



Republic of Yemen  
Ministry of Education  
Education Section  
Inclusive Education  
department

# Literacy Boost Yemen Baseline Report

March 2011

Shannon Gavin



Supporting



Save the Children





Republic of Yemen  
Ministry of Education  
Education Section  
Inclusive Education  
department

# Literacy Boost Yemen Baseline Report

March 2011

Shannon Gavin


COVER PHOTO BY SALEH AWADH



Supporting




Save the Children



With special thanks to Muna al-Attas and Amy Jo Dowd, to the entire Save the Children staff in Aden, Lahej, and Abyan (especially: Abeer, Fatima, Asma, Gawad, Jehan and Mohamad Nuh) and the wonderful assessors from both SC field offices and from Ministry of Education, and to Reham and the six data entry assistants.

For several weeks, many of these individuals shifted their whole focus at work to the details of planning, coordinating, and implementing this assessment. Without their hard work, this would never have been possible. Thank you for giving your time and efforts so generously. I'm grateful for having had the opportunity to work with each of you!





## CONTENTS

Executive Summary	4
Introduction	5
Methodology	6
Linguistic Context: The case of Arabic Diglossia	7
Findings	8
Letter knowledge	10
Most Used Words	12
Analysis by Word Types	14
Reading Fluency and Reading Accuracy	16
Comprehension Questions: Reading Comprehension and Oral Comprehension	17
Relationships between Student Background and Reading Skills	18
Relationships between Literacy Preparation and Reading Skills	20
Literacy Resources	20
Household Literacy Habits	21
Gender Gap	22
Regional Gap	22
Average Scores by School	23
Recommendations	24
Resource Rooms	26
Parents Councils	27
References	28



## EXECUTIVE SUMMARY

This report outlines the findings from the reading assessment administered to 659 children from the three Yemeni governorates of Aden, Lahj, and Abyan in February 2011. Random samples of children from 1st, 2nd, and 3rd grade were selected from each school. They were assessed on six reading skills components: 1) understanding of concepts about print, 2) knowledge of the alphabet, 3) ability to read the most common words from their curriculum, 4 & 5) fluency and accuracy in reading a grade-level passage, and 6) either reading or oral comprehension of the same passage. This assessment also gathered information on the students' socio-economic background and home literacy environment.

Analysis of the sample students' socio-economic backgrounds in relation to their reading skills' scores revealed that children from more well-off homes tended to perform better on all literacy measures. Similarly children who have access to books in their home and whose family members engage in reading on a weekly basis performed better than those who come from homes with a weaker literacy environment.

Results from the letter knowledge component demonstrated that children's alphabetic knowledge improves across the early grades; yet, there are still large percentages of children in each grade that know less than 60% of their letters. Findings revealed a strong correlation between students' letter knowledge and their word reading ability, suggesting that increased instructional focus on alphabetic awareness may lead to improved reading outcomes, especially for those children with the lowest current levels of reading ability.

In terms of reading individual words selected from their curriculum, children faced difficulty identifying words that are similar in shape as well as words that are not common to their oral vocabulary. The current approach to early reading instruction in Yemen employs the "whole word approach, which encourages students to memorize the shapes of words. Based on assessment findings, this approach seems ill-suited for Arabic reading instruction as children tend to confuse similarly-shaped words. Furthermore, the Arabic language is full of homonyms and words that can only be distinguished from one another by a single dot above or below one letter. The assessment findings provide strong evidence that the instructional approach should be changed to one which incorporates phonics instruction.

These findings reveal several areas in which Save the Children could implement trainings and activities which could greatly facilitate literacy acquisition for Yemeni children. Save the Children can train teachers on incorporating phonics instruction into the early grade reading program and on the importance of using words common to children's oral repertoires. SC can use the findings to educate parents on the benefits of engaging in literacy activities at home and equip them with a variety of activities that they can use with their children on a daily basis. Efforts should also be made to make more Arabic reading material available to children; innovative ways for doing so have been developed by SC Literacy Boost programs in other countries. After implementing these recommendations, SC can conduct this assessment at regular intervals to see if their efforts actually lead to improved literacy outcomes for children in Aden, Lahj and Abyan.



## INTRODUCTION

Prior to conducting this assessment, the Yemen Country Office (YCO) of Save the Children had identified a pressing need to address the literacy skills of children in the schools it supports. Strong evidence of the need for improved literacy instruction came from the very low performance of Yemeni 4th graders on the TIMSS (The Trends in International Mathematics and Science Study) assessments in 2003 and 2007. According to a UNDP commissioned report, Yemeni teachers explained that the low performance of their students was not related to poor understanding of math and science concepts, but rather due to their inability to read the test questions (Aggarwala, 2004). Based on these findings and experience in the schools it supports, the YCO decided to re-focus its efforts on supporting early reading skills.

Before embarking on a program to improve basic reading skills, the YCO decided to conduct an assessment to gain a more detailed understanding of where children's current strengths and weaknesses in reading lie. In addition, this assessment would provide the YCO with baseline data by which to measure their progress in helping children learn to read over the next several years. Save the Children Offices around the world have begun to assess the reading skills of children in the schools they support using a tool called the Literacy Boost Assessment. This assessment shares some indicators with the Early Grades Reading Assessment (RTI, 2008), but was developed to inform and evaluate programs and adjust interventions to the local context of each Save the Children program. So far the Literacy Boost Assessment has been adapted and implemented in Malawi, Nepal, Pakistan, Guatemala, Ethiopia, Vietnam, Mozambique, Bangladesh, Mali, Haiti, Uganda and the Philippines.

Thus, the first step in the process of this assessment was to adapt the Literacy Boost Assessment tools such that the socio-economic background questions were appropriate for the context of Aden, Lahj, and Abyan and that the reading skills components reflected the material covered in the Yemeni curriculum for grades 1, 2, and 3. Upon review and analysis of the national Yemeni curriculum, we selected a series of frequently-occurring words from the textbooks for each grade for the "Most Used Words" component. We then wrote reading passages for each grade comparable in length and complexity to those found in their school books. Then we piloted the tools in two schools in order to test the appropriateness of the assessment and the ease with which students understood the questions. After the pilot, we made the necessary adjustments before implementing the assessment in the selected schools.



## METHODOLOGY

We conducted the assessment in 11 schools in the 3 governorates of Aden, Lahj, and Abyan in the south of Yemen. Initially, it was planned to sample only schools that Save the Children supports through its “Inclusive Education” program funded by Dubai Cares. However, after discussions with representatives from the Ministry of Education (MoE), it was decided to also include one non SC-supported school and one SC-school that serves the primarily Somali refugee population in Aden. Thus, the final sample included 9 “Inclusive Education” schools and 1 non-SC supported school, and one SC-supported refugee school. Of the 11 schools, 4 were in Aden, 4 in Lahj and 3 in Abyan. In each governorate, one boys school, one girls school and two mixed schools (or in the case of Abyan, one mixed school) were selected.

We decided to conduct the assessment in grades 1, 2, and 3 because local staff felt that it would be important for us to see the progression of reading skills across the first three years. Thus, at each of the 11 schools, 10 girls and 10 boys from each grade were assessed for a total of 60 children per school and 660 total. At one school in Aden due to power outages, we had to leave before finishing the last assessment. Thus, our total number of children assessed was actually 659. In one school in Lahj, there were not enough boys for the sample, so girls were selected instead. Thus the total number of girls sampled was slightly higher than boys (334: 325). Students were initially selected randomly from class lists; however, due to low attendance most selection had to be re-done inside the classroom, by selecting every 5th child.

39 assessors were hired to conduct the assessments. Initially, we had considered hiring volunteers, potentially recent college graduates. However, after discussions with MoE representatives, we decided instead to employ school inspectors and local Save the Children staff members. This was seen as a better option because school inspectors and SC staff already have a vested interest in education. They are familiar with the schools we were working in and most inspectors had decades of experience teaching and monitoring Arabic language classes in Yemen. Thus, their knowledge of the teaching approaches and curriculum would inform the assessment. At the same time, most of them demonstrated personal and professional interest in the results, as well as a strong desire to improve learning outcomes in Yemeni schools.



