

**Understanding the student with interrupted formal education (SIFE):**

**A study of SIFE skills, needs and achievement**

**Elaine C. Klein and Gita Martohardjono**

**Research Institute for the Study of Language in Urban Society  
(RISLUS)**

**Graduate Center of the City of New York**

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## **1. Introduction**

### **1.1 Rationale for the SIFE Project, Phase II**

Students with Interrupted Formal Education (SIFE) are a growing population in New York City schools. Unfortunately, however, critical and necessary research for this unique and challenging population of English language learners (ELLs) has only just begun. To date, very few researchers or practitioners have conducted in-depth investigations of SIFE to help identify and characterize their skills and needs. Such studies are needed to help develop research-based instructional programs for these students.

According to the 2006-2007 Bilingual Education Student Information Survey (BESIS) from the New York City Department of Education Office of English Language Learners, there are about fifteen thousand SIFE in NYC schools, which make up 11% of ELLs. Most SIFE enter the NYC school system between the eighth and tenth grades and 59% speak Spanish as their native language. The primary criterion for SIFE identification is at least a two year gap in prior schooling; in addition, it is thought that most SIFE enter NYC schools with little or no native language literacy, as well as low levels of English language proficiency and academic content knowledge.

In our pilot study, Phase I of the SIFE Project, we confirmed these assumptions among a small group of newly arrived ninth grade SIFE (N=12), all of whom spoke Spanish as their native language. We found that among the twelve SIFE, average reading comprehension in Spanish was at the third grade level. The content knowledge scores of the twelve SIFE were also very low; they scored between the third and fourth grade levels on their math skills and between the first and second grade levels on their science and social science skills, all in the native

language. Thus, we concluded that unlike regular ELLs, in addition to mastery of English, SIFE need foundational skills in their native language in order to raise their scores to the appropriate grade level.

In Phase II of the SIFE Project, our goal was to support the findings from Phase I with a larger number of SIFE from a variety of NYC high schools using a SIFE diagnostic instrument that we had developed and tested during the course of the study. With this diagnostic, we planned to track the progress of SIFE over eighteen months, investigating the academic and social characteristics of SIFE, in addition to how well they acquired language and literacy knowledge after being in NYC schools for one year.

## **1.2 Objectives of Phase II**

- i. Further develop and finalize a set of diagnostics to assess the skills and competencies of SIFE, both in the native language (Spanish) and English, for future use among SIFE entering NYC high schools;
- ii. Use the diagnostics as pre-tests to characterize the backgrounds and academic skills of incoming SIFE;
- iii. Track SIFE as they progress through high school by administering diagnostics at selected intervals;
- iv. Evaluate the support provided by different types of SIFE programs and instructional approaches by comparing the educational outcomes of SIFE under different instructional conditions using the diagnostics as post-tests after eighteen months in school;
- v. Compare SIFE to their peers:

High school native English speakers and ELLs. These high school comparison groups will allow us to 1) see how SIFE differ in native language skills from native English speakers in NYC high schools, and to 2) determine whether or not, and to what extent, SIFE and ELLs differ in their acquisition of English after being in NYC high schools for one year.

vi. Make recommendations for programmatic and instructional purposes.

### 1.3 Overview of the Report

In Section Two, we describe the methodology used in this research, including the participating schools, the participants, the procedures, and the materials we developed and selected. In Section Three, we describe the results and findings of our study. Section Four provides some discussion and concludes the report with our recommendations.

## 2. Methodology

### 2.1 Participating Schools

Five New York City high schools were chosen to participate in this study by the New York City Department of Education. The schools are geographically distributed across the city, in four of the five boroughs: one school is located in Manhattan, one in Brooklyn, one in Queens, and two in the Bronx. Table 1 describes the features of the five schools.

Table 1

	School 1	School 2	School 3	School 4	School 5
Location	Bronx	Brooklyn	Manhattan	Bronx	Queens
Sheltered/Non-Sheltered SIFE	Non-Sheltered	Non-Sheltered	Sheltered	Non-sheltered	Sheltered
Size of school	445 students	3500 students	2600 students	300 students	3181 students

% of ELLs	100%	25%	27%	100%	23%
% of SIFE	NA	1%	1%	28.8%	1%
Program type	English-only immersion	Transitional bilingual	Transitional bilingual	English-only immersion	Transitional bilingual
Spanish instruction/support	Formally none; some L1 scaffolding for content	Spanish: NLA, math	Spanish: NLA, math	Spanish: NLA	Spanish: NLA, math
English instruction/support	Content courses in English	Sheltered ESL classes	ESL, reading, math	ESL content classes & 2 hrs ESL per day	2 ESL classes per day, 1 science class
Graduation rates for ELLs	27%	21%	29%	71%	39%

## 2.2 Participants

### 2.2.1 Target Group: SIFE

As the majority of SIFE in New York City speak Spanish as their native language, we selected for participation one hundred and three Spanish-speaking ELLs identified as SIFE by their schools and/or by the New York City Department of Education. All the students were in the ninth or tenth grades and each attended one of five New York City high schools described above.

