA and CAP assessments were not developed to be comprehensive measures of learning. They are targeted evaluations of students' pre-reading and reading skills, and thus only measure specific skills.

The classroom observations covered multiple types of lessons, and the data do not reflect only reading or language instruction. Rather, the observation data provided a picture of instruction in general. The data show that the use of time in class was fairly consistent across all subjects observed. The observation data also included information from visits to Grade 1, 2, and 3 classrooms. The intention was to observe the nature of instruction across all early grades, which reflected students' instructional experiences during their first three years in a particular school.

All instruments were translated from English into Nepali and were adapted to be relevant and culturally appropriate. Responses and data were translated back into English for analysis and it is quite possible that some errors occurred when moving information between the two languages.

Finally, the interview protocols and questionnaires were developed in English and translated into Nepali and culturally adapted for the Kanchanpur and Kailali districts, after which the responses were translated back into English for analysis. It is likely that some errors occurred while moving between languages.

Findings
EGRA Results

There was a strong correlation between students' CAP scores, letter recognition, and oral reading fluency of text from Grades 2 and 3. Therefore, Grade 3 reading fluency was used as the indicator of student literacy. Letter recognition and CAP were used to examine the pre-reading skills in the students with the lowest reading fluency scores.

Figure 1 depicts the distribution of oral reading fluency scores for students in the sample. Forty-four percent of Grade 3 students assessed were unable to read a single word. Moreover, the sample was clearly split between students unable to read a single word (44 percent) and those able to read 40 words per minute (wpm) or more (38 percent).
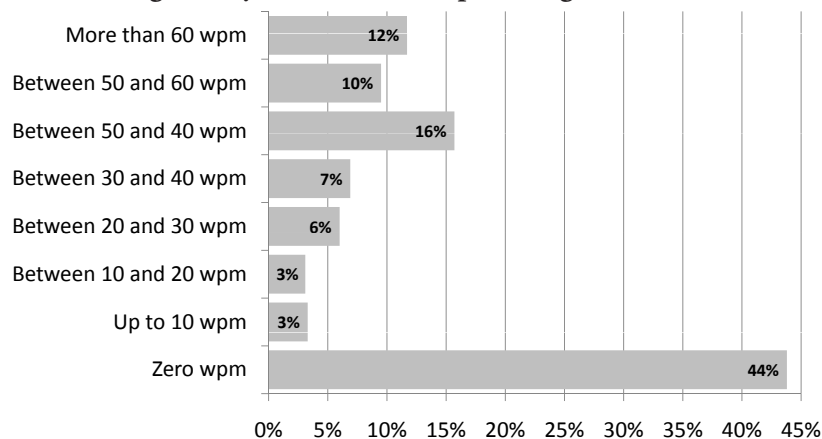
Research conducted by Helen Abadzi (2008) suggests that students learning English or Spanish should be able to read 80–90 wpm by Grade 3. As no studies on the development of reading fluency for Nepali speakers have been conducted, it is difficult to determine a similar benchmark for the students in this study. However, the results suggest that the immediate issue is not whether students are reading too slowly, but whether they are reading at all.

Given this distribution, student demographic variables were examined to better understand the split in reading scores. Figure 2 shows that non-native Nepali speakers were more likely to be unable to read at all (52 percent of non-native Nepali speakers
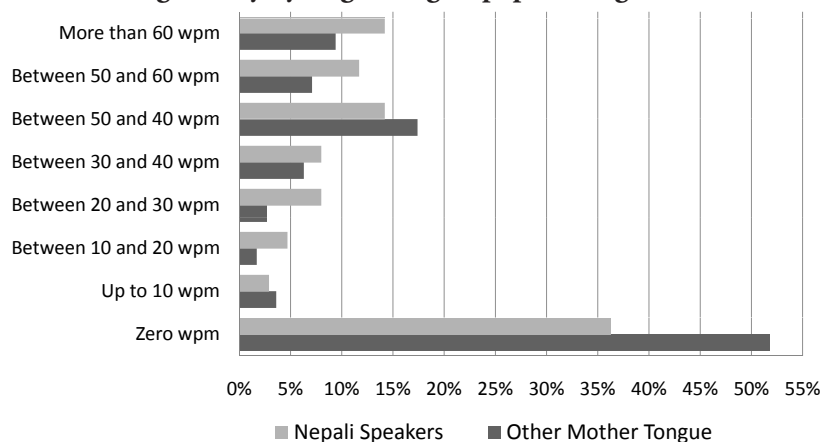
compared to 36 percent for native Nepali speakers). Also, fewer non-native Nepali speakers read more than 40 wpm (34 percent compared to 40 percent of native Nepali speakers). However, in general, the same pattern of non-readers and readers persisted for native and non-native Nepali speakers. In fact, if students scoring zero on the reading fluency assessment are removed, there was no difference in the average words per minute read by students in the three main language groups (see Table 4).

