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Timor-Leste

An Analysis of Early Grade Reading Acquisition

World Bank

Summary

An assessment of reading skills in Timor-Leste's primary schools was carried out during July and August 2009. The study was carried out by consultants to the Ministry of Education with support from the World Bank and the Education Fast Track Initiative (FTI). The assessment is part of a global initiative called EGRA (Early Grade Reading Assessment), which aims to help countries measure how well children are learning to read in the early grades of primary education.

More than 900 students in grades 1, 2 and 3 were interviewed in 40 randomly selected primary schools across the country. Reading skills were assessed in both Portuguese and Tetum. The assessment measured pre-reading skills such as recognition of where a text starts and ends, recognition of letters and sounds, and pronunciation of common and invented words, as well as actual reading fluency and listening comprehension skills. These tests of reading were adapted specifically to language and expected reading performance in Timor-Leste. Because of this adaptation to the local context, the results of EGRA are not meant for international comparison.

The results are worrying. More than 70% of students at the end of grade 1 could not read a single word of the simple text passage they were asked to read. 40% of children were not able to read a single word at the end of grade 2; and the share of children scoring zero dropped to about 20% at the end of grade 3. The assessment provides clear evidence that many children spend years in primary schools in Timor-Leste without learning to read. The fact that children do not gain this most fundamental learning skill is a major contributor to the high rates of grade repetition and drop outs in Timor-Leste's primary schools. It is also important to note that the assessment covered only those children who are in school. Between a quarter and a third of primary age children in Timor Leste are not in school and presumable also have little or no reading ability.

There were, however, some findings that provide cause for optimism. About one third of the students in grade 3 were able to read about 60 words in per minute. Although this reading fluency would be considered low for grade 3 students in high income countries, it is considered by many childhood reading experts as a minimum standard for reading fluency, which has been shown internationally to be associated with reading comprehension. Some primary schools and some teachers in Timor-Leste are effectively teaching reading, which represents success on which the country can build.

The results call for immediate action. Because of Timor-Leste's high birth rate and high level of early grade repetition, children in grades 1 to 3 represent more than half of students enrolled in school in the country. So action needs to be focused at this level. Investments are obviously called for in areas such as reading-focused teacher training, developing and distributing books and instructional materials, creating libraries, improving and expanding preschools, and developing measurable reading standards that all teachers and parents can understand. The Ministry of Education is already mobilizing teacher training programs and materials distribution to begin early in the 2010 school year using its own funding and support from donors. But much more needs to be done to improve the skills of teachers and make sure schools have better resources.

An Analysis of Early Grade Reading Acquisition in Timor-Leste¹

1. Introduction

This report examines the status of reading acquisition in Timor-Leste's primary schools. It is written for education stakeholders and policy makers in Timor-Leste, including government officials, politicians, educators, parents, Timor-Leste's donor partners and NGOs active in the country. Because the report is aimed at those who are already familiar with the education system in Timor-Leste, it will not attempt to describe the education system, its history, or the issues – with one important exception - that policy makers and stakeholders are currently confronting.

One issue in Timor-Leste, however, merits special mention in the context of this analysis. Approximately 30% of primary school age children in Timor-Leste are not enrolled in primary school because they never started school or have dropped out. This study assesses the reading ability only of those children who are in school. The findings show significant problems with reading acquisition for children in school. If those children who are not in school had been included in the sample, the results would be lower than those currently presented.

In Timor-Leste, improving reading acquisition in the early grades is expected to lead to better learning outcomes, as well as to better access, reduced repetition and fewer drop outs.

2. Characteristics of students in grades 1, 2 and 3 in Timor-Leste

This report begins with a brief description of the characteristics of the primary school environment and the characteristics of children in primary grades 1, 2 and 3. Because grades 1-3 are the grades in which children should be acquiring core reading skills, those grades are the target group for this study. The data that will be cited come from a socioeconomic survey that was given to each child who participated in the study. The authors would like to note an important caveat prior to reporting on

¹ This report was prepared by Erica Amorim (Survey Research Specialist, World Bank, Brazil), Jim Stevens (Education Task Team Leader, World Bank, Washington) and Luc Gacougnolle (Education Specialist, World Bank, Timor-Leste). The authors would like to thank the following individuals who worked on and supported the EGRA process in Timor-Leste and who commented on this report: Dr. Joao Canico Freitas (Minister of Education), Cidálio Leite (Assistant Director General), Raimundo José Neto (Director of Curriculum Materials and Evaluation), Cristina Benevides (EGRA Assistant), Julia Gaio (FTI- National Co-ordinator), Rosanne Simpkin (FTI – Advisor), Alan Male (Senior Education Liaison Specialist), Stephen Close (Education Officer, World Bank, Sydney), Eduardo Velez (Education Sector Manager, World Bank, Washington), Ken Vine (Education Statistics Consultant), Kashif Saeed (EMIS Consultant), Ana Maria Ferreira (Escola Portuguesa de Dili), Maria do Carmo (Escola Portuguesa de Dili), Ginny Kintz (CARE International) and Lotte Renault (CARE International). The authors would also like to thank the EGRA interviewers who performed well under difficult circumstances and made this analysis possible: Lorença Lalisu, Joanhina da Costa Freitas, Jumbo Jose Antonio da Conceição, Rosario Asiueli, Emerenciano Ricardo, Serafim Ximenes, Anita de Jesus, Agustinha da Costa Ramos, Emelita Soares Cardoso, Joanhina Gouveia Cardoso, Belina Mesquita, Manuela Exporto Borromeu, Bendito Martins Casimero, Julia Mesquita Sampaio, Felismina F. F. Tilman, Marta Martins Ricardo, Fatima Grasiela da Costa Correia, Januario da Costa Soares, Paulina Gusmão, Lisette F. Lay Faria Soares, Josefina de Castro, Leonardo de Araújo, Paulino dos Santos, Natalia Pereira da Costa, Marito Ramos da Purificação, Zelia Quintão Pereira, Isabel Soares, Martinha Lopes, Algira dos Santos, Belita de Araújo, Lilia Ervina Jeronimo Guterres.

the data: the survey is based on the self-reporting of young children. Some questions – such as literacy levels of the parents – should be taken in that context. But the authors believe that the survey provides a useful overview of the education environment in Timor-Leste. A brief analysis of the relationship between various findings in the socioeconomic survey and reading acquisition skills is provided in Section 6 below.

The Early Grade Reading Assessment (EGRA) survey was undertaken in 40 randomly selected primary schools in Timor-Leste and covered a total of 944 students in those 40 schools. EGRA and its methodology will be described in detail in Section 3 below. In addition to randomly selecting the schools, the students who were assessed were also randomly selected from grades 1-3 within each school. Of the 944 students who were interviewed, 484 were randomly evaluated in Portuguese and 460 randomly evaluated in Tetum. The breakdown of children assessed across the first three grades of primary was 34%, 34% and 32%, respectively.

The socioeconomic survey attached to EGRA was developed specifically for Timor-Leste. It consisted of 27 questions which can be broken down into 6 main themes as follows:

- 1) Parents' reading and writing ability
- 2) Languages spoken by the family, by the parents and use of Portuguese
- 3) Practice of reading, vocabulary and memorization in school and home activities
- 4) The parents' follow-up of the students' homework
- 5) School attendance
- 6) School and home eating habits
- 7) Household goods

Table 1 shows the main characteristics of the sample.