The identification of SIFE is neither systematic nor standardized across schools. In selecting our SIFE participants, we relied on the schools' placement even though the schools differed in their procedures for identifying students as SIFE. All of the schools participating in our study used the DOE's pre-screening SIFE identification, and four of the schools used some additional tools in order to identify SIFE. For example, one school collected a writing sample in the student's native language; two of the schools gave Spanish proficiency tests to native Spanish-speakers; and another interviewed the student and the student's parent or guardian in order to gather more information about the student's educational background.

### **2.2.2 High School Comparison Groups**

In order to compare SIFE with their peers, we included two participant groups from some of the same high schools as the SIFE in our study, a native English speaker group and an English language learner group.

#### ***Native English Speaker Group (NES)***

The first comparison group consists of thirty-eight ninth graders who speak English as their native language. The students attended three of the same high schools as the SIFE in our study. This allowed us to control for demographics like socio-economic background, as students at a given high school are generally drawn from the same neighborhood.

#### ***English Language Learner Group (ELL)***

The second group consists of twenty-two ELLs from one of the high schools attended by the SIFE in our study. The students had entered the New York City school system at the same time as the SIFE group. Thus, the ELL group and the SIFE group have been in the US for roughly the same amount of time, allowing for a controlled comparison between SIFE and ELLs in their development of English language and literacy. This comparison is very important in determining what makes SIFE a special subgroup of ELLs. By comparing a group of SIFE with a group of ELLs who have had the same amount of time to learn English at the same schools, we can clarify that the groups are different and better characterize the gap between SIFE and ELLs.

### **2.3 Materials and Procedures**

The study was conducted over a period of eighteen months, and data were collected in two stages, which were divided according to school year. During the students' first year (Year One) in the NYC school system, we administered assessments only to the SIFE group in their native



language (Spanish). During the students' second year (Year Two) in the NYC school system, we administered assessments to SIFE in both their native language and English. The NES group and the ELL group were given assessments in English during Year Two.

All assessments were administered by graduate students trained in the procedures for giving the tests. Spanish assessments were administered by bilingual research assistants.

### **2.3.1 Intake Questionnaire**

Our research team developed an oral intake questionnaire in order to obtain the following information about the students: personal and language information, family and home background, language and literacy practices outside of school, and education history. The questionnaire was given as an oral interview in Spanish between one interviewer and one student, with answers audio-taped and hand-written by the interviewer<sup>1</sup>.

### **2.3.2 RISLUS Syntax Test (Spanish and English)**

This assessment was developed by RISLUS and is designed to evaluate the acquisition of sentence structure independently from vocabulary. In the present study, we used the Spanish syntax test as a measure of typical native language development relevant to non-academic functions of language<sup>2</sup>. Previous studies of children who speak one language (monolingual) have established that the structures targeted in this test are benchmarks in native language development, and are mastered by age ten (Sheldon 1974; Hsu, Cairns, and Fiengo 1985).

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<sup>1</sup> The audio-recorded interviews were transcribed, a process that included checking and supplementing the responses written by the interviewer. Responses were coded so that the results could be quantified, and coded responses were then entered into a statistical analysis computer application (SPSS) for data analysis.

<sup>2</sup> This is in contrast to the language skills tested in the Academic Language and Literacy Diagnostic (ALLD), to be discussed, which are specifically relevant to the development of academic language.

Besides being indicators of typical language development, these structures also occur frequently in scholastic texts. In light of these facts, we felt that it was important to assess our participants' comprehension of such structures.

The test combines listening comprehension and picture selection in a task that can be administered individually or in groups. The student hears a sentence twice, and looks at three pictures. The student is then asked to choose the picture that corresponds to the sentence. See Appendix TKTK for samples of the sentence structures tested. Scores were calculated for each student as percent correct.

### **2.3.3 Oral Language Proficiency Test (Versant) (Spanish and English)**

The Versant (Pearson) is a test of oral language proficiency measuring sentence mastery, vocabulary, fluency, and pronunciation. Each test item requires the student to understand a spoken utterance and respond appropriately. The Versant is an automated test given over the phone. Since the Versant is an automated test using speech recognition, all of the scores are automatically calculated by a program accessed through the Ordinate website.