Figure 1. Reading fluency for all students, percentage of students who could read

Category	Percentage
More than 60 wpm	12%
Between 50 and 60 wpm	10%
Between 50 and 40 wpm	16%
Between 30 and 40 wpm	7%
Between 20 and 30 wpm	6%
Between 10 and 20 wpm	3%
Up to 10 wpm	3%
Zero wpm	44%

Figure 2. Reading fluency by linguistic group, percentage of students able to read

Nepali Speakers / Other Mother Tongue

There was also a significant difference in the average reading scores between the two districts. As reported previously, 58 percent of students spoke Nepali in Kanchanpur and 41 percent spoke Nepali in Kailali. As shown in Table 5, Kailali, with a higher percentage of non-native Nepali speakers, had a higher percentage of non-readers. When non-readers were removed, the average oral reading fluency of students from Kailali was considerably higher than the average for those from Kanchanpur.

Socio-economic status (SES) differences among students families do not help explain these differences in reading performance. To measure SES, students were asked about the type and size of their home, their family's possessions, and whether the student earned money outside of the home (as summarized in Table 3). No relationships

appeared between reading fluency results and these socio-economic proxy data for individual students. In fact, students from Kailali, the district with a higher percentage of non-native Nepali speaking students and whose families rank lower on various SES indicators, had both a higher percentage of non-readers and a higher average reading fluency score for students who able to read.

This suggests that linguistic and SES disadvantages manifested themselves when a larger share of students from disadvantaged groups did not learn to read at all. However, those from disadvantaged groups who did learn to read, on average, outperformed the linguistic majority group and students from families with higher SES.

Table 4. Words per minute read by language, with and without non-readers

Language	N[a]	Average wpm all students (WPM≥0)	% Students not reading (wpm=0)	Average wpm readers only (wpm>0)
Nepali	212	29	36%	46
Tharu	192	22	52%	46
Rana Tharu	32	23	50%	46
Other	16	29	31%	43

a. While 480 students were interviewed, only 452 were given the Grade 3 reading assessment.

Table 5. Words per minute read by district, with and without non-readers

District	N	Average wpm All Students (WPM≥0)	% Students not reading (wpm=0)	Average wpm Readers Only (wpm>0)
Kanchanpur	153	23	41%	39
Kailali	299	27	45%	50

Concepts About Print and Letter Recognition Results

The CAP and letter recognition assessments helped determine whether students struggling to read had at least acquired some of the basic skills necessary to build reading fluency. As shown in Table 6, students unable to read could, on average, identify 20 out of the 36 letters in the Nepali alphabet and answer 6 out of 10 CAP questions correctly. Students knew where a story began and ended and the correct direction of text, but were unable to choose a word or a letter from the text and read it aloud. The fact that the students with the lowest reading ability could answer six CAP questions correctly suggests that students were at least exposed to printed materials.

Table 6. CAP and letter recognition scores by level of reading fluency

	0 wpm	1–10 wpm	11–40 wpm	41+ wpm
Number of students	198	15	72	167
Average # of correct CAP questions	6	6	8	9
Average # of letters identified correctly	20	30	34	35

Table 7 highlights schools within the sample with the highest and lowest average reading scores. While a greater percentage of students in the top performing schools were more likely to speak Nepali, language appeared not to be the only determining factor for high performance. Of the three schools with over 60 percent Nepali speakers, two were in the highest performing group and one was in the lowest performing group. Similarly, of the three schools with almost no Nepali speakers, one was among the highest performing group and the other two were among the lowest performing group. The number of years of Save the Children support also varied very little between the two groups. The average number of years of support for the top schools was six and a half, while the bottom schools reported an average of seven and a half years of support.

Table 7. Highest and lowest performing schools in reading fluency

Highest performing schools	Average wpm	% not reading	Save or Control	Years supported by SC	% Nepali speakers
1	50	5%	S	4	100%
2	45	6%	S	4	41%
3	42	24%	S	13	0%
4	39	11%	C	-	83%
5	36	33%	S	5	38%

Lowest performing schools	Average wpm	% not reading	Save or Control	Years supported by SC	% Nepali speakers
1	2	90%	S	8	5%
2	8	55%	S	3	64%
3	8	79%	S	5	15%
4	14	47%	S	15	45%
5	18	57%	S	7	5%

An obvious difference between the highest and lowest performing schools was the percentage of students unable to read. In each of the lowest performing schools, 47 percent or more of the students were unable to read a single word. In contrast, at only one top performing school were more than 30 percent of students not reading.

The researchers examined other factors that could influence literacy acquisition, such as gender, age, and participation in early childhood education. In this sample, none of these indicators was significantly correlated with reading scores. There was an interaction between gender and reading scores: girls speaking Tharu at home tended to score lower in areas of letter knowledge, reading fluency, and comprehension than the rest of the sample. However, there was no statistically significant difference between reading scores of girls speaking Nepali, Doteli, or Rana Tharu and the rest of the sample. Participation in kindergarten also had no relationship with the levels of oral reading fluency achieved by students in Grade 3.