Table 1:
Sample characteristics

Characteristics	Total	Portuguese	Tetum
Average length of the interview (time)	25	26	25
Average age (years)	8.8	9	8.7
Gender (%)			
Female	48.7	46.4	51.2
Male	51.3	53.6	48.8
School system (%)			
Full time	0.6	0.9	0.5
Morning shift	88.8	88.4	89.4
Afternoon shift	10.5	10.8	10.1
Grades (%)			
1st grade	33.8	33.9	33.7
2nd grade	34.1	33.9	34.3
3rd grade	32.1	32.2	32.0

The average age of students in the sample was 8.8 years. The average age in grade 1 was 7.4 years, and the average age for grades 2 and 3 was 9.0 years and 9.8 years, respectively. This highlights the fact that many children either enter school late or are kept behind by repetition. The average age in grade 1 is one year more than the official age, and the average age is almost 2 years more than the official age in grades 2 and 3. An equal number of boys and girls were interviewed, reflecting the nearly 50/50 gender breakdown in the early grades in Timor-Leste. Approximately 90% of students attended school only in the morning (primary students in Timor-Leste normally attend classes four hours per day and six days a week). Only 26% of the students evaluated in the survey attended preschools. 96% of students reported that their school has a feeding program.

According to student self-reporting, a quarter of the parents of students in grades 1-3 cannot read and a third of them cannot write. This level of illiteracy corresponds to findings from the Living Standards Measurement Survey conducted in 2007 (WDI, 2007). More than 30% of the evaluated students reported that their parents do not help/follow-up on their homework². Nearly 50% of the evaluated students reported that they were absent from school in the week prior to the survey. 45% reported living close to their school.

In terms of the languages spoken at home and in the school, the results clearly reveal the heterogeneity of languages of the country: 5 out of 10 children reported speaking a language other than Portuguese or Tetum at home, and 8 out of 10 students reported that they speak no Portuguese at home. Only 17% of student reported that their parents speak Portuguese. 66% of the sampled students reported that the language spoken by the teacher is different from the language used in the household. 57% of students reported that they do not read books at home.

The socioeconomic survey also provided some findings that could be considered positive indicators for reading at school and in the home:

- 80% of the interviewed children reported that they liked to read books
- More than 80% of the children practice reading in the classroom with their teachers³
- 84% of the students sing songs involving the alphabet, animals, etc. in the classroom

The economic status of households also provides insight into the household environment. Table 2 below synthesizes the main characteristics of the households of children who participated in the survey.

² 7 in each 10 students of the sample reported that the teachers give them homework.

³ 52% of the printed material read is in Tetum.

Table 2:
Household Characteristics

	% of domiciles that have:
Electricity	40
Refrigerator	13.4
Television	22.9
Radio	49.3
DVD device	14.7
Stove	8.4
Bicycle	20.8
Car	7.0
Motorcycle	14.5
Bathroom inside the house	33.8
Tap water	43.3
Celular phone	41.8

The next section's objective is to present an overview of EGRA, its origins, and the components evaluated in the instrument. This will be followed by an overview of the process of applying EGRA in Timor-Leste, including the process of adapting the instrument to the local educational context. Section 5 will provide the main findings of the study. The sixth section provides a brief analysis of the relationship between the EGRA reading results and the findings from the socioeconomic survey which were presented above. Finally, the last section provides the main recommendations for action.

3. The Early Grade Reading Assessment⁴

Problems with learning in many schools – whether in developing countries or in high income countries – often begin during the first year of a child's schooling. The failure of children to learn to read and understand a simple text in the early grades leads to increased grade repetition and dropouts, and ultimately reduced life-chances and social ills. Yet few developing countries give priority to measuring how well children are acquiring reading skills in the early grades. Many countries do develop national assessments in an attempt to measure learning outcomes against nationally defined standards (UNESCO, 2007), but nearly all national and international assessments are paper-and-pencil tests administered to students in grade 4 and above. Because these tests assume that students can read and write, it is not always possible to distinguish between students who score poorly because they lack the

⁴ This section is based on the report published by the RTI international: "Early Grade Reading Assessment toolkit", July, 2008. The EGRA protocol was developed and trialed by RTI International in 2007 with funding from the World Bank and USAID. The development process for EGRA was internationally peer reviewed by global experts in the field of reading acquisition. For more information on the EGRA, as well as for its several applications in the World, see: www.eddataglobal.org

knowledge tested by the assessments, or because they lack basic reading and comprehension skills (USAID, 2009).

A large body of research points to five essential components for the effective acquisition of reading ability:

- 1) Phonics: to understand and apply the knowledge of how the letters are linked to sounds to form the grapheme-phoneme correspondence and the spelling patterns.
- 2) Phonemic awareness: ability to recognize, manipulate and divide the sounds in words.
- 3) Vocabulary: oral and written knowledge of the words as well as a key component for both reading and understanding.
- 4) Fluency: ability to orally read with speed, precision and accuracy.
- 5) Comprehension: to understand and synthesize what is written.

The EGRA instrument focuses on these five components of reading acquisition. The instrument consists of 8 components, plus the socioeconomic survey. Table 3 below synthesizes the components of the instrument, as well as the skills which are to be assessed for each activity.

Table 3: Components of the instrument - EGRA

Component	Objective	Ability to be demonstrated by the student:
1. Orientation to the print	Child's ability to understand printing rules.	<ul style="list-style-type: none"> • To indicate where the reading begins • To indicate the reading direction in the line • To indicate the reading direction in the page
2. Letter name knowledge	Evaluation of the student's aptitude for reading. It is an indicator of the development of the reading ability.	<ul style="list-style-type: none"> • Provide name of upper and lower case letters distributed in random order
3. Phonemic awareness	Ability to separate words into sounds and to manipulate the sounds.	<ul style="list-style-type: none"> • To segment words in 2 to 5 phonemes • To identify words beginning with different phonemes
4. Familiar words reading	Ability to decode unrelated words.	<ul style="list-style-type: none"> • To read common simple words of one and two syllables
5. Non Familiar words reading	Decoding ability and was made to avoid the problem of recognition of the words.	<ul style="list-style-type: none"> • To make Grapheme-Phoneme Correspondences (GPCs) through the reading of simple meaningless words
6. Reading and comprehension	Measurement of the total reading competence.	<ul style="list-style-type: none"> • To read a piece of text with little effort and at a sufficient rate. To correctly respond to the different types of questions, even literal questions and inference questions about the text that was read.
7. Listening and comprehension	To evaluate if the student understands what is being read by another person.	<ul style="list-style-type: none"> • To correctly respond to the different types of questions, even literal questions and inference questions about the text read by the
8. Dictation	Oral abilities of understanding and writing.	<ul style="list-style-type: none"> • To write and use the grammar correctly through a dictation exercise

Source: Gove et alii (2008).