## LINGUISTIC CONTEXT: THE CASE OF ARABIC DIGLOSSIA

In most schools throughout the Middle East and North Africa (MENA), Arabic is the official language of instruction and many would assert that it is also students' first language. However, this statement obscures the diglossic nature of Arabic. Diglossia refers to a linguistic situation in which two language varieties coexist: a low-status spoken dialect which has no standardized written form and an extremely divergent high-status variety which is the medium for almost all written material (Ferguson, 1959). The second variety in Arabic derives its prestige from its religious, political, and cultural significance. Classical Arabic, or *fuṣḥa*, is the language of the Quran and it is seen as a unifying force in a region of highly divergent, sometimes mutually unintelligible colloquial varieties. All spontaneous, informal speech in the Arab world is conducted in the lower-status dialects, referred to as *amiyya*. *Amiyya* is the language that Arabs learn to speak as children, whereas *fuṣḥa* is acquired primarily through formal education.

Limited exposure to *fuṣḥa* prior to school entry makes literacy acquisition particularly challenging for Arab children. When children learn to read in their mother tongue, they often rely upon their oral vocabularies in order to comprehend the words they decode. In Arabic primary schools however, children simultaneously learn to read and learn a new vocabulary, even for everyday words. Significant phonological differences exist between colloquial Arabic and *fuṣḥa*, such that letters that are pronounced one way in *fuṣḥa* may have three different pronunciations in spoken varieties (Saiegh-Haddad, 2003). Learning to read and write in *fuṣḥa* also requires students to learn complex grammatical rules which have no equivalent in *amiyya*. A growing body of research provides strong evidence that this complex linguistic situation is a major contributing factor to low literacy rates and poor performance on reading assessments throughout the Arab World (Abu-Rabia, 2001; Dakwar, 2005; Ibrahim, 2001, 2009; Maamouri, 1998; Saigh-Haddad, 2003).



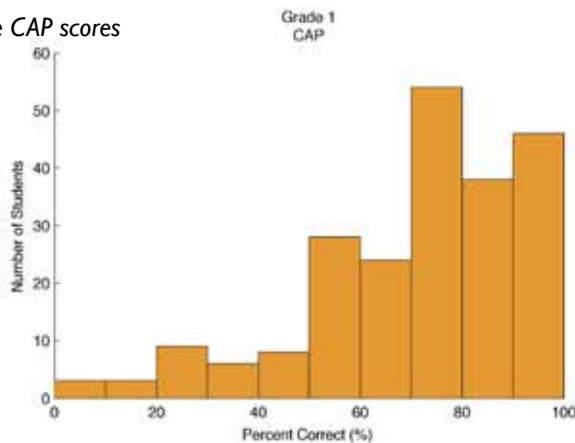
## FINDINGS

### Concepts about print (CAP)

The first component of the assessment tests children's pre-literacy skills. Assessors hand the child a book and ask him or her to identify the cover, the beginning of the story, the first word, a particular page, a letter, a word, the end of the book, etc. This section is particularly relevant for children in rural areas or those who have few books at home and thus, limited exposure to printed material. In our pilot test, we found that children in 2nd and 3rd grade answered on average, 11 and 12 questions correctly out of 14. However, we decided to include this component in the assessment implementation since we had piloted the tools in an urban and semi-urban school, but not in a rural location.

The results of our baseline assessment demonstrate that on average 1st graders were able to answer 10 out of the 14 questions correctly. However, the results reveal a wide range in the percentage of correct answers, from 0-100%. On average, 2nd and 3rd graders answered 11 and 13 out of 14 questions correctly, respectively. Thus, children's understanding of how to use books does improve as they progress throughout the early grades.

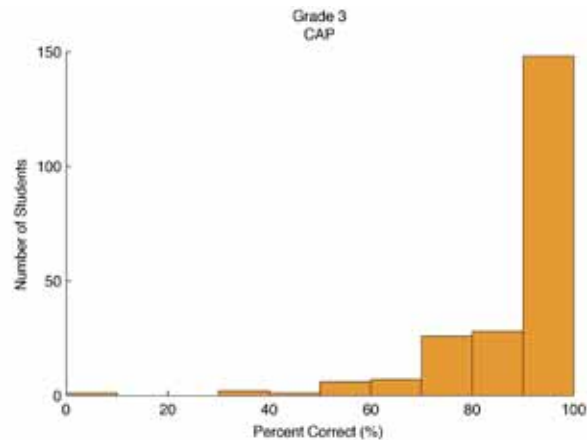
*Distribution of 1st grade CAP scores*





However, more importantly we also see that the distribution of scores changes dramatically over the course of the first three years. While 26% of first graders (57 children) scored lower than 60% on the Concepts About Print component, only 4.5% of 3rd graders (10 children) scored lower than 60%.

#### *Distribution of 3rd grade CAP scores*



Across all three grades, the two questions that the least number of children were able to answer correctly were questions 7 and 10, both of which require reading skills, not just background understanding. Question 7 asks the child to point to the words on a page as the assessor reads aloud and Question 10 asks him or her to identify a word on the page. Among 1st graders only 46% were able to follow along as the assessor read aloud, but by 3rd grade 79% of children were able to demonstrate this skill. This progression across grades is a positive sign, however, the children that continue to struggle with these basic skills in 3rd grade will need additional support to acquire understanding of these concepts which lay the foundation for subsequent literacy skills.

## LETTER KNOWLEDGE

The second assessment component tests children’s ability to identify the letters of the alphabet. Before presenting the findings from this section, it is useful to outline several features of the Arabic writing system which present challenges for the early reader.

First, although Arabic has only 28 consonants, most of these letters have four different shapes which vary depending on whether the letter occurs in independent, initial, medial, or final position in a particular word. Students must learn each of these shapes as well as the rules for connecting and non-connecting letters. Additionally, several letters are distinguishable only by the addition of a dot or dash above or below the letter. Arabic reading expert, Salim Abu Rabia, explains that “Recognizing the nature of these letters and their diverse writing rules in different positions...is critical for readers’ word identification in reading, which may demand considerable cognitive attention” (Abu-Rabia, 2002). For this reason, when adapting the Literacy Boost Assessment for Yemen, we divided the Letter Knowledge component into two sections. The first tests knowledge of letters in their independent position and the second tests knowledge of letters in a mixture of initial, medial and final positions, with an emphasis on those letters whose shapes change dramatically from one position to another.

While Arabic has 28 official consonants, the writing system also features diacritical marks and variants on several letters, knowledge of which is essential to becoming a competent reader. Thus each section of our assessment contains 35 test items, including the basic consonants, the 3 diacritical marks (َ ِ ُ) (which represent short vowels, the symbol for the glottal stop (ء), and 3 modified letters (آ اى ؤ).

It is also important to note that short vowels are not written in the majority of printed material. This can cause additional difficulties for readers because many words share identical consonantal structures. For example, if short vowels are not written, the following consonantal structure (علم) can represent six different words (Maamouri, 1998).

English meaning	Arabic word
Science	علم
Flag	علم
He learned	علم
It was learned	علم
He taught	علم
It was taught	علم

Thus, researcher Mohammad Maamouri explains that “...the reader must bring to task considerable additional knowledge of syntax, vocabulary, and sometimes, contextual interpretation in order to obtain correct and meaningful vocalization and reach word recognition... (Maamouri, 1998). Typically, textbooks for early readers throughout the Arabic-speaking world include all diacritical marks, both short vowels and those that have grammatical functions (Ibid). Such texts are referred to as “fully vocalized” and they are written this way in order to lighten the cognitive load on the student. When fully vocalized, Arabic has a highly predictable sound-symbol correspondence, which facilitates decoding skills. However, in the current Yemeni curriculum, short vowels are not included until the end of the first book for 1st graders. Even then, they are not included in a systematic way; some words are semi-vocalized, some fully and some not at all.