Beyond the individual or family characteristics that may have accounted for variations in student levels of learning, this study explores how differences at the classroom and school levels may have impacted students' opportunities to learn and thus their learning outcomes.

Opportunity to Learn Factors as Measures of School Effectiveness

To look at school-level factors we returned to EQUIP2's opportunity to learn framework. This study used the 12 OTL factors both individually and collectively to determine the effectiveness of each school in the study at maximizing opportunities to learn. Recall that the factors include:

1. Percentage of days school is open;
2. Teacher attendance;
3. Student attendance;
4. Percentage of the school day available for instruction;
5. Percentage of student time-on-task;
6. Equivalent percentage of days available for instruction;
7. Percentage of students with a textbook;
8. Percentage of observed textbook use;
9. Percentage of time spent reading;
10. Grade 3 reading ability;
11. Class size; and
12. School support.

OTL Factor 1: The Percentage of Days School Is Open

The official school calendar in Nepal includes 192 days, with the school year starting in mid-April and ending in March. Based on data triangulated from teacher and principal interviews, the researchers found that schools, on average, opened 15 days after the official start date. In addition, principals reported that schools were closed, on average, an additional four days during the school year for non-official reasons. Therefore, the equivalent of about 19 days, on average, was lost due to school closure.

Figure 3. Number of days closed by school
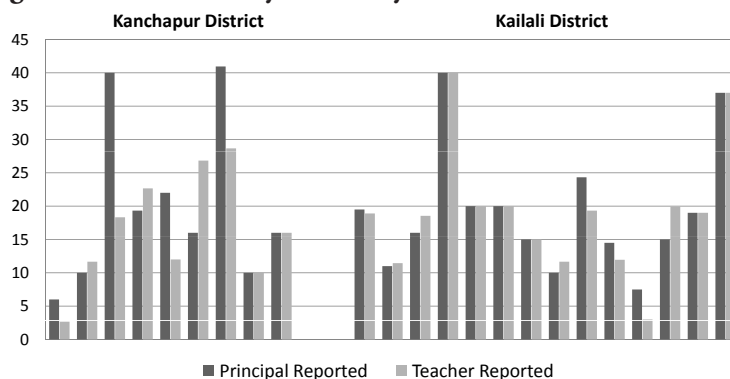
Figure 3 summarizes the number of days each school was closed as reported by both teachers and principals. The equivalent number of days lost varied greatly by school, with as many as 40 days lost in some places and as few as 3 days lost in others. At six schools, there was a considerable difference between the number of days school was closed as reported by teachers compared to the number reported by principals. Schools often kept only informal records of school closure such as notes in student attendance books, making it difficult for researchers, principals, and teachers to determine the

number of school days lost. While the researchers collected this data from both principals and teachers, the final calculations of equivalent school days lost were based on principals' reports since it is officially their role to document such information.

OTL Factor 2: Teacher Attendance

The research team was unable to obtain official records for teacher attendance. However, during interviews, principals reported on teacher attendance from the previous week. Based on this information, the researchers estimated teacher attendance rates for the entire school year. On average, teachers were present 91 percent of days that their school was open. Given that principals and teachers were likely to answer this question positively, these attendance rates may overestimate teacher presence at school.

OTL Factor 3: Student Attendance

The research team was unable to obtain data on student attendance. However, during the survey, students reported whether they missed school the previous week. Thirty-three percent of students said they had missed school the previous week on days when school was open. Although these numbers could not be used to calculate a student attendance rate, this self-reported estimate suggests that student absenteeism was high. On average, students reported having to walk about 20 minutes to school, implying that distance to school did not contribute to student absenteeism.

OTL Factor 4: Percentage of the School Day Available for Instruction

The percentage of the school day available for instruction takes into account the non-instructional components of the school day, such as recess. It also recognizes that school may start late, end early, or experience interruptions in instructional time.

In Nepal, the only data collected for OTL Factor 4 was a 30 minute recess each day. This data was not collected at the schools, but rather, from the government's official policy that each school give students a 30 minute break. No data was collected on the actual start and end times of the school day. Using this estimate, 92 percent of the day was available for instruction. In other case studies in this series, EQUIP2 observed school days starting late and ending early and an extended recess. Thus, it is likely that more time was lost during the day in Nepal than the minimal calculation included here.