The EGRA instrument requires adaptation to the local education context and local standards, and is, therefore, not appropriate for purposes of international comparison. The locally-adapted assessment instrument is administered through individual student interviews. Its sample-based design allows ministries of education to report accurately on the status of students who are achieving a

country's own standards for reading in the early grades without the expense of a universal application, in which all students are assessed. The results of EGRA can be used to refine and improve curriculum, curricular materials, and instructional approaches. Periodic repetition of the assessment would provide continuous feedback on overall policy and system performance and help monitor progress and improvements in student learning over time.

Acknowledging the fundamental importance of reading for all learning, the Education for All – Fast Track Initiative (EFA-FTI) has made the assessment of reading achievement in the early grades a key element of its development agenda. In September 2009, FTI adopted two indicators of reading skills to the FTI Indicative Framework, one for early grades (“proportion of students who, after two years of primary schooling, demonstrate sufficient reading fluency and comprehension to ‘read to learn’”) and the other for end of the primary education cycle (“proportion of students who are able to read with comprehension, according to their countries’ curricular goals, by the end of primary school”). From now on, FTI will ask countries to report the percentage of students reaching the country-defined targets for each of these two reading indicators.

4. The EGRA Process in Timor-Leste.

This section provides background on the implementation of EGRA in Timor-Leste, including the adaptation and trailing of the EGRA protocol, training of interviewers, field work and data input. The Ministry of Education in Timor-Leste was the responsible implementing agency for the EGRA initiative. The process was facilitated by a survey specialist funded by the World Bank and was also supported by international and local education experts funded under FTI’s Catalytic Fund. The process of adaptation of the instruments was carried out in May and June of 2009, and the field work was done in July/August. The cost of the entire process, exclusive of international technical assistance, was approximately \$30,000.

Step 1: The introduction of the EGRA process in Timor-Leste began with a series of presentations for stakeholders and a workshop which was attended by key Ministry of Education and government officials, as well as the government’s main donor partners and nongovernmental organizations. The presentations and workshop were aimed at promoting a broad understanding of the nature of the evaluation and its potential relevance to improving education outcomes in Timor-Leste.

Step 2: The second step was the identification of local language experts who would guide the process of adapting the assessment instrument to local languages and the local education context in Timor-Leste. This process was carried out by a team of teachers from the Portuguese School of Díli with the support of international and local experts.⁵

The process of adapting the EGRA instrument was particularly complex in Timor-Leste because of the multiplicity of indigenous languages spoken in the country⁶. The official languages of the country

⁵ The team responsible for the adaptation of the protocol and assessment instrument was composed of: Ana Maria Ferreira, Maria do Carmo, Julia Gaio, Rosanne Simpkin and Érica P. Amorim.

⁶ According to a 2004 World Bank report, there are approximately 33 indigenous languages that are spoken in the country. Some of those languages are spoken by very small portions of the population. While Tetum is considered

are Portuguese and Tetum. The language of instruction in the early grades is, by default, the preferred language of the teacher, which is most commonly Tetum or another local language. A bilingual educational magazine, *Lafaek*, is published regularly for teachers and students. The existence of other reading materials in schools is generally limited, particularly in the districts.

A decision was made by the Ministry of Education to assess reading in these two languages only. However, there are multiple dialects of Tetum and only a very limited portion of the population speaks fluent Portuguese. Many children in Timor-Leste are, therefore, learning Tetum and Portuguese for the first time in the early grades of primary. Teaching in Tetum is also complicated by the fact that Tetum has not been fully standardized in written form, while teaching in Portuguese is hindered by the fact that many teachers in Timor-Leste do not speak or read fluently in Portuguese.

Particular care was given to adapting the instrument from its international version to the educational and cultural context in Timor-Leste⁷. Several examples will be provided for illustration. In the dictation section, the original English phrase “go to the shop and buy some sugar and coffee” was not appropriate because the children of Timor-Leste do not typically go to the market to buy sugar and coffee in bags. Adaptation was also required between the Portuguese and the Tetum versions of the instrument. To avoid misunderstandings, it was decided not to use a sentence which contains words that sounded similar in Tetum and Portuguese but were spelled differently. For example, the word lettuce is written *alfasi* in Tetum and *alface* in Portuguese; market is written *merkadu* (Tetum) and *mercado* (Portuguese).

In addition to adapting the reading instrument, as described in Section 2, a socioeconomic questionnaire was designed specifically for Timor-Leste to document the background of each of the children surveyed.

Step 3: The third step in the process was the random selection of schools to be surveyed. The initial objective was to make the survey statistically significant for each of Timor-Leste’s 13 districts, which would have allowed a comparative view across districts. This objective led to an initial sample size of 800 students per each of the 3 grades.⁸ These 2,400 students were distributed across 100 primary schools, based on the limitation that a team of interviewers could assess 8 students per grade (24 total students) in each school in one day. Schools were chosen per district using a random selection function software (SQL Server I). However, as preparations for the survey got underway, it became apparent to the organizers that it would not be possible to complete such a large sample given the time available (the school year was coming to a close in late August) and the need for intensive training of interviewers. A decision was made to reduce the total number of schools to 40 and the sample size to around 960 (24 students per school). A random selection of schools was subsequently made from the

the language spoken by the largest share of the population, it is also spoken in many dialects. It is estimated that only 16% of the population speaks the most common dialect of Tetum.

⁷ Adaptation of the instrument was based on version of EGRA in English and in Brazilian Portuguese.

⁸ Minimum sample size was carried out with alpha set at 0.05 and power at 0.80, which are the usual settings for MLA-type survey research.

previous selected 100 schools. The survey, therefore, only aims to be statistically representative at the national level.

As mentioned above, students within each school were also randomly selected to be interviewed. Boys and girls were selected separately. The process was as follows: each team of interviewers carried a set of blue cards (for boys) and pink cards (for girls). In order to select 2 boys and 2 girls to be interviewed in Tetum and 2 boys and 2 girls to be interviewed in Portuguese from each classroom, a random sub-set of cards were marked T and P. The cards were distributed to the students and those students receiving the cards marked T and P were assessed in the respective language.

Step 4: The fourth step in the process was the selection and training of the interviewers who would conduct the reading survey. In order to minimize problems between interviewers and students (given the multiplicity of languages and dialects), the decision was made to choose interviewers who had ties to the various districts. The requirements for selection at the district level were completion of secondary education, some university level training and fluency in Tetum or Portuguese. 32 interviewers were selected and organized into eight groups of four, each with a team leader who was responsible for organization, random selection of students in schools, and quality control of the process. The training of the interviewers took place during the month of June of 2009.

The training of the interviewers is also a fundamental part of the adaptation of the EGRA instrument. As part of the training, the Portuguese and Tetum language instruments were piloted in six schools in the first three grades. Following the piloting in each school, the experience was discussed between trainers and interviewers. Strategies were discussed for improving interview practice and the instruments were refined as needed to reflect this experience. A final version of the instrument is included in Annex 1 in both Portuguese and in Tetum.

5. The EGRA Results in Timor-Leste

The EGRA findings show that there is significant room for improvement in providing primary students in Timor-Leste with basic reading acquisition skills. Given the unique educational context and language history in the country, this paper will not attempt to provide international comparisons, which lack validity across curricular programs and language groups. But findings, in general, from Timor-Leste are consistent with the low level of reading acquisition skills found in many developing country environments, particularly those characterized by multiple local languages and limited reading resources in those languages.