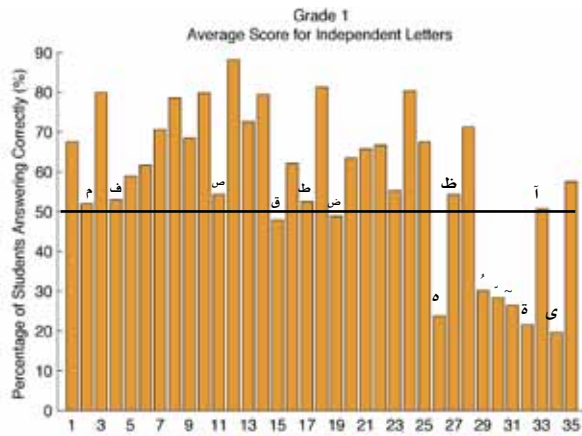
The current approach to teaching reading in Yemen adopts the “whole word approach;” children are taught to identify, distinguish and memorize whole words, rather than to decode them. Therefore, it is not deemed necessary to fully vocalize the first grade books. This issue will be revisited in the



recommendations section. However, the intricacies of the Arabic writing system suggest that more instructional time should be devoted to alphabetic awareness, decoding, and early writing skills in Arabic literacy instruction.

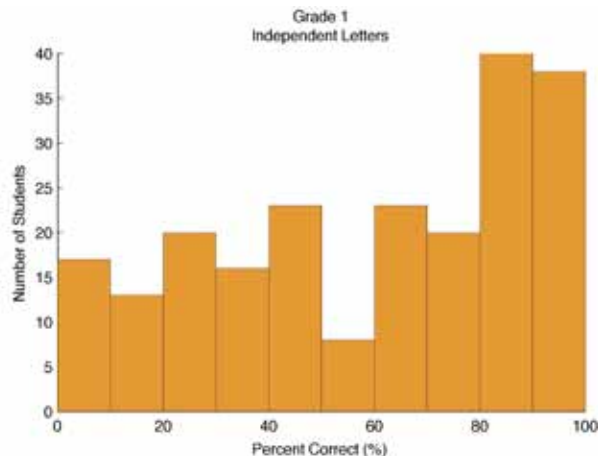
On average, 1st graders named 20 out of 35 letters correctly in their independent positions and 18 out of 35 letters in mixed positions. However, fewer than 30% of 1st graders were able to identify the three short vowels, the letter **ه** or the modified letters **ة** **ى**. Approximately half of first graders were unable to identify the pairs of consonants which are distinguishable only by the addition of dots, especially those which are also emphatic consonants ( **غ** **ع** **ف** **ق** **ص** **ض** **ط** **ظ** ).

### Letter knowledge



2nd graders identified on average 24 out of 35 letters in both independent and mixed positions; while 3rd graders identified 29 out of 35 letters in both categories correctly. By 3rd grade, 80% of students are able to correctly identify most letters, with the exception of the short vowels as well as ( **ة** **ى** **ه** ). Fewer than 60% percentage of 3rd graders were able to identify these letters.

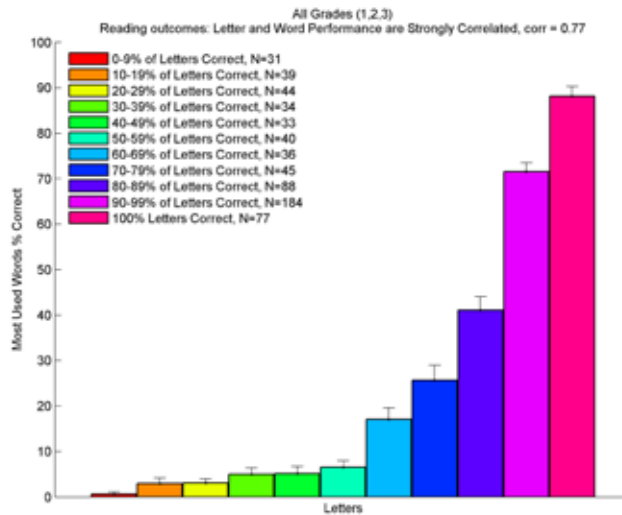
For both independent and mixed positions, scores for students in all three grades ranged from 0-100% of letters correct. In each grade, a substantial portion of students are able to identify fewer than 60% of the total letters: 51% of first graders (111 children), 36% of 2nd graders (80 children) and 20% of 3rd graders (40 students). The importance of improving letter knowledge for these students in particular should not be underestimated.





The graph below demonstrates that for children across all three grades, letter knowledge is strongly correlated with the ability to read words. In fact children that knew fewer than 60% of their letters were able to read on average less than 10% of the Most Used Words for their grade.

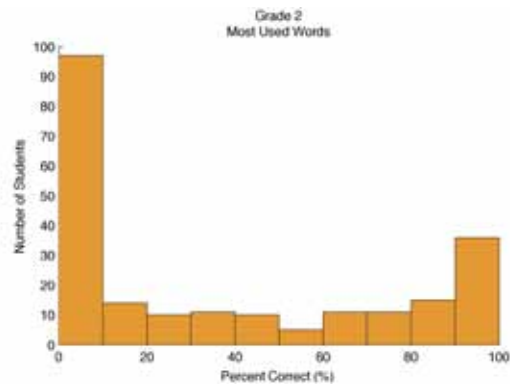
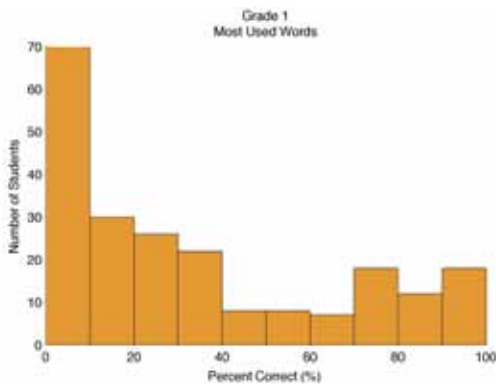
On the other hand children who knew 90-99% of their letters, read on average more than 70% of the Most Used Words correctly. Those who correctly identified 100% of the letters read on average approximately 90% of the words correctly. These results demonstrate the importance of letter knowledge as a foundational skill for word reading in Arabic.



## Most Used Words

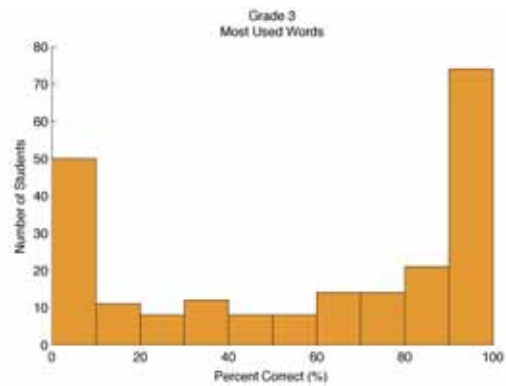
The third assessment component tests children’s ability to read words in isolation. 1st graders were tested on 10 words taken from their curriculum, while 2nd and 3rd graders were tested on 20 words taken from their respective school books. On average, 1st graders were able to read 3 out of 10 (30%) individual words. 2nd graders read 7 and 3rd graders read 11 out of 20 words correctly on average (35% and 55% respectively).

These results do point to a progression in word reading ability over the course of the three years. However, the distribution of scores still ranges from 0-100% of words correct in each grade and in 1st and 2nd grade, scores are heavily skewed towards 0% correct (see graphs).





A substantial portion of students in all three grades are unable to read a single word: 31% of 1st graders, 37% of 2nd graders, and 20% of 3rd graders. The graph of the distribution of scores for 3rd grade shows that students are clustered at the high and low ends of word reading abilities. These findings point to the pressing need to identify and provide remedial support for children who are unable to read individual words in 3rd grade.



## ANALYSIS BY WORD TYPES

### 1<sup>st</sup> Grade Results by Word

The word that the highest percentage of 1st graders were able to read was دار (house). Out of all first graders, 61% read دار correctly. This was the most frequently used word in their curriculum. It is a one syllable word, consisting of a consonant-vowel-consonant (CVC) structure. Upon examining the results of only those children who were able to read at least one word correctly, 92% read دار correctly. The next two words that the highest percentage of first graders were able to read were also one syllable words with a CVC structure (باب ديك).