OTL Factor 5: Percentage of Student Time-on-Task

The researchers observed classrooms in Grades 1, 2, and 3 for approximately one hour each, as appropriate to class sessions, using the Stallings Observation Instrument. The Stallings Observation Instrument consists of a series of 10 snapshot observations over the course of one hour. During each snapshot, the researcher records teacher activities, classroom activities, materials use, and student engagement in learning activities. The teacher and student activities were categorized and broadly divided into those that were "on task" and "off task." On-task activities included reading aloud, demonstration/lecture, discussion/debate, practice/drill, seatwork, verbal instructions, reading silently, and interpreting text. Off-task activities included leaving the room, socializing, discipline or classroom management, and disengagement. Students were considered to be reading when observed reading syllables, words, or text silently or aloud or discussing

text with other students or the teacher. If students were involved in exercises such as repeating the alphabet, sounds, and words, the activity was coded as practice/drill.

Across the 23 schools, the percentage of on-task time for Grade 1, 2, and 3 teachers ranged from 50 to 87 percent with an average of 74 percent. In Kanchanpur, teachers were on task an average of 79 percent of the time and in Kailali 70 percent of the time. However, the difference between districts was not statistically significant.

Overall, students were engaged in on-task activities 60 percent of the time. In Kanchanpur, students were on task, on average, 70 percent of the time, while in Kailali they were on task only 55 percent of the time; a small, but statistically significant difference. Interestingly, students from Kailali, the district with lower time-off-task, had the higher average fluency scores for students who could read. This suggests that off-task students may have been the non-readers. In all cases, students were more likely to be engaged in learning activities when their teacher was on task. When the teacher was observed to be on task, 77 percent of students were also on task.

Table 8. Time-on-task by activity and grade

Activity	Grade 1	Grade 2	Grade 3
Reading aloud	7%	2%	7%
Demonstration and lecture	9%	15%	12%
Debate/discussion	1%	2%	3%
Practice and drill	14%	12%	8%
Seatwork	10%	15%	13%
Copywork	13%	14%	11%
Verbal instruction	3%	2%	2%
Students reading	0%	0%	0%
Interpreting text	0%	0%	0%
Students off task	41%	38%	42%

As demonstrated in Table 8, on-task student activities differed by grade. In Grade 1, 14 percent of instructional time was focused on practice and drill activities and 13 percent on copywork. In Grade 2, instructional time was spent primarily on seatwork, demonstration and lecture, and copywork. In Grade 3, instructional time-on-task was spent mostly on seatwork, copywork, and demonstration and lecture.

OTL Factor 6: Equivalent Percentage of Days Available for Instruction
In this study, researchers combined OTL Factors 1–5 into a factor termed equivalent percentage of days available for instruction (Factor 6). The objective was to compare the amount of time actually available for instruction to the amount of time potentially available based on the official school calendar.

To estimate the number of days available for instruction, researchers subtracted the number of days a school was closed, the number of days lost due to teacher absence, the 30 minutes of lost instructional time due to recess, and the number of days lost due to students being off task from the number of days on the school calendar (192). Figure 4

summarizes the effects of each variable on the total days available for learning in both districts.

Figure 4. Number of days available for instruction
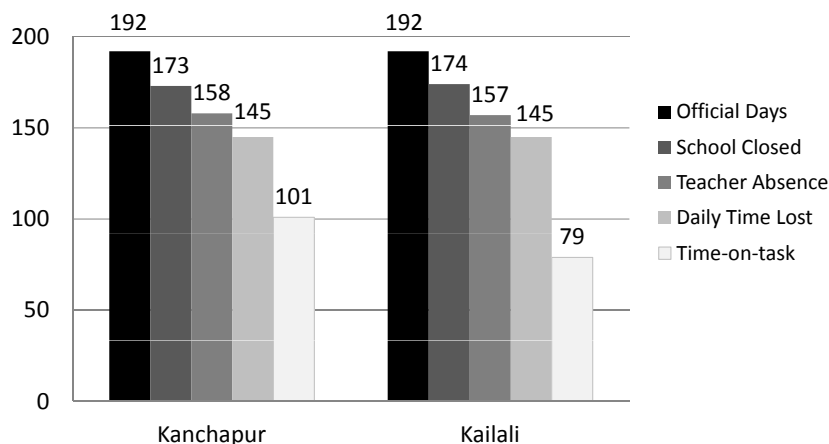
After accounting for school closures, teacher absenteeism, and time available in the school day for instruction, the equivalent of 145 days in Kanchanpur and Kailali were available for learning. However, once time-on-task data was included the number of days available for learning dropped to 101 in Kanchapur and 79 in Kailali. On average, the equivalence of 47 percent of the school year was lost in Kanchanpur and 59 percent in Kailali. Across all sample schools in Nepal, 87 days were available for learning, on average. Taking student attendance into account would have further reduced the amount of time available for learning, as would more accurate data on when school days started and ended.

When examining the relationships between OTL Factors 1–5, teacher attendance was positively correlated with reading fluency and reading comprehension, suggesting that students at schools with high teacher attendance had greater oral reading and comprehension skills. There was no significant correlation between reading scores and the other four factors.