The findings from the various EGRA components in Timor-Leste are as follows:

The first component of EGRA assesses orientation to printed text.⁹ Three questions are included in this component. The child is first asked to indicate where he or she would begin reading a text; the

⁹ The literature on reading acquisition indicates that even before attending school children in most environments acquire certain reading skills (Johnson, 1996). Other aspects of orientation to text include the recognizing the

second question asks the child to identify the direction of the text; and the third question asks the child to identify the next line to be read after the first sentence.

In Timor-Leste, approximately two-thirds of children surveyed in grades 1-3 answered these basic questions correctly regardless of the language (See Figure 1). However, the findings show that approximately one-third of children in grades 1-3 do not have not acquired even the most basic orientation to text and printed materials.

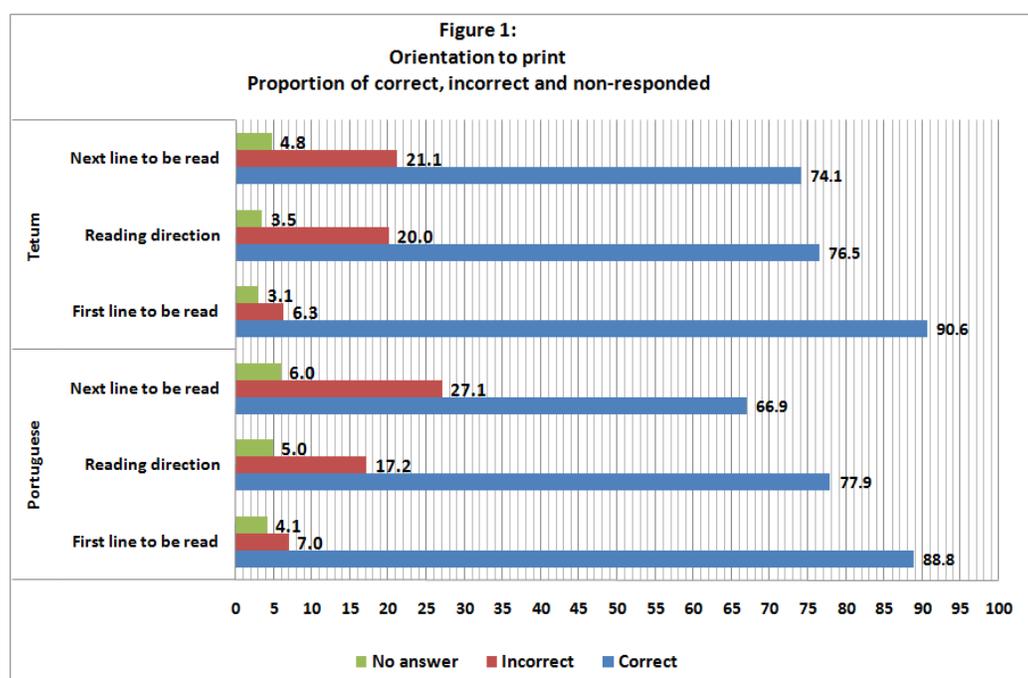


Table 4 below provides an overview of orientation to print results by grades 1-3. The percentage of correct answers of 1st grade students is 67% in Portuguese and 71% in Tetum. As expected, the percentage of children successfully answering these questions increased in subsequent grades for both languages, with the percentage answering correctly in third grade rising to 86%.

cover of a book, the reading direction, from left to right in western languages, a knowledge of letters and an ability to recognize some words (Clay, 1989; Dickinson & Snow, 1987; Kuby, Aldridge, & Snyder, 1994; Neuman & Roskos, 1993).

Table 4:
Orientation to print: percentage of correct answers according to
the evaluate language and the grade of the students

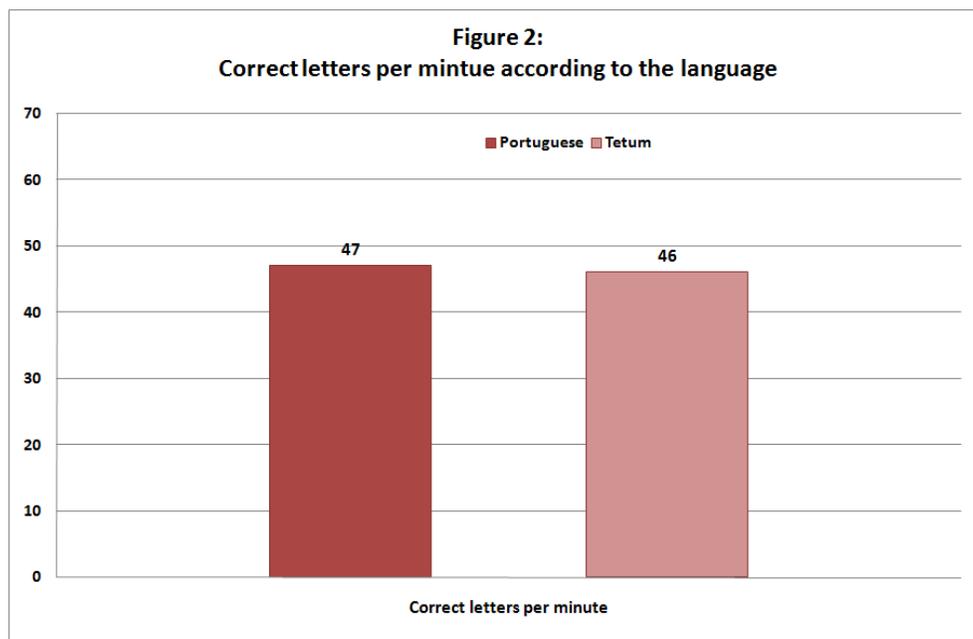
Evaluated languages/grades	Correct answers (%)
Portuguese	
1st grade	67
2nd grade	82
3rd grade	86
Tetun	
1st grade	71
2nd grade	83
3rd grade	86

The next five EGRA components focus on ability to identify letters and words, and the ability to read and understand text, as follows:

- Component 2 -- letter recognition;
- Component 3 -- the identification of multi-letter sounds or phonemes
- Component 4 -- familiar word identification
- Component 5 -- non familiar word identification
- Component 6 -- reading and comprehension.

Each of these components assesses the fluency of a child with letters, words and text by limiting the response time of each individual assessment to one minute.

Letter recognition: A page containing 100 letters of the alphabet was provided to the child. The frequency of repetition of letters was based on international letter frequency studies in the Portuguese language. Because no such letter frequency studies exist for Tetun, the same frequency of letters was used for both languages. On average, the interviewed children were able to recognize 46 and 47 letters correctly per minute in Portuguese and Tetun, respectively (See Figure 2). While well below what would be expected in high income countries -- the performance on letter recognition in Timor-Leste is higher than similar EGRA results in African countries.