The Word	% of all students that read word correctly	% of those that read at least 1 word	The Word	% of all students that read word correctly	% of those that read at least 1 word
دار	62%	92%	كُتِبَ	23%	34%
باب	55%	81%	خديقة	17%	32%
ديك	41%	61%	الناس	21%	26%
خطل	28%	41%	صنعاء	16%	24%
المدرسة	26%	39%	كُتِبَ	10%	14%

Features that appear to present difficulty in word reading for first graders include: multiple syllables, the inclusion of the definite article alif-laam, and the inclusion of the letters and diacritical marks that these children had difficulty identifying in the letter knowledge component (ص ع and the short vowels). We included two words that contained the definite article alif-laam on the test component for 1st graders: الناس (an-naas= the people) and المدرسة (al-medresa= the school). In the word الناس the definite article is followed by a “sun letter,” while المدرسة is followed by a “moon letter.” When the definite article is followed by a moon letter, the word is pronounced exactly as it is spelled. However, Arabic pronunciation rules require that when the definite article is followed by a sun letter, the laam is not pronounced and instead the sun letter is pronounced for twice as long. This is one of the few instances in which the one-to-one sound symbol correspondence does not hold true in Arabic. Among 1st graders who were able to read at least one word correctly, 39% were able to read al-medresa (a 4 syllable word) correctly; whereas, only 26% were able to read an-naas (a 2 syllable word). This suggests that for early readers definite words which start with sun letters may be more difficult than those that begin with moon letters. Thus, more explicit attention to sun and moon letter pronunciation rules in early reading instruction may be needed.

The word that the fewest 1st graders were able to read was كُتِبَ (books). This is a 2 syllable word, containing two instances of the short vowel damma. Only 10% of all first graders read this word correctly. It is important to note that this word shares the same skeletal structure as another word on the 1st grade list كَتَبَ (he wrote), a two syllable word with two instances of the short vowel fatha. Thus, the two words can only be distinguished by their short vowels. Among first graders who were able to read at least one word correctly, 34% read كَتَبَ correctly while 14% read كُتِبَ correctly and only 6% read both words correctly. These results are not surprising given the large percentage of first graders who cannot identify the short vowels. Yet, they also point to the critical role that short vowels play in reading accuracy. These results suggest that explicit attention should be paid to words that share similar skeletal structures in early Arabic instruction.

### 2<sup>nd</sup> Grade Results by Word

The word that the highest percentage of 2nd graders were able to read was أحمد (Ahmed). Out of all 2nd graders, 60% read أحمد correctly. In addition to appearing with great frequency in the curriculum, Ahmed is also an extremely common name in Yemen and thus common to all children’s oral vocabularies. Among children who were able to read at least one word correctly, 93% read Ahmed correctly. The next word that the highest percentage of 2nd graders were able to read was also a two-syllable boy’s name, Sami



(47% of all 2nd graders and 74% of those who read at least one word correctly were able to read the word Sami accurately).

The words which presented difficulties for the greatest percentage of students were: 19% of all 2nd graders read this word correctly); 22% (الوضوء) and 25% (هذه). These words share several features. First, each of them contains at least two of the letters that 2nd graders had difficulty identifying (ه ه ه ء ض). A unique feature of the word هذه is the fact that it contains a fairly rare symbol, the dagger alif, which denotes the presence of an unwritten long vowel alif. This symbol is rarely written and the Yemeni textbooks are no exception to that rule. However, if you teach children how to read using decoding skills, it would be critical to include the dagger alif when the word is first introduced.

Secondly, although each of these words occur frequently in the 2nd grade curriculum, none of them, according to Yemeni educators, are common to the oral repertoire of an average 8 year old child. The word مائدة refers to a particular type of table in Formal Arabic, however it is not a word that Yemeni children would be familiar with. The word الوضوء means “ablution”. The verb form of this word is used frequently in Yemeni speech when referencing the ritual washing before conducting prayer. However, native speakers of Yemeni Arabic report that the noun form is rarely used colloquially. The final word means “this,” an essential vocabulary word in Arabic. However, in Yemeni colloquial, speakers use the variants دي and دا for “this” feminine and “this” masculine as opposed to the formal Arabic هذه and هذا.

Reading research identifies oral proficiency as one of the key factors which facilitates literacy acquisition (Bialystok, Luk & Kwan, 2005). However, children in the Arab world enter school without oral proficiency in Modern Standard Arabic (Maamouri, 1998; Saigh-Haddad, 2003). The fact that 2nd graders had the most trouble reading classical fusHa words and that the two words that the highest percentage of 2nd graders were able to read were common names provides support for the theory that the process of learning to read becomes easier if the words initially introduced are familiar ones. Further evidence for this is provided by the difference in the percentage of 2nd graders who were able to correctly read the words مبكراً and شكراً. Both of these words contain the tanween al-fatha, a diacritical marker which appears frequently on adverbs, but which may present a challenge to early readers. The former word شكراً means “thank you” and is essential to everyday speech in Yemen. The second word مبكراً means “early,” and it is not used in colloquial Yemeni Arabic. While 60% of 2nd graders were able to read the word شكراً, only 44% were able to read مبكراً. These findings provide support for the theory that early grade readers should make use of words familiar to children so as to capitalize on their oral proficiency to facilitate the development early decoding and comprehension skills.

### 3rd Grade Results by Word

The two words that the highest percentage of 3rd graders were able to read correctly were في (in) and أب (dad), both two-letter, one syllable words. Out of all 3rd graders, 72% read في correctly. The fact that approximately 28% of children were unable to read this word by 3rd grade is a strong indicator of the dire need for improved literacy instruction in and of itself. However, among children who were able to read at least one word correctly, 88% read في correctly. 68% of all 2nd graders and 83% of those who read at least one word correctly were able to read the word أب accurately. Interestingly, there was approximately a 20% gap in the percentage of students who read the word أب “dad” correctly and those who read the word الأم “the mom” correctly. The word الأم includes the definite article, however what most likely accounts for the between the two words is not just the alif –laam, but also the writing convention that requires the connection of the laam when it is followed by an alif (لا). This suggests the need for increased focus on the exceptions to standard writing conventions for particular letters. The third most accurately read word was أكرم (Akram) which like the 2nd grade word Ahmed, is a very common boys’ name, with two syllables and whose pattern (internal vowel, consonant structure) is very familiar as it is shared by most superlative adjectives. 65% of all 3rd graders and 79% of those who read at least one word correctly were able to read the word أكرم accurately.



The word that 3rd graders had the most difficulty reading was **قُلْتُ** (I said). Only 30% of all 3rd graders and 37% of those able to read at least one word correctly read the word. The other words which less than half of 3rd graders read accurately were **(الطريقة الزبيري تتضايق وإنسان)**. Two of these words include the definite article followed by sun letters. Two contain emphatic consonants and one shares a very similar skeletal structure to another word on the 3rd grade list **(إنسان أسنان)**. Interestingly, among 3rd graders who read at least one word correctly, 72% of them read the word **أسنان** (teeth) correctly, while only 58% read the word **إنسان** (people) correctly, despite the fact that the two words contain the exact same letters. The similarity in the shapes of the two words may have led many students to confuse them or read the second word inaccurately. The same issue may constitute part of the reason that **قُلْتُ** proved to be the most difficult word for 3rd graders. Several assessors reported that instead of reading the word accurately as “I said”, children read it as **قَالَتْ** “she said,” a word that shares three letters with **قُلْتُ**. Assessors explained that many children looked at the word and said **قَالَتْ** because they had memorized this word from their textbooks. Given the “whole word approach” which is adopted by the Yemeni curriculum, this is precisely what children are encouraged to do- to memorize whole words based on their shape. However, this approach leads to problems when it comes to the myriad words in Arabic which are extremely similar in shape.