OTL Factor 7: Percentage of Students with a Textbook

In general, materials were equally available in each district. On average, 87 percent of Grade 3 students in Kanchanpur had a language arts book, 98 percent had notebooks, and 84 percent had a pencil or pen. In Kailali, 84 percent of Grade 3 students had a language arts book, 93 percent had notebooks, and 85 percent had a pencil or pen. However, there was some variation in the availability of materials across schools. Figure 5 shows the percentage of Grade 3 students with a language arts book. In one school, almost no students had a textbook. In six others, all students had the language arts book. In the vast majority of schools (20 out of 23), at least 75 percent of students had a language arts textbook.

Figure 5. Percentage of Grade 3 students with language arts books by school
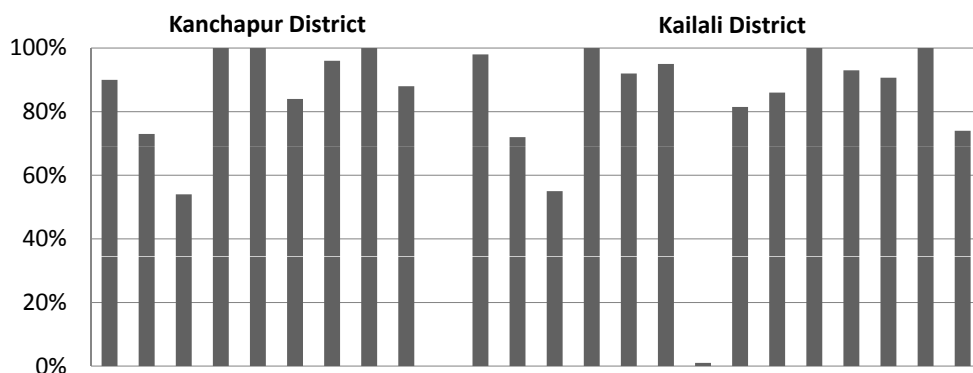
OTL Factor 8: Percentage of Observed Textbook Use

In all but one school, textbooks were available in large enough quantities to enhance instruction. However, there was variation in the percentages of students observed in Grades 1, 2, and 3 using any textbook during classroom time. Textbook use was observed in some schools as frequently as 32 percent of the time, while in others, textbooks were used only 3 percent of the time (about five minutes during a period of three hours). On average, 14 percent of students were observed using textbooks as part of a lesson. No significant relationship was found between these findings and students' oral reading fluency.

OTL Factor 9: Percentage of Time Spent Reading

The only reading activity observed in all three grades was reading aloud. No students read on their own in any of the observed grades. As shown in Table 9, reading accounted for 6 percent of instruction-related activity in the schools observed in this study.

The strongest determinant of student engagement was, not surprisingly, teacher engagement. As shown in Table 10, students were on task most often when their teacher was on task. However, when teachers were observed to be off task, 88 percent of students were off task as well.

In the classrooms observed, all reading activities occurred only when the teacher was on task, but even then, only 8 percent of students, on average, were observed reading. The amount of reading aloud in Kailali (the district with higher reading fluency of literate students) was much greater than in Kanchanpur. When the teacher was on task in Kanchanpur, more students were involved in practice and drill activities and copying than reading and understanding written text. In Kailali, more students were involved in seatwork, an activity that could use reading skills. This breakdown of activities suggests that it is not only important to keep students on task, but also necessary that learning time is dedicated to activities that use and strengthen students' reading abilities.

Table 9. Percentage of students engaged in activities

Student Category of Activity	Overall	When Teacher Is on Task	When Teacher Is Off Task
Reading	6%	8%	0%
Demonstration	12%	16%	0%
Discussion	2%	3%	0%
Practice/Drill	11%	15%	0%
Seatwork	13%	16%	4%
Copying	13%	15%	8%
Verbal Instruction	3%	4%	0%
Off Task	40%	23%	88%

As shown in Figure 6, the level of student engagement in instructional activities (time-on-task) and the percentage of time spent reading varied considerably across schools. For this sample of schools, these two opportunity to learn factors were not correlated with each other and neither correlated with oral reading fluency. This study suggests that, for these schools, instruction had no relationship with literacy acquisition because, in many schools, little instruction related to literacy took place.