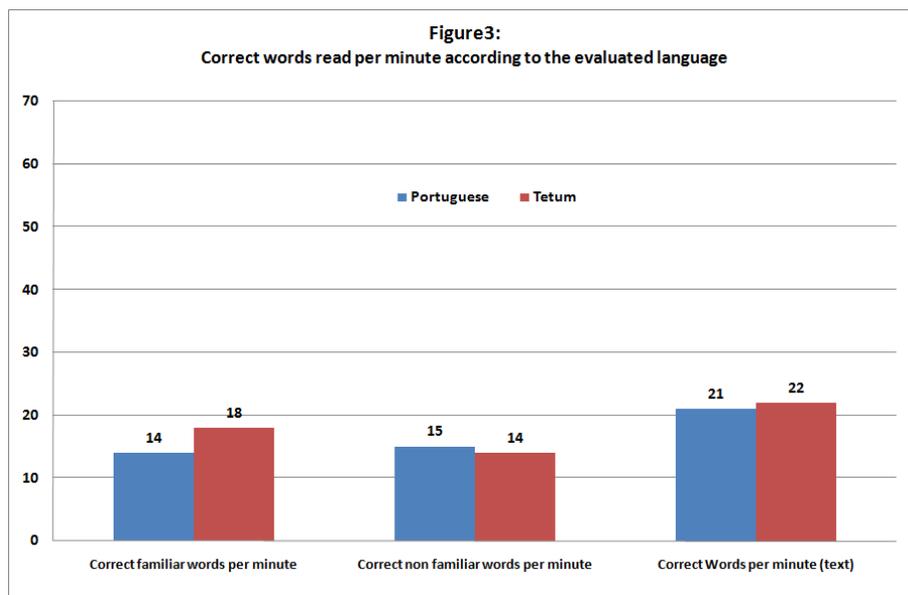
Phonemic skills: A crucial skill for reading acquisition is the ability to translate a series of letters into sounds which are called phonemes. In this component, three words were read to the child, two of which began with one sound and one of which began with a different sound. This exercise was repeated up to 10 times, providing the child could answer within one minute. On average, the children evaluated in Portuguese were able to identify 4.6 words that began with the different sound and the children who were evaluated in Tetum were able to identify 4.8 words on average that began with a different sound. This represents a success rate of less than 50% (See Table 5). 66 students surveyed in Portuguese and 50 students surveyed in Tetum (12% of the sample) were not able to identify any differences in phonemic sounds. Performance improved somewhat, but not significantly from grade 1 to grades 2 and 3. Children in Timor-Leste showed serious weakness with the ability to translate letters into sounds, which is an important foundation skill for learning to identify words and read and comprehend text.

Table 5: Quality of the Phonemes - Average number of correct answers according to the language and the grade

Languages and grades	Average number of answers
Portuguese	4.6
1st grade	3.9
2nd grade	4.5
3rd grade	5.3
Tetum	4.8
1st grade	4.2
2nd grade	5.0
3rd grade	5.2

Familiar and non-familiar word recognition: Components 4 and 5 focus on the ability to recognize words. In component 4, the child was shown a table containing 50 simple words that are common to the child's daily life and asked to pronounce as many words as possible in one minute. In component 5, this exercise was repeated using a table of 50 non-familiar words. Non-familiar words are used to ensure that the child is forced to focus on the pronunciation of words and is not relying only on memorization of known words as symbols.

On average, students in all 3 grades were able to correctly identify only 14 and 18 familiar words correctly in Tetum and Portuguese, respectively, in a period of 60 seconds (see Figure 3 below). Results for non-familiar words were similar. Only 14 non-familiar words were pronounced correctly on average by those assessed in Tetum and only 15 such words were read correctly in Portuguese.



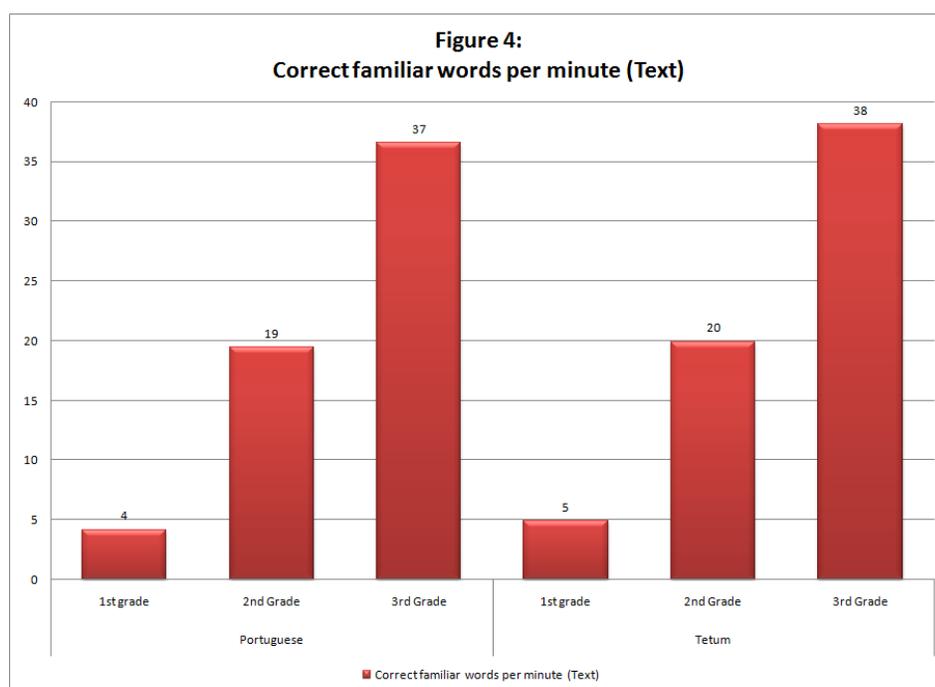
When the results are broken into grades, the findings show a progressive improvement from grade 1 to grade 3, although starting from a very low base. On average, after one full year of schooling, the students in 1st grade were able to pronounce only 3 familiar words in Portuguese and 5 familiar words in Tetum per minute. By grade 3, students were able to identify 25 and 31 words per minute in Portuguese and Tetum, respectively. The results across grades were similar for the pronunciation of non-familiar words.

In addition to the fact that the overall averages are low across components 3-5, the findings show that a large share of students in the crucial early grades of primary had gained no reading or reading acquisition skills whatsoever. The findings showed that 42% of the students evaluated in Portuguese (199 students out of the sample of 484 students) could not read or pronounce any words correctly. In Tetum the percentage of zero scores is 37% (169 out of 460 students). With regard to non-familiar words, 35% of the students evaluated in Tetum and 40% of the students evaluated in Portuguese could not pronounce any of the words correctly. The share of zero scores was also high for identification of phonemes: 30% of the students evaluated in Portuguese and 26% of students evaluated in Tetum could not identify any of the phonemic sounds correctly (See Table 6 below).

Table 6:
Students that did not complete the selected activities - Score Zero

	Portuguese		Tetum	
	Nr. Of students	%	Nr. Of students	%
Sample assessed	484	100	460	100
Alphabet letter	61	13	51	11
Familiar words	199	41	169	37
Non Familiar words	193	40	162	35
Identification of phonemes	146	30	118	26

Reading fluency: In component 6, children were given a short connected text and asked to read as many words as possible in one minute. This exercise was followed by a series of comprehension questions. On average, grade 1-3 students were able to read 21 and 22 words correctly in Portuguese and Tetum, respectively (see Figure 3 above). There was some improvement across the three grades, but starting from a very low base. After one complete year in school, students in grade 1 were able to read only 4 words per minute in Portuguese and 5 words per minute in Tetum. After 3 years in school, the average reading rate per minute was 37 and 38 words per minute in Portuguese and Tetum, respectively (see Figure 4 below). Many education systems in developed country environments aim for a fluency rate of 40-60 words per minute by the end of grade 1 and 100 words per minute by the end of primary grade 3.