## Reading Fluency and Reading Accuracy

The fourth and fifth components of the assessment require children to read a passage aloud while the assessor keeps track of the words read correctly. The total number of words read correctly in one minute is used as the metric for “reading fluency,” whereas the percentage of total words read correctly without time constraint is the metric for “reading accuracy.” On average 1st graders read 2 words in the first minute, 2nd graders read 6 and 3rd graders read 16. However, 151 (of 219) 1st graders, 115 (of 220) 2nd graders and 63 (of 220) 3rd graders were unable to read a single word in one minute. When fluency is calculated for only those students who read at least one word in a minute, the average number of words read correctly in the first minute are 6 words for first graders, 13 words for 2nd graders, and 22 for 3rd graders.

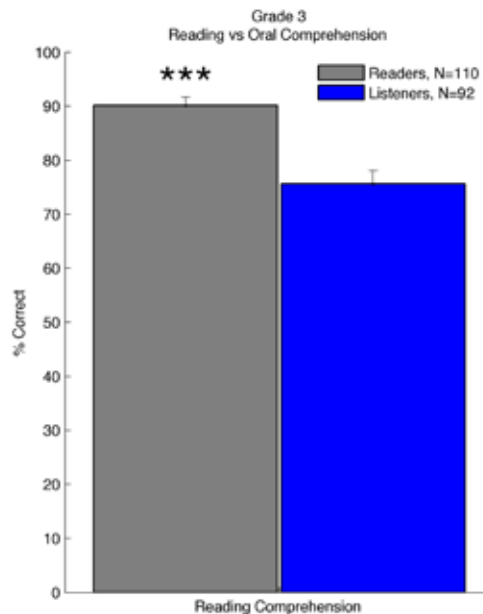
In terms of reading accuracy, similar numbers of students were unable to read any words in the passage correctly, even without time constrain: 145 students in 1st grade (66%), 114 in 2nd grade (52%) and 62 in 3rd (28%). If we exclude those students who are unable to read any words, the remaining 1st graders read on average 11 words correctly (50% of the total words). On average, the remaining 2nd graders read 30 words correctly (52% of total words) and the remaining 3rd graders read 74 words correctly (72% of total words).

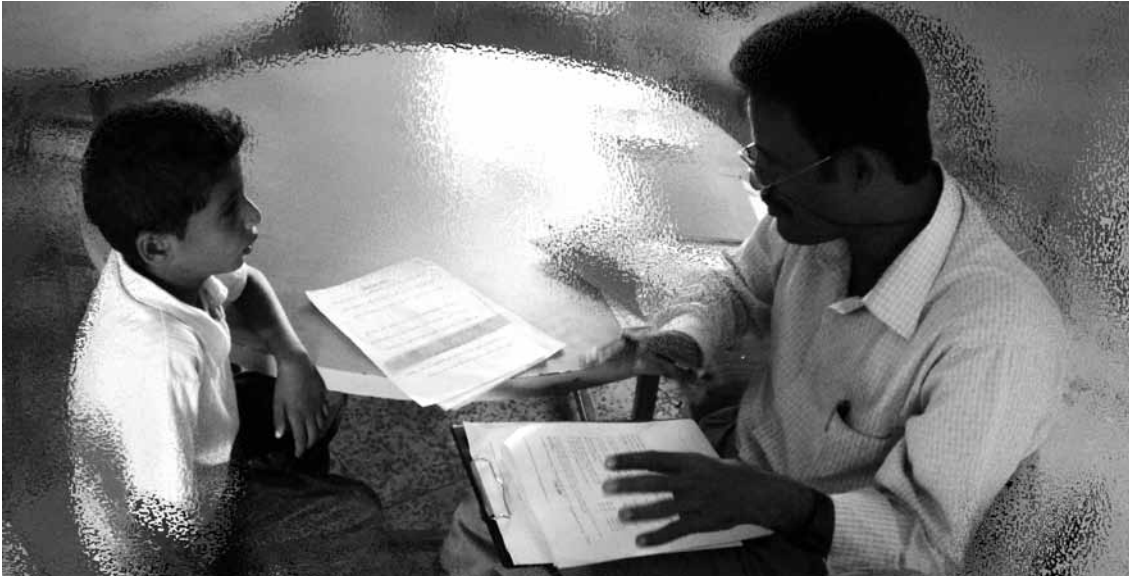


## Comprehension Questions: Reading Comprehension and Oral Comprehension

After reading the passage, students were asked a series of comprehension questions. For students who read fewer than 8 words in the first minute, the assessor read the passage aloud to them before asking the comprehension questions. For this reasons, the comprehension questions results are divided into reading comprehension (for children who read the passage on their own) and oral comprehension (for those who listened as the assessor read the passage).

The interesting result for this section is that for all 3 grades, the average scores reading comprehension are fairly high (from 70 to 90 percent correct), despite the fact that the overall reading accuracy for the passages was relatively low. Somewhat perplexing is the fact that overall reading comprehension scores are higher than oral comprehension, although the opposite would be expected since those who are not reading on their own do not have to exert the cognitive effort to read and thus could in theory focus more intently on listening and comprehending the story. The first four questions for each grade were literal questions (How old is Suad? What is her sister's name?) and children were informed that they could return to the passage to search for the answers. One potential explanation is that children who read at least part of the story may have known at least where to look for the answers. Each grade had a inferential question (How do you think Suad felt?) and 2nd and 3rd grade had a question asking them to summarize the story as well as an evaluative question (What would you have done if you were in Fatima's position?). Inconsistencies in the way in which assessors posed these questions may account for what seem to be potentially inflated scores. For instance, a few assessors were observed giving students options for how Suad may have felt as well as recounting details of the story when children hesitated in answering. Although assessors had been instructed not to provide this type of assistance during trainings; it proved difficult to ensure that all assessors followed these guidelines during implementation. For 2nd and 3rd grade the lowest percentage of students were awarded a point for summarizing the story in their own words.

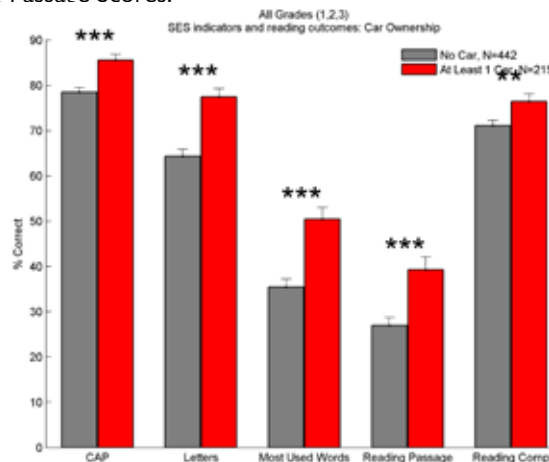




## Relationships between Student Background and Reading Skills

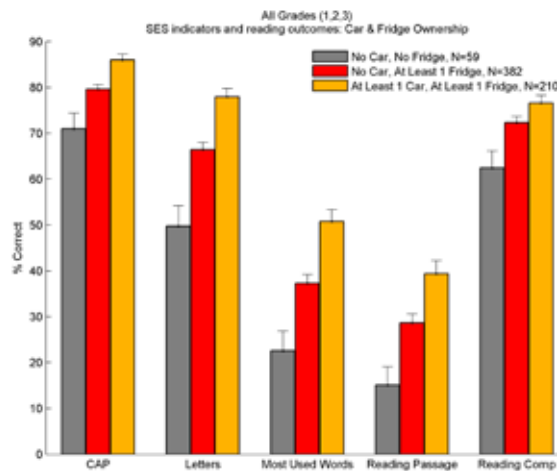
The assessment also contains a questionnaire related to student background information. Many of these questions are aimed at ascertaining the family’s socioeconomic status. We designed the background questionnaire with several Yemeni staff members from the targeted regions who are knowledgeable of local socio-economic indicators. Some of the indicators we selected were: number of rooms in household, ratio of people per room, father’s profession, and household assets.

Analysis of the relationship between these socio-economic indicators and children’s reading outcomes revealed that on average more economically well-off children performed better on all literacy measures than did their counterparts from poorer families. Children from families with more rooms and fewer people per room outperformed their peers on every indicator. In terms of family assets, car ownership (see graph), as well as computer and play station ownership were all correlated with higher reading scores. These results were statistically significant for every literacy indicator. There was on average more than a 15% point gap between children whose families owned a car and those who did not for the Letters, Most Used Words, and Reading Passage Scores.