Figure 6. Average percentage of students engaged in different activities by school
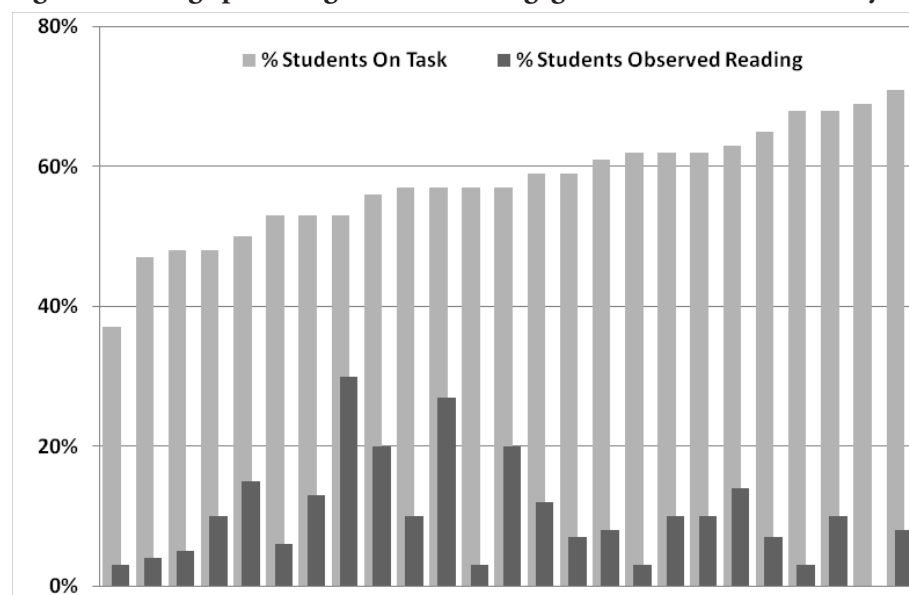
OTL Factor 10: Grade 3 Reading Ability

Reading ability is both an outcome of opportunity to learn and a critical determinate of whether students continue to learn and advance in school. If students do not acquire an adequate level of reading ability early in their schooling, they fall further behind. Thus, students' continued opportunity to learn depends on their level of reading ability.

Given the lack of focus on reading and reading instruction, it was not surprising to find low Grade 3 reading performance. As shown in Table 10, 44 percent of students could

not read at all, 63 percent of students read between 0 and 40 wpm, only 26 percent read 41–60 wpm, and 12 percent read above 60 wpm.

Table 10. Frequency Distributions of Reading Fluency, Grade 3

wpm	Zero	1-10	11-20	21-30	31-40	41-50	51-60	61-70	>70
% students	44%	3%	3%	6%	7%	16%	10%	5%	7%

Identifying the causes of these reading level patterns in Nepal is essential to improve students' reading abilities. This study used Concepts about Print to assess whether students were acquiring foundational reading skills. As Table 11 demonstrates, the majority of students had acquired pre-literacy foundation in either their mother tongue or the language of instruction. While students had low reading scores, they knew their letters and print concepts. Higher Concepts about Print scores were correlated with better reading performance, but 85 percent of students answered at least five Concepts about Print questions correctly.

Table 11. Concepts about Print

# CAP Correct Answers	Zero	1	2	3	4	5	6	7	8	9	10
% students	1%	2%	3%	3%	6%	8%	8%	11%	20%	29%	11%
Average wpm	5.1						8.7		39.8		

OTL Factor 11: Class Size

Class sizes within the sample varied greatly between schools and between grades. The largest was a Grade 1 classroom with 213 students while the smallest was a Grade 2 classroom with 14 students. Table 12 summarizes average class sizes for each grade in the two districts and the overall sample. Grade 1 classes were, on average, the largest.

Table 12. Average class size

District	Grade 1	Grade 2	Grade 3
Kanchanpur	44	39	40
Kailali	54	43	47
All schools	50	42	44

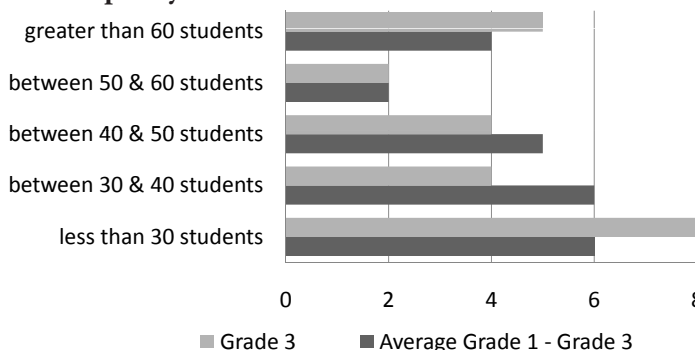**Figure 7. Frequency distribution for class size**

Figure 7 highlights the variability in class size. Most classrooms (52 percent) had 40 or fewer students, with many containing fewer than 30. Twenty percent of Grade 3

classrooms had more than 60 students. Class size, however, had no relationship with student reading fluency.

OTL Factor 12: School Support

School improvement efforts usually involve external help that builds local capacity to administer and manage the school, improves teaching, and works with parents and community members to support and manage their schools. Regular visits to schools are one way through which support to administration, teaching and learning, and community participation is usually delivered. In Nepal, principals and teachers were asked how frequently their schools receive visits from outside support personnel. These included visits by regional, local, or other education officials, as well as support of project staff from Save the Children or other NGOs. Figure 8 shows that schools in this study were all visited at least once per year. Most schools (18 of 23) were visited between once and twice per semester.