As with the reading acquisition skills in components 3-5, the overall averages masked a high percentage of zero scores. More than 70% of students at the end of grade 1 could not read a single word of the simple text passage they were asked to read. 40% of children were not able to read a single word at the end of grade 2; and the share of children scoring zero dropped to about 20% at the end of grade 3. The assessment provides clear evidence that many children spend years in primary schools in Timor-Leste without learning to read.

The results for reading fluency in Timor-Leste, however, reveal a large variance between children who have little or no reading skills and children, particularly in grade 3, who have attained some level of reading fluency. About one third of children in grade 3 (108 out of 302) were able to read at least 58 words per minute.¹⁰ Although this reading fluency would be considered low for grade 3 students in high income countries, it is considered by many childhood reading experts as a minimum standard for reading fluency. Some primary schools and some teachers in Timor-Leste are effectively teaching reading, which represents success on which the country can build.

The results described above reveal that grade 1-3 students in Timor-Leste have reasonable knowledge of the letters of the alphabet, but have difficulty translating these letters into sounds or the sounds into words. This lack of basic reading skills results in a failure to read fluently and to understand what they are reading.

Following the reading of the short passage, students were asked simple questions about the text. Of the students evaluated in Portuguese, 61% (297 of 484 students) were not able to answer any of the comprehension questions. In Tetum, 51% (234 of 460 students) were unable to answer any of the comprehension questions. The large number of zero scores is explained somewhat by the fact that nearly half of children were unable to read the test and therefore unable to answer the questions. But even for those who completed the reading passage, the assessment showed serious problems with comprehension. Table 7 shows the frequency of incorrect answers in each of the 6 comprehension questions by language.

¹⁰ The reading text used in Timor-Leste was a total of 61 words. Average correct words per minute rates would be slightly higher if taking into account that a share of children would have read more than 61 words in one minute. Because the time of completion of the reading assignment was noted, it is possible to extrapolate scores for those children who completed the assignment in less than 60 seconds. Using this calculation, average correct words per minute fluency would have been about 24 words per minute for all three grades, and 45 words per minute for grade 3, in both languages.

Table 7:
Reading and Comprehension: frequency of errors according to EGRA
questions

	Portuguese (%)	Tetum (%)
1st question	68.6	55.0
2nd question	90.9	87.6
3rd question	71.5	59.1
4th question	71.7	67.4
5th question	70.9	73.3
6th question	72.1	78.7
All questions wrong or not answered	61.4	50.9

International research has shown that reading fluency – the speed and accuracy at which a person reads – correlates closely with reading comprehension. This research was borne out in Timor-Leste. Low reading fluency – about 21-24 words per minute on average in grades 1-3 – corresponds to very low levels of reading comprehension. But the reading fluency showed only a 49% correlation with performance on the comprehension questions.

Component 7 of the EGRA instrument is **listening comprehension**. In this activity, the interviewer read a short passage for the student and then asked questions aimed at confirming comprehension. On average, 37% of the students evaluated in Portuguese answered one or more questions incorrectly on this activity. In Tetum this percentage was 25%. From the total of 460 students tested in Tetum, only 28 evaluated students failed to answer any of the questions correctly. In Portuguese, 99 students answered all questions incorrectly and 58 students could not provide any answer to the questions. This means that nearly 30% of the students of the sample tested in Portuguese did not answer any question or answered incorrectly.

The listening comprehension activity suggests that there is a different level of understanding between the two languages. While the results for neither of the two languages were strong in listening comprehension, students performed better in Tetum on average than in Portuguese. On average, in the reading comprehension activity the students could answer 1.2 and 1.8 questions correctly, from the total of six questions in Portuguese and in Tetum, respectively. In the listening comprehension activity, the students evaluated in Tetum answered three questions correctly, while in Portuguese this average was 1.1. The performance of the students of the 1st grade of basic education is very low both in Tetum and in Portuguese. Performance does increase somewhat by grade, but more so in Tetum than in Portuguese (see Table 8).

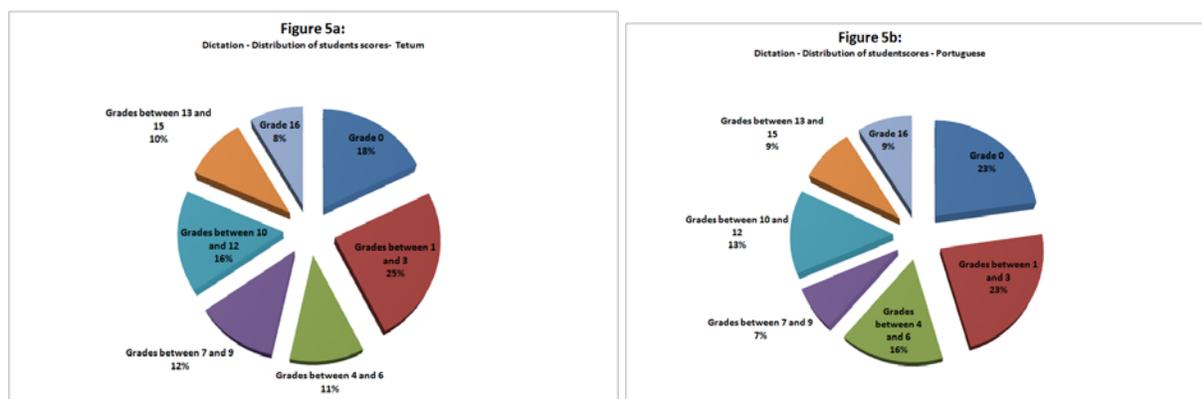
Table 8:
Average number of questions answered correctly in the text reading and understanding and listening comprehension activities

	Text reading and understanding	Listening comprehension
Total Questions	6	5
Portuguese	1.2	1.1
1st grade	0.2	0.8
2nd grade	1.0	1.1
3rd grade	2.4	1.4
Tetum	1.8	2.9
1st grade	0.4	2.2
2nd grade	1.7	2.9
3rd grade	3.3	3.4

The final activity, component 8, is dictation which aims to assess understanding and writing skills. Students were read a sentence and asked to write the sentence on paper. Performance on this activity was the lowest of all components both in Portuguese and in Tetum. Eight evaluation criteria were used and the maximum score for each of these criteria was two; therefore, the maximum score a student could receive was 16. Students were scored on ability to orient the sentence in the correct direction and use proper punctuation. -- for example, beginning the sentence with an upper case letter and adding a period or full stop at the end (see Figures 5a and 5b).

Nearly 20% of the evaluated students could not write any of the words of the sentence correctly regardless of the evaluated language (the percentages were 18% of the students in Tetum and 23% of the students in Portuguese). The distribution of the students' total scores is shown in graphs 5a and 5b. Further findings are as follows:

- 1) More than 40% of the students, both in Portuguese and in Tetum, obtained scores between 0 and 3.
- 2) 56% of the students tested in Tetum scored below 8 points and 65% of those tested in Portuguese scored below 8 points.
- 3) Less than 10% of the students were able to obtain the maximum score in this activity.