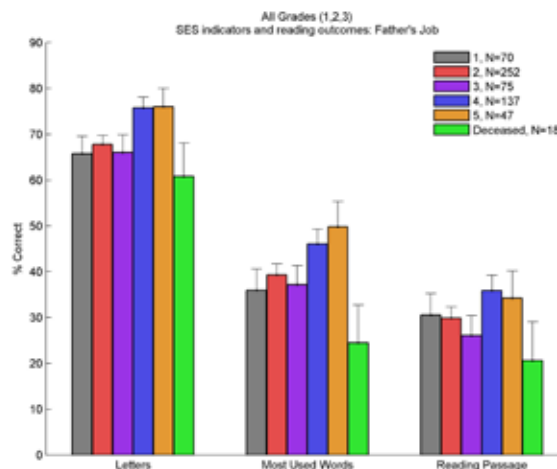




In order to examine the difference between children from 3 tiers of SES levels, we used the following indicators: families with no refrigerator and no car (low SES), those with a refrigerator but no car (average SES level), and those with both a refrigerator and a car (high SES). This analysis revealed that indeed the gap widens when we further differentiate children by SES level. Whereas the previous gap between those who own cars and those who don't averaged around 15% points, this gap doubles to 30% (for both letter knowledge and word reading ability) when we compare the least advantaged children (no car, no refrigerator) to the most advantaged (both car and refrigerator). These findings suggest the pressing need to identify and provide additional support to children from the most economically disadvantaged families.



The analysis of father's profession and literacy outcomes showed a trend in which higher categories of father's profession were related to higher literacy scores. While father's job categories were set to reflect income levels, they also relate to the father's education. (level 1: unemployed, level 2: unskilled labor, level 3: tradesman, level 4: professional: doctor, nurse, teacher, level 5: manger company owner, lawyer). These levels also relate to the frequency with which the father uses reading skills on a regular basis for his work. So the trend of higher scores for children whose fathers have higher level professions may reflect the impact of both SES and the educational environment in the house.

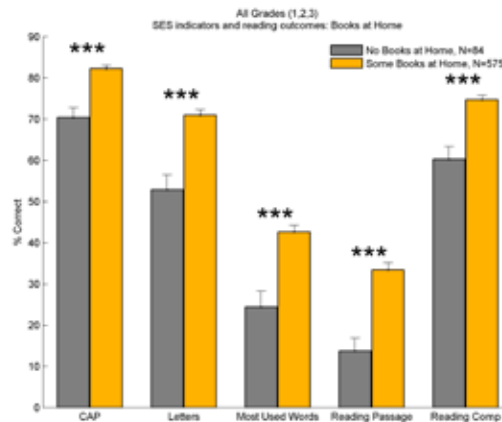


## Relationships between Literacy Preparation and Reading Skills

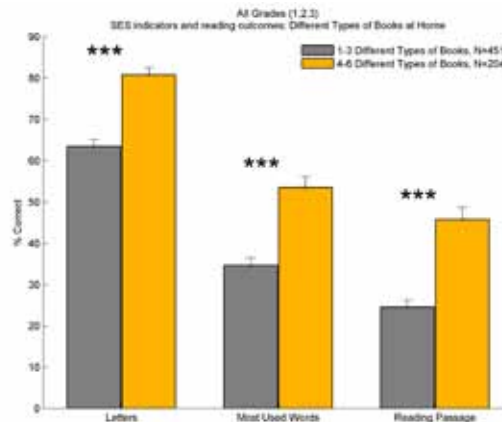
The second part of the background questionnaire asks children about the literacy habits and resources available in their homes. We asked children whether the following reading materials were present in their homes: textbooks, religious books, children’s stories, literature or poetry, magazines and newspapers. Then we inquired about literacy habits: whether household members were seen reading in the last week and whether or not any of them read to the child.

### Literacy Resources

Out of all children in our sample, 87% report having textbooks at home, about 50% report having religious books (not including the Quran), while less than 30% reported having children’s books. Only 13% of children in our sample reported that their families did not own any books. A comparison of the scores of those children whose families own at least some books vs those that own none, reveals that owning books is correlated with higher scores for every literacy indicator. These results are statistically significant.



The second graph to the right reveals that among those who own books, those that own 4 or more types of books tend to outperform those that own fewer than 3 types. The difference in scores among the two groups of children is averages around 15% points for each of the following components: Letter Knowledge, Most Used Words and Reading Passage components of the assessment. This trend is also statistically significant. Thus the presence and variety of books in the home are important for supporting children’s reading skills development.

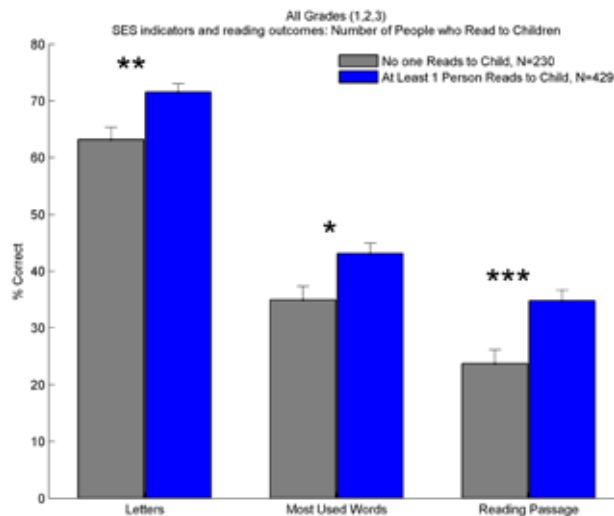




## Household Literacy Habits

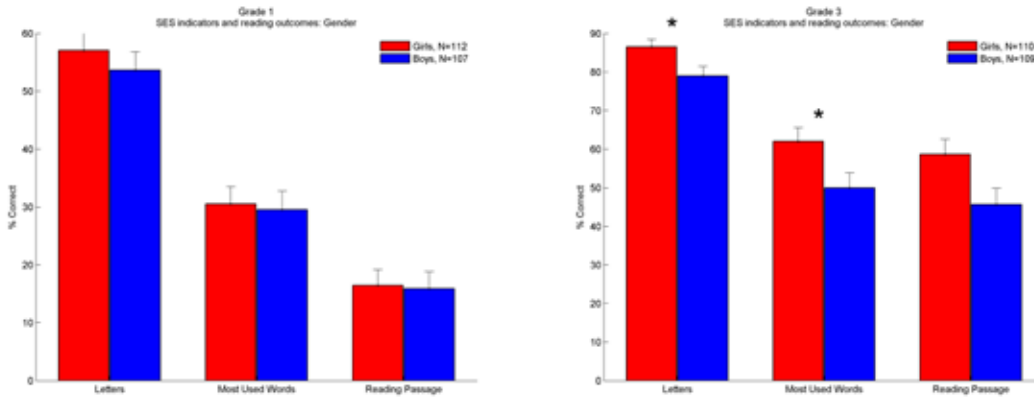
Out of all children in our study, 76% reported seeing a family member read in the past week and 65% reported that someone read to them. Analysis reveals that children who see a household member read tend to outperform those who do not. The gap between the two groups is statistically significant in terms of letter knowledge and reading accuracy. The same is true of children who are read to vs those who are not. Children who are read to outperform those who are not and the difference between the two groups of about 10 percentage points is statistically significant for all three indicators.

We should caution here that relationships between SES, literacy background and reading outcomes as well as that have been outlined above are not causal relationships. Thus, providing households with more books will not necessarily lead to improvement in children's reading skills. This hypothesis remains to be tested through SC's programs.