Figure 8. Frequency of visits during the school year
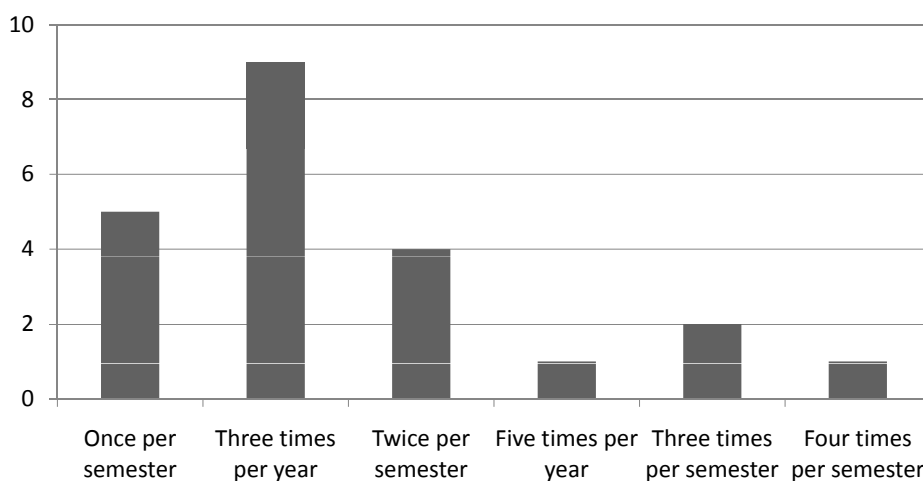
Interestingly, there was no difference in the frequency of school support visits between schools participating in Save the Children's programs and the six control schools. Further, the reliability of self-reported data was questionable, as principals and teachers may have been motivated to over-report visits (to give what is perceived to be the right answer) or to under-report (to convey that they need support). Principals and teachers at the same school did sometimes give different answers to the school support question but neither group's responses were consistently biased in one direction or the other.

School support showed no relationship to the other OTL factors or to students' reading fluency scores. The number of school visits did not influence a school's ability to organize and provide opportunities to learn. This finding is contrary to what earlier EQUIP2 research found, namely, that community-based schools are able to organize opportunities to learn more consistently than government schools in part because of more regular NGO support. It is important for Save the Children and its partners to investigate whether their school support in Nepal focused on improving school management, teaching, and learning.

Conclusions and Implications

This study set out to answer the following questions:

• How well do schools provide opportunity to learn?
• How does actual opportunity to learn compare to potential opportunity to learn?
• How does opportunity to learn vary across schools?

The findings from this case study suggest that: a) a great deal of opportunity to learn, as measured by instructional time, was lost; b) little, if any, of the actual classroom reading instruction took place; c) textbook use was suspect; and d) students' reading abilities were low. Out of the 192 days of instruction potentially available at schools in Nepal, only the equivalent of 87 days, on average, were actually available for opportunity to learn.

Given the small amount of classroom time spent on reading and the lack of a reading curriculum, it was not surprising that students' reading abilities were low. While major variations existed across all OTL factors included in this study's research framework, variation in all of the non-reading factors other than teacher attendance was of little significance, as they did not impact the one factor that could have contributed to students learning to read: time spent reading or in reading-related activities.

Far too many children in the schools surveyed had not learned to read adequately by Grade 3. Too many students, especially non-native Nepali speaking students, were unable to read at all, even after two or three years of schooling. For the students who did learn to read, their levels of fluency were below the basic standard for reading in Grade 3. Research conducted by Abadzi (2008) argues that students learning to read script languages need to read between 45 and 60 wpm by Grade 2 to demonstrate adequate comprehension and fluency skills. Children whose mother tongue was not Nepali were more likely to be unable to read by Grade 3. However, about half of the non-native Nepali speaking students were literate and obtained levels of oral reading fluency equal to or surpassing their native Nepali speaking peers. This phenomenon was particularly common in Kailali where Nepali was not the mother tongue for 59 percent of students.

This study revealed considerable variation in a school's ability to respond to students' needs. Schools varied in how often they were open and how regularly their teachers and students were present. Schools also varied in how classroom time was used, how frequently students were on task, and how regularly reading activities were featured.

As for the factors that account for variations in student learning, the study found time spent reading to be an important opportunity to learn variable. For example, schools in Kailali had a slightly lower percentage of student time-on-task than their counterparts in Kanchanpur. However, during the time that was spent on task in Kailali, twice as many students were involved in reading activities. In fact, by itself, the percentage of students involved in reading activities at school accounted for 38 percent of the variation in the average oral reading fluency of students in that school who could read at least one word. While reading activities were observed more often in Kailali, it is important to note that, on average, only 14 percent of students in Kailali were involved in reading activities when those activities occurred.

Save the Children's efforts in Nepal are intended to provide support to help schools improve. Since receiving the results of this study, Save the Children has begun implementing Literacy Boost at 17 pilot schools in 2009 with plans to expand in 2010 if results indicate success.