The analysis disaggregated into each of the evaluation criteria showed an 80% success rate for direction of the writing in both languages. However, the other evaluation criteria showed significantly higher error rates:

- 1) Nearly 50% of the students evaluated in both Tetum and Portuguese did not begin the sentence of the dictation with a capital letter.
- 2) More than 80% of the students in both languages did not put the period at the end of the sentence.
- 3) Nearly 70% of the students evaluated in Portuguese could not write the word “Pai” (Father) correctly.
- 4) More than 60% of the students could not write the word “comprar” (buy) correctly in Portuguese.
- 5) More than 60% of the students in Portuguese, and 51% of the students in Tetum, used the proper spacing between words.

In 6 of the 8 evaluation criteria, the average grade in both Portuguese and Tetum did not surpass 1 (see Table 9). The total average score was 4.8 in Portuguese and 6.1 in Tetum.

Table 9:
Dictation - Average of points in the evaluation criterias

	Total points	Average of points in criterium 1	Average of points in criterium 2	Average of points in criterium 3	Average of points in criterium 4	Average of points in criterium 5	Average of points in criterium 6	Average of points in criterium 7	Average of points in criterium 8
Portuguese	4.8	0.8	0.6	0.6	0.8	0.7	1.6	1.0	0.4
1st grade	2.2	0.4	0.2	0.2	0.3	0.3	1.3	0.7	0.2
2nd grade	4.9	0.7	0.5	0.6	0.7	0.7	1.6	1.0	0.3
3rd grade	7.6	1.3	1.0	1.0	1.3	1.1	1.9	1.4	0.6
Tetum	6.1	0.7	1.0	0.8	0.7	0.8	1.7	0.7	0.3
1st grade	3.1	0.3	0.4	0.3	0.3	0.3	1.4	0.4	0.1
2nd grade	6.5	0.8	1.0	0.8	0.8	0.9	1.7	0.8	0.4
3rd grade	8.9	1.1	1.5	1.3	1.1	1.3	1.9	0.9	0.5

Once again, similar to the listening comprehension activities, the students performed better on the dictation exercise in Tetum than in Portuguese. However, performance was not strong in either language.

6. Relationship between reading ability and the educational environment.

This section of the report will present the relationship between performance in reading acquisition and the characteristics of the students, their schools and their learning environment in general. In order to analyze these relationships, the various skills measured in the assessment were consolidated into a single results indicator. This indicator is a weighted average of the results on all the components of the reading assessment. A computation of linear regressions identifies characteristics that are associated with a significant impact on reading ability. It is important to note, however, that these associations do not prove a direct causality between any single characteristic and better performance on the assessment.

Factors associated with overall performance on the assessment. The first finding from this exercise is that when controlling for all other aspects, the most significant element to explain the difference in reading ability is the grade the student is in. Students improved their skills, if only to a limited extent, as they advanced between grades. However trivial this may seem, it does confirm that the learning process is happening in schools. It also provides evidence of the survey's validity, as such a progression would be an expected finding.

Another important result to be noted is that neither the student's gender nor the wealth of the student's family seems to have an impact on his or her reading results. All other things being equal, girls performed just as well as boys, and poorer children performed just as well as wealthier ones. Wealth in the survey is measured as an average of the household characteristics listed in table 3 on page 3. It is possible that the lack of variance on reading performance based on household wealth is explained because there is not enough disparity in wealth among the children assessed for a difference to be measured. However, this finding could mean that much of what determines reading ability results from the learning environment, and from teachers' and parents' behaviors -- elements that can be changed relatively easily.

With regard to characteristics of parents, the impact analysis seems to suggest that whether or not the parents can read does not have an effect on the child's reading ability. However, the analysis shows that reading stories to children, whether in school or in the household, is positively correlated with better reading skills.

Characteristics of the classroom and school also seem to be important. The results suggest that students whose teacher reads to them in the classroom have better reading skills. Children who reported that their school has a library also performed comparatively better on the assessment. It was common for children in the same school to report the existence of a library and to report that the school had no library, probably reflecting a definitional issue with the concept of a library. But it is an

interesting finding that those students who reported that their school had a library – and were therefore presumably aware of reading materials in the school – showed better performance on the assessment.

Other pedagogical approaches that were associated with better reading results were the use of homework and the language spoken in class. Students whose teacher speaks both Tetum and Portuguese in the classroom performed better than children whose teacher speaks only one of the two languages or the local language. Children who reported having had homework in the week preceding the assessment scored better than those who had no homework.

Finally, the importance of attendance and previous enrollment in preschool were examined. As expected, a child's attendance at school seems to be linked to better reading results. Although it is only a partial measurement of attendance, children who reported having missed some classes during the week preceding the interview scored significantly lower on the assessment than those who did not report absences from class. While it may be true that better students tend to have better attendance rates, it is also obvious that children are unlikely to gain reading skills in Timor-Leste if they are not in school regularly.

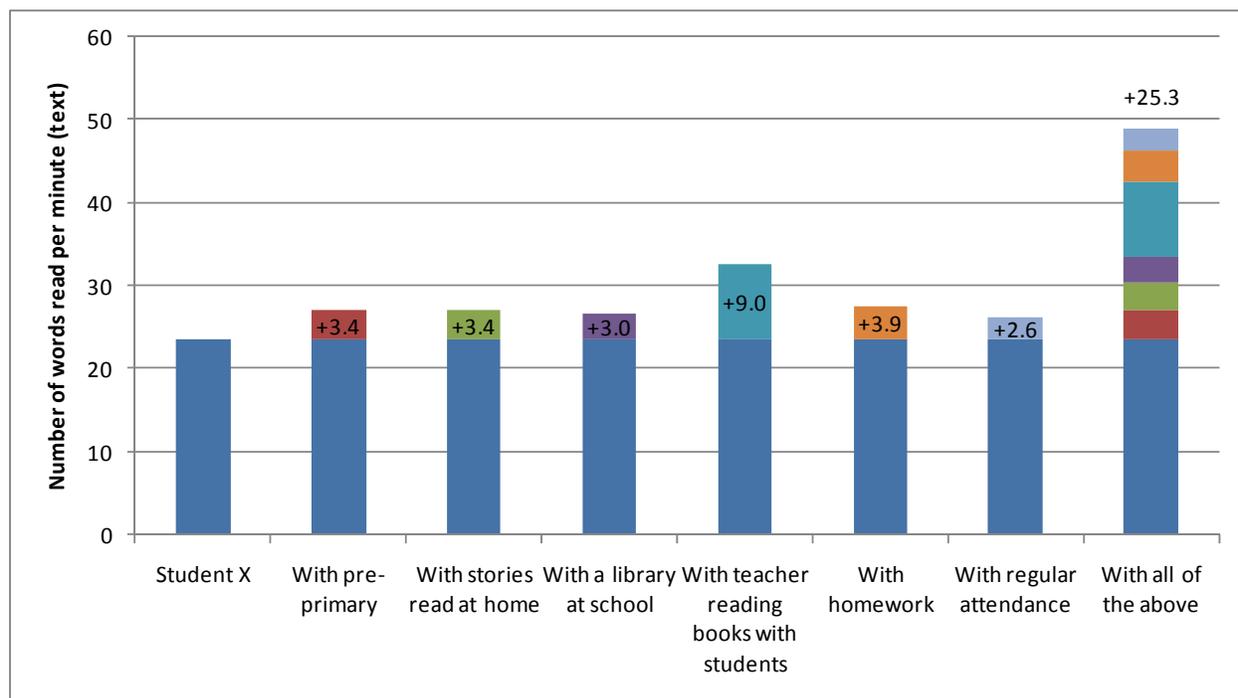
An unexpected finding was that performance on the assessment as a whole did not seem to be associated with previous enrollment in preschool. It is likely that this finding is attributable to the lack of focus in pre-school programs on reading and building reading acquisition skills, such as letter recognition and orientation to text. As will be discussed below, preschool attendance does seem to be related specifically to better reading fluency.