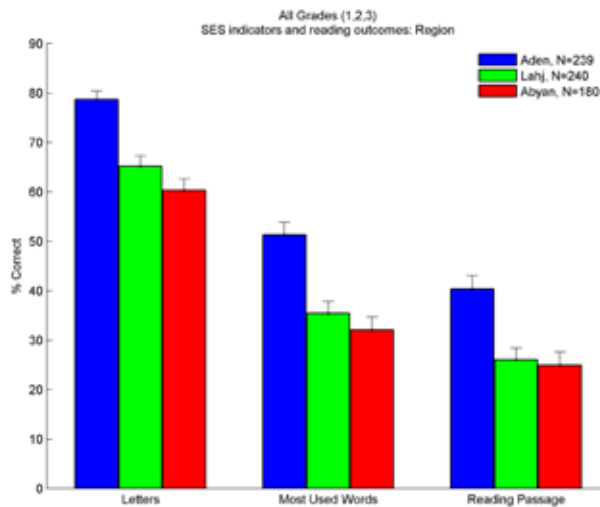
## GENDER GAP

We also compared the reading outcomes for boys vs girls, and found that on average girls in our sample tended to outperform boys on each of the assessment components. Interestingly, the bias in favor of girls actually increases across the three grades. In first grade the differences between genders is not significant; however, by 3rd grade girls outperform boys by about 5% in letter knowledge and about 10% in word reading ability. In 3rd grade these differences are statistically significant. This finding suggests that boys may need additional support in order to prevent these gaps from continuing to widen as they progress to higher grades.



## REGIONAL GAP

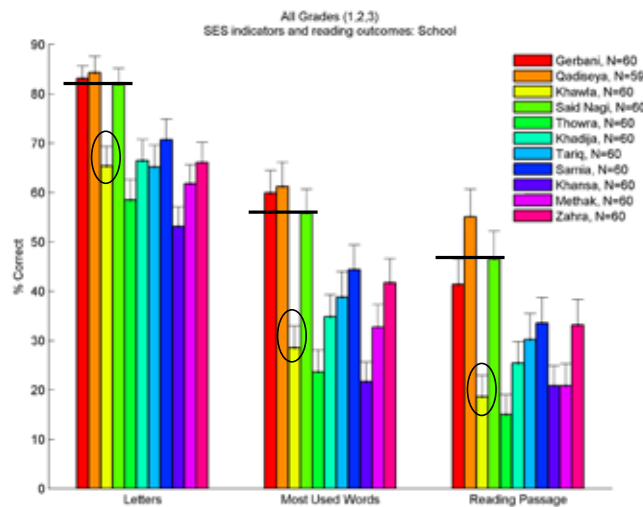
On average, children from Aden achieved higher scores than those from Lahj and Abyan on all indicators. However, children from Aden also demonstrated higher socio-economic backgrounds and more literacy support at home than children in the other two regions. Living in the most urban of these sites, they are also more often surrounded by print on signs, posters, vehicles, etc. than their peers in Lahj or Abyan,





## AVERAGE SCORES BY SCHOOL

Two schools were included in the assessment which do not currently receive Save the Children support. Both schools are located in Aden. The first, Said Nagi is an urban public boys school, and the second, Khawla is a semi-urban public school with a large Somali refugee population. Initially, we intended to compare outcomes for children from Khawla who were native Somali speakers. However, very few children at Khawla reported speaking Somali at home, thus the numbers were too low to conduct a viable comparison. The graph below illustrates the fact that average scores for children at Said Nagi are on par with the other public schools in Aden. However, the average scores for children at Khawla are dramatically lower, yet they are still comparable to the scores of several schools in Abyan and Lahj. It is likely that children from Khawla have socio-economic and literacy backgrounds which are more similar to those of children in Abyan and Lahj than they are to the typical Aden schools.



## RECOMMENDATIONS

### Curriculum and Teaching Approach

The current Yemeni first grade text books do not begin by introducing the letters of the alphabet in their various shapes. Nor is any attempt made to introduce the sounds that each letter represents. Additionally, the short vowels are not included until the end of the book and even then, not systematically. Instead, the book begins with entire words and the majority of activities ask the child to circle the word that is different: مدرسة معلم مدرسة or to connect the words that match each other from two columns. The assessors and Save the Children staff explained that this is the “whole word approach” or as it is called in Arabic “from the whole to the part.” They explained that children are taught to recognize words based on their shapes. However, just because a child can pick out the word that doesn’t match from a series, this doesn’t mean that he or she can actually read the word aloud. Although the “whole word approach” has been employed in a variety of languages, it is particularly ill-suited for Arabic. First, Arabic has a very large number of words whose skeletal structure is identical. For example, when unvocalized, the word علم can represent one of six words (science, flag, he learned, he taught, it was learned, it was taught). Arabic is also full of words that can only be distinguished by the additional or removal of a dot or dash above or below a letter. Thus if children focus on the shape of the word, they will be more likely to confuse those words that have identical skeletal structures or that can only be distinguished by a dot or dash.

جار	حار
زمان	رمان
قول	فول
أغلى	أعلى
أفلام	أفلام

The results of our assessment clearly demonstrate the difficulty that children faced when confronted with similarly-shaped words. Recall that the most difficult word for 1st graders was كُتِبَ, which shares the same skeletal structure as كَتَبَ. Only 10% of all first graders read correctly and only 6% read both words correctly. The most difficult word for 3rd graders was فُلِكَ which many 3rd graders accidentally mistook for فُلَيْكُ a word that is extremely similar in shape. If, on the other hand, children are consistently given diacritical marks and then taught to read “from the part to the whole,” sounding out each individual letter, then the chances for confusing these words would be greatly reduced. The first short vowel in every one of these similar word pairs distinguishes the two. Thus, if the child sounds out the word, the difference between them will be apparent.

Further support for teaching decoding skills to children in Yemen lies in the fact that Arabic is a highly phonetic language. Reading research in English overwhelmingly supports the importance of incorporating phonics instruction as a critical component in early reading programs (NIH, 2000). However, English does not exhibit the predictable sound-symbol correspondence that Arabic does. There are far more exceptions to pronunciation rules in English. Nonetheless, decoding skills are deemed essential for becoming a proficient reader in English. This suggests that decoding skills may prove even more effective in a language as phonetic as Arabic. The rare exceptions to this one to one sound-symbol correspondence (the sun letters, and letters that are pronounced differently in Colloquial vs Formal Arabic) would simply warrant additional attention during phonics instruction in Arabic.



A phonics-based approach would require that the 1st grade curriculum begin with an introduction to the Arabic alphabet, presenting the associated sound for each letter as well as its various shapes in initial, medial, final and independent positions. Considerable time would need to be allocated to teaching the connecting rules for each letter and how to blend sounds. The assessment results showed the strong correlation between letter knowledge and word reading ability, thus the importance of teaching these skills should not be underestimated. Children in 2nd and 3rd grade who have not mastered the sounds and shapes of the letters will likely require remedial support. One simple way to identify these students, particularly in very large classrooms, would be to have teachers administer the letter component of our assessment to all of their students. This component takes only a couple of minutes per child. Identifying the students who are currently struggling with this fundamental skill is critical. After they have been identified, teachers can then take the appropriate steps to support these children either within the classroom or through remedial help.

The assessment results also revealed that children in Yemen faced difficulty reading words that are not common to their oral vocabularies. In order to become literate in formal Arabic, Yemeni children must not only learn the alphabetic principal and decoding skills in Arabic, but they must also begin to acquire a new vocabulary and learn an entirely new grammatical system. However, a carefully-designed early literacy program can help convert children's mother tongue, Yemeni colloquial Arabic into a bridge, rather than an obstacle to learning the formal language. First, the new reading program should use children's oral proficiency in Yemeni colloquial to help them learn decoding skills. By selecting vocabulary for the beginning of first grade which is common to both Yemeni colloquial and formal Arabic, educators will help child understand the connection between print and speech and facilitate their comprehension of what they read. Further, this approach demonstrates to children that their home language can be an asset to their learning. New vocabulary words from formal Arabic should be carefully selected so that the most relevant and frequently-occurring words are introduced first. Also teachers should be trained to explain the linguistic differences between colloquial and formal Arabic to their students (in terms of vocabulary and grammar). In the 2nd grade Yemeni curriculum, for example, the dual verb tense, which is exclusive to formal Arabic, is presented without any explanation of when, why, and how this tense should be used. Teachers however can draw students' attention to these differences, ask the children how they would express the same sentence in colloquial Yemeni Arabic, and then explain the function that this tense serves in formal Arabic. Drawing explicit attention to these differences has the potential to make learning formal Arabic a less arduous process for Yemeni children.