Even in the best performing schools, opportunities to learn and reading outcomes can be greatly improved. This study's findings point to a variety of interventions, mentioned below, that could lead to more consistent opportunities to learn and, therefore, better learning outcomes.

Providing a Structured Approach to Teaching Reading

In Nepal, as in other countries EQUIP2 has researched, the absence of a specific reading curriculum or reading program has contributed to low levels of reading instruction. The building blocks of reading were not part of the curriculum, as most instruction focused on language, not reading. Introducing a reading program that fits within the existing primary school curriculum is one challenge that school improvement projects must take on. As seen in the time-on-task data, the strongest determinant of students being on task was the teacher being on task. With respect to reading-related activities, across all the observations in all the schools, no students were observed reading when their teacher was off task. A structured reading program is one way to help teachers know how to be on task and to devote a higher percentage of time to reading instruction and practice.

Increasing Time Spent Reading

Increasing the amount of time spent reading is one area where opportunity to learn can be substantially improved in Nepal. Much more class time needs to be devoted to reading activities, and more students need to be engaged in these activities. In this sample of schools, students in Grades 1, 2, and 3 spent an average of 12 minutes per day on reading-related activities; about 40 percent of the students were off task during these 12 minutes. This could explain why such a high percentage of students had not learned to read at all. Teachers need training on how to include classroom activities that build reading skills and provide students with time to read.

Making Better Use of Available Materials

In most of the schools sampled, more than 75 percent of students had a language textbook. However, this study revealed that these books were rarely used to supplement instruction. Teachers need professional development that demonstrates how to use materials in their lessons.

Providing Additional Reading Material

Classrooms lack other books and reading materials. If the objective is to increase the time spent reading, then other materials such as story books, articles, and letters are needed. Classrooms must be rich in reading material if teachers are expected to promote reading in school.

Addressing the Needs of Students Struggling to Read

Many students are not learning to read at all. Engaging students who are not able to read is an additional, more complex challenge for teachers in Nepal. First, teachers

need to be helped to recognize that a substantial percentage of their students cannot read. This implies introducing easy-to-use assessments, including versions of the tools used in this study, at the school level and training teachers to periodically use such assessments to identify their students' learning needs. When struggling students are identified, teachers then need explicit strategies for helping these children not only learn to read, but learn to read at an accelerated pace. This implies the need for supplemental instructional time as well as more individualized instructional techniques that make use of proven reading strategies. Increased reading instruction will not, by itself, improve students' skills unless teachers use methods proven to strengthen students' oral reading abilities. When possible, encouraging parental involvement and providing opportunities to read outside school may also help students learn to read.

Ensuring that School Starts On-time and Teachers Are Present

On average, schools lost 15 days at the start of the school year. This percentage equated to a loss of 8 percent of potential opportunity to learn before the school doors even open. Additional time lost during the year, particularly because of teacher absence, reduced the available time for instruction even further. Given that this study probably grossly under-estimated teacher absenteeism and did not account for student absenteeism, it is likely that interventions aimed to improve the amount of time students are in school would greatly impact opportunity to learn. In other contexts, using school management committees to ensure local accountability has been an effective strategy for making sure school is open and teachers are present.

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Annex A: Additional Information on Sample Schools

Save schools	Total enrollment	% Grade 3 students speaking Nepali as MT	Teacher years of experience	% female teachers	% teachers with teach. cert	Years in the SC program	# of implemented SC programs at school
1	238	85%	5.7	50%	50%	8	1
2	449	64%	12.4	25%	100%	5	
3	278	45%	10.2	33%	100%	15	8
4	1271	35%	9.9	50%	100%	6	8
5	129	5%	6.2	20%	40%	8	8
6	709	41%	12.8	33%	83%	4	7
7	782	0%	14	6.7%	93%	13	8
8	178	15%	11.5	25%	75%	3	8
9	341	15%	17.3	29%	86%	3	8
10	196	75%	4.2	40%	80%	5	4
11	237	100%	4.2	17%	50%	4	6
12	1139	46%	13.9	24%	76%		6
13	275	5%	5	33%	33%	14	7
14	693	77%	7	27%	55%	6	5
15	1055	72%	7	27%	73%	4	2
16	498	41%	5.3	50%	83%	5	1
Total	8468	45%	9.2	31%	74%		

Control schools	Total enrollment	% Grade 3 students speaking Nepali as MT	Teacher years of experience	% female teachers	% teachers with teach. cert
1	190	95%	10.6	25%	100%
2	143	90%	6.4	60%	80%
3	128	88%	16.3	25%	100%
4	525	40%	10	63%	88%
5	691	17%	7.5	13%	11%
6	941	24%	10.5	18%	71%
7	312	33%	13.3		82%
Total	2930	55%	10.7	34%	76%

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