Factors associated with performance on the reading text only. In order to get a better picture of reading fluency, a similar analysis was performed looking at the factors that were associated with performance only on the text reading exercise (component 6). In terms of correct words read per minute, the language spoken by the teacher in the class did not seem to make a significant difference. However, attendance at preschool programs did seem to be slightly positively correlated with this specific skill.

The first blue column in Figure 6 below shows the average number of correct words per minute that were read by grade 3 students who shared the following characteristics: no preschool education, nobody at home to read with him or her, no library in the school, no reading with the teacher in class, no homework and some missed schools in the week before the assessment. The average reading fluency was 24 words per minute for grade 3 students who fit this profile. The successive columns in Figure 6 show the impact on the number of words that a student can read correctly in one minute when each of the above-listed characteristics changes to positive. A grade 3 student with all these characteristics combined would be able to read on average 25 more words per minute than those in the initial group, up to a total of almost 50 words per minute.

This analysis suggests that there are many potential levers available to the Government of Timor-Leste to improve reading acquisition in primary schools.

Figure 6: Typical gains in numbers of words per minute according to various characteristics



7. Recommendations for Action

The findings contained in this paper show that the status of reading acquisition among children in the first three grades of primary in Timor-Leste is low. The majority of children in all three grades lack the core skills needed to become better readers as they advance in school and ultimately to master the post-grade 3 curriculum. Because of the fundamental nature of reading ability for learning, improving the status of reading acquisition in the early grades should be the most important priority for all education stakeholders in Timor-Leste until the status of reading acquisition improves.

This section recommends a number of actions that should be considered in reaction to the EGRA findings:

- EGRA results call for urgent improvements in reading instruction.** The most obvious action that can be taken to improve the status of reading acquisition in Timor-Leste's primary schools is to help existing teachers improve their ability to teach reading. The EGRA findings point to specific weaknesses in areas such as phonetic awareness and decoding. Primary teachers in Timor-Leste need to focus on such aspects of reading acquisition and be helped to develop new approaches to reading instruction. The Ministry of Education has already started this effort. Using funding from FTI, the Ministry has contracted international and national reading specialists who are developing a reading instruction training program that aim to address the reading acquisition issues identified in EGRA. Trainers have been identified and the training of

these trainers will be carried out in late 2009/early 2010. Currently plans are to roll out instructional training for reading to all grades 1-3 teachers during the first half of 2010. This initiative is a first start. The sustained improvement of reading acquisition in Timor-Leste will depend on the Ministry's commitment and capacity to refine and continue this teacher support program.

- **EGRA results call for the urgent provision of reading support materials.** The Ministry of Education has also made a good start in this key area. Again using FTI funding, approximately \$1.1 million in instructional materials for reading are being procured and will be delivered to all primary schools in Timor-Leste in the first half of 2010. These materials include books as well as reading resource materials (visual reading aides, charts, games, etc.). The initial purchase of materials is mostly in the Tetum language. This urgent procurement of materials also represents only a start. A sustained commitment by the government of Timor-Leste to make learning materials available in its classrooms will be required. Given Timor-Leste's small size, a reliance on procuring educational resource materials – as opposed to developing them in-house within the Ministry – will likely continue to be the most cost-effective approach.
- **EGRA results call for the establishment of national reading standards.** A first step in establishing national reading standards is to evaluate current curricular programs for primary in order to determine the extent to which they focus adequately on instruction for reading acquisition. Benchmarks for reading acquisition should be drafted and piloted to verify their appropriateness. Eventually these benchmarks should be the central focus of in-service programs as well as the pre-service training curriculum.
- **EGRA results call for the improvement of preschool programs.** Despite a large body of international research showing that preschool programs are positively related to improved reading acquisition, the EGRA survey in Timor-Leste did not show a strong relationship between preschool attendance and reading performance. As mentioned above, this finding may be attributable to the lack of reading programs in the preschool curriculum. The introduction of focused early reading programs in preschools and the training of preschool teachers to promote the development of early reading skills could be one of the most important investments for Timor-Leste in terms of improving reading acquisition results in its primary schools.
- **EGRA results call for consideration of an improved language policy.** Educational research worldwide has shown that children tend to learn to read better if reading is taught in their maternal language. While it may not be possible in Timor-Leste to provide early grade reading instruction in all the country's languages in the short term, it is likely that a key tool to improving reading acquisition will be a more focused use of local languages in the medium to long term.
- **EGRA results suggest that efforts should be taken to encourage parents to become more involved in their schools and to participate in their children's school life.** The EGRA results showed that more than a quarter of parents do not follow their children's homework and that half of students reported having been absent from school in the week before the survey. International research suggests that family involvement is one of the essential elements for the

success and permanence of the students. The Ministry's school grants program is meant to promote more community and parental involvement in schools, but this aspect of the grants program remains lacking. School grants could yet become an important tool to promote parental involvement in schools.

- **EGRA results call for a new reading policy and development of a public campaign.** A clear national policy for improving reading should be developed in consultation with all stakeholders (parents, teachers, principals, Ministry leadership and staff, NGOs, and donor partners). The policy should indicate the roles and responsibilities of all stakeholders, and contain short and medium term improvement targets that are easy to communicate and understand. The campaign should also emphasize the importance of reading outside the school environment. EGRA results showed that those students with books at home tended to be stronger readers. Book donations by the private sector and NGOs, as well as publicly funded library programs, should also be considered as part of a broad literacy campaign.¹¹
- **EGRA results call for the regular repetition of early grade reading assessment.** Repeating EGRA on an annual or bi-annual basis will provide a benchmark for monitoring progress in achieving the country's reading goals. It will also provide curriculum developers and teacher trainers with a continuous source of feedback on their efforts to improve teaching and learning in Timor-Leste's primary schools. Now that the instrument has been adapted to the country's educational context (although further adaptation will likely be required) and a cadre of interviewers has been trained, the cost of the field work for a single repetition of EGRA is estimated to cost less than \$30,000. EGRA is an affordable tool for monitoring the quality of teaching and learning in Timor-Leste.

¹¹ In Brazil, for instance, public programs aimed at providing incentives for reading have been developed by the Ministry of Culture (National Programs for the Incentive of Reading - PROLER). There are also programs in Brazil organized by the private sector, such as the banking industry, which include donations of books to school libraries, donations of computers, author readings and other reading-oriented activities.

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