When new words from formal Arabic are introduced, they should be presented in context. In the current Yemeni 1st grade curriculum, words are presented without short vowels and independently (not within sentences). There are no sentences until the end of the first 1st grade book. Yet in order to understand the meanings of new words and to learn them well enough to reproduce the words in their own speech and writing, children need to see the words used in rich and multiple contexts. If a new vocabulary word is presented only once and without any context, children are unlikely to understand or remember the word. Another reason to present words in context is so that children learn strategies for determining the meaning of new words from an early age. When Arabic readers encounter words that such as علم which could represent several different meanings, they must either rely on short vowels or context and syntax in order to ascertain the correct meaning of the word. Thus presenting new words in context in early grade texts will also help children develop these comprehension strategies.



## RESOURCE ROOMS

The schools which are supported by Save the Children through the “Inclusive Education” program all have resource rooms that are designed to make schools more inclusive and friendly to all children. These rooms have learning materials, including a collection children’s books from Scholastic’s My Arabic Library. Currently, the rooms are also used for remedial support for children that teachers identify as encountering serious difficulties in reading and math skills. One way in which these rooms could be put to use to improve literacy skills for more children is to establish story hours every week that would be open to all children. Save the Children’s Literacy Boost intervention program has a curriculum of fun activities for such weekly reading sessions, or “reading camps”. These camps offer activities to support the development of all five critical reading skills, with particular emphasis on phonemic awareness.

In Save the Children programs in other countries, these types of activities have proven especially important for children who do not have a household member who reads to them. Also Save the Children staff could hold read aloud trainings for resource room teachers. There are many vocabulary, oral language and comprehension-building activities that teachers can incorporate into story hours to make them even more beneficial to children. SC staff could hold workshops to design mini-lesson plans for particular books (all resource rooms have the same collection which would facilitate sharing lessons across schools). In addition, Save the Children staff and resource room teachers can brainstorm together about how to advertise the story hours and make them as fun as possible for the children. In addition to improving literacy skills, the other goal of establishing story hours would be to instill a love of reading in children.

Save the Children could also explore the possibility of converting the resource room book collections into libraries from which children could borrow books. The opportunity to bring books home could have an important impact on children who live in households without reading resources. As a long term goal, it would be ideal to expand the collection of books available in resource rooms, and in particular to add books by Arab authors. Although the Scholastic collection is a great start, all of the books are translated from English. At times the vocabulary and content of stories may not be particularly relevant to the lives of children in Yemen. While there is certainly value in reading stories about people from other cultures, it would also be great to have high quality books with characters who look and speak more like Yemeni children. There are several publishing houses that produce high quality children’s books in Arabic, including Kalimaat from the UAE and Al-Salwa Publishing from Jordan. In addition, the Literacy Boost Toolkit offers creative, low-cost alternatives for expanding reading resources, which they call “Book Bank strategies.” These strategies include calling for local teachers, staff and parents to contribute their own stories.



## PARENTS COUNCILS

The “Inclusive Education” schools also have parent’s councils which could provide an ideal forum for increasing awareness on literacy issues. SC staff could begin by presenting some of the key results from the assessment to parents’ councils, with a particular emphasis on positive correlation between the home literacy environment and children’s reading scores. In addition, SC staff can give parents examples of simple games and activities they can use with children at home which will help bolster their literacy skills. Special care should be devoted to presenting activities that parents with low literacy skills can employ also. Parents who cannot read aloud to their children, should be informed that recounting stories orally and speaking to children about daily activities such as cooking and shopping, can also help children learn new vocabulary words, story structures and syntax, and build comprehension skills.

Given the high percentage of TV ownership among Yemeni families (over 90% of our sample population), parents of widely varying economic and educational backgrounds can be encouraged to watch *Iftah ya Simsim* (Sesame Street ) with their young children. Sesame Workshop began producing shows in the Arab region in the 1970’s and at the time, they enlisted Arab educators to decide which variety of Arabic the show should employ. They debated using Egyptian colloquial or dubbing the show into four different colloquial varieties. However, the team eventually settled on using a simplified version of formal Arabic, largely because they felt this would be the best way to prepare students for school (Abu-Absi, 1990). There are currently very successful local production teams in Egypt, Jordan and Palestine. In June of 2010, the Arab Bureau of Education for the Gulf States announced an agreement with Sesame Workshop to relaunch a version of the program for the Gulf States, including Yemen. The show has a long history of creating innovative and fun ways of teaching basic alphabetic and phonemic skills in Arabic. Yet, many parents may not be aware of the potential benefits of such programming. Thus awareness-raising would be an essential first step.



## REFERENCES

- Abu-Absi, Samir (1990). A Characterization of the Language of Iftah ya Simsim: Sociolinguistic and Educational Implications for Arabic. *Language Problems and Language Planning*, 14 (1), 3346-.
- Abu-Rabia, Selim (2000). Effects of Exposure to Literary Arabic on Reading Comprehension in a Diglossic Situation. *Reading and Writing: An Interdisciplinary Journal*, 13 (1157-147), (2-. Retrieved from [www.springerlink.com/index/N3165655N2N11085.pdf](http://www.springerlink.com/index/N3165655N2N11085.pdf).
- Aggarwala, N.K. (2004). Evaluation Report: Quality assessment of primary and middle education in mathematics and science. Retrieved from [http://www.iea.nl/fileadmin/user\\_upload/docs/UNDP\\_report.pdf](http://www.iea.nl/fileadmin/user_upload/docs/UNDP_report.pdf)
- Bialystok, E., Luk, G., Kwan, E. (2005). Bilingualism, Biliteracy, and Learning to Read: Interactions Among Languages and Writing. *Systems. Scientific Studies of Reading*, 9(1), 43 61 2005.
- Dakwar, Reem (2005). Childrens' Attitudes Towards the Diglossic Situation in Arabic and Its Impact on Learning. *Society for International Education: Teachers College, Columbia University*, (7586-) Retrieved from [www.tc.columbia.edu/students/sie/journal/Volume\\_3/Dakwar.pdf](http://www.tc.columbia.edu/students/sie/journal/Volume_3/Dakwar.pdf).
- Eviatar Z, Ibrahim R. (2001). Bilingual is as bilingual does: Metalinguistic abilities of Arabic-speaking children. *Applied Psycholinguist.*; 21(4):451–471.
- Ferguson, C. A. (1959). Diglossia. *Word*, 15, 325340-.
- Ibrahim, Raphiq. (2009). The cognitive basis of diglossia in Arabic: Evidence from a repetition priming study within and between languages. *Psychology Research and Behavior Management*.
- Maamouri, Mohammed (1998). Arabic Diglossia and its Impact on the Quality of Education. *International Literacy Institute 1998*. Retrieved from [http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content\\_storage\\_010000019/b/8044/34/19/.pdf](http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_010000019/b/8044/34/19/.pdf).
- National Institute of Child Health and Human Development. (2000). Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction (NIH Publication No. 004769-). Washington, DC: U.S. Government Printing Office.
- Progress in International Reading Study (2006). TIMSS & PIRLS International Study Center. Lynn School of Education, Boston College. International Association for the Evaluation of Educational Achievement. Retrieved from <http://nces.ed.gov/Surveys/PIRLS/>
- National Center for Education Statistics Trends in International Mathematics and Science Study. (2003). Appendix F: Syrian Arab Republic and Yemen Science Achievement. Retrieved from [http://timss.bc.edu/PDF/t03\\_download/T03\\_S\\_AppF.pdf](http://timss.bc.edu/PDF/t03_download/T03_S_AppF.pdf)
- National Center for Education Statistics Trends in International Mathematics and Science Study. (2007). Retrieved from <http://nces.ed.gov/timss/results07.asp>
- Saiegh-Haddad, E. (2003) Linguistic distance and initial reading acquisition: The case of Arabic diglossia. *Applied Psycholinguistics*, 24(3), 431–4