### **2.3.4 Working Memory Task**

We administered this task because low literacy skills could (in principle) be explained by a poor working memory. This test allowed us to control for such general problems, and attribute any low literacy findings to factors unrelated to general cognitive development.

In order to determine the working memory of the students, we administered two tasks from the Bateria III (Riverside). Both tasks were given in Spanish on an individual basis. One task involved word recall and the other involved reverse number recall. We administered these tasks

to determine if any of the students have a poor working memory. The Bateria III scoring software produced a score report for each student.

### **2.3.5 Academic Language and Literacy Diagnostic (ALLD) (Spanish and English)**

The ALLD was developed over a period of two years through pilot testing, item analyses, and collaboration with the NYC DOE and Pearson publishers. The Spanish ALLD used for our research has been adapted from a US standardized Spanish language test published by Pearson: the Aprenda Achievement Test Series, Third Edition. The English ALLD used for our research is taken from its English equivalent, the Stanford Achievement Test Series, Tenth Edition. The ALLD is a cumulative assessment, and contains items from a range of grade levels; it is a multiple choice test and includes literacy and content skills, which are discussed below. (For more detailed information on the development of the ALLD see Appendices. See Appendix X for the criteria used for the development of the Spanish and English ALLD, and the adaptations leading to the final versions of the diagnostics. The version of the ALLD in Spanish and English finalized for distribution in the NYC schools is slightly different from the ALLD used for research purposes. See Appendix Y for an outline of this diagnostic.)

#### **2.3.5.1 ALLD Sections**

##### *i. Pre-literacy (Basic Literacy)*

The basic literacy section of the assessment consists of items testing phonological and orthographic awareness, word reading, and simple sentence comprehension.

*ii. Reading Vocabulary*

The reading vocabulary section of the ALLD assesses knowledge of synonyms<sup>3</sup>, multiple meaning words<sup>4</sup>, and context clues<sup>5</sup>.

*iii. Reading Comprehension*

The reading comprehension section of the ALLD requires the students to read a passage, and then answer multiple-choice questions about the passage. The passages are either informational or functional. The questions assess basic understanding and some test higher level skills such as critical analysis, strategies, and interpretation.

*iv. Language*

The language section of the ALLD assesses the student's knowledge skills related to writing, with questions of language mechanics (punctuation and grammar) and language expression (pre-writing exercises and passage organization).

*vi. Math*

The Math Section of the ALLD consists of two main sections: Math Procedures and Math Problem Solving. The Procedures section consists of math items that require number operations, with virtually no reading. The Problem Solving section consists of word problems, and requires the student to read in order to understand and answer the questions about math content knowledge.

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<sup>3</sup> The synonym section requires a student to choose a synonym for a printed word.

<sup>4</sup> The multiple meaning words section provides a target sentence, and four subsequent sentences all containing the same word used in four different ways. The student must select the sentence in which the word is used in the same way as in the target sentence.

<sup>5</sup> The context clues section provides a target sentence with an underlined word; the target sentence provides a clue to the meaning of the underlined word. The student must choose the meaning of the underlined word.

Since the reading vocabulary, reading comprehension, language, and math sections of the ALLD were drawn from a range of grade levels, the scores are reported as grade level scores.

The Spanish ALLD Pre-test was administered in five forty-five minute sessions and the Post-test and English ALLD were administered in three forty-five minute sessions. Two research assistants administered each section of the assessment to a group of students in a classroom setting within the students' schools.

### 2.3.6 Classroom Observation Checklist

#### *Classroom observation procedure*

Supplementing the quantitative portions of the SIFE study was a qualitative portion, the purpose of which was to observe SIFE performance in their classrooms and reflect upon materials and instructional practices related to SIFE language and literacy learning. To collect data to achieve this purpose, specific classes in the five schools in the study were selected, and an observation procedure was devised to examine teaching and learning practices in each type of class. The five types of classes were English as a second language (ESL), ESL Math, Native Language Arts (NLA, i.e., Spanish), bilingual Mathematics, and Spanish-language Mathematics, the academic subjects of interest in the overall study and the foci of the Academic Language and Literacy Diagnostic (ALLD) periodically administered to the SIFE in the study. The numbers of classroom observations in each academic subject per school are given in Table 2.

Table 2. Number of observations in SIFE schools by class subject

Subject	School					Subject totals
	No. 1	No. 2	No. 3	No. 4	No. 5	
ESL	2	2	1	4	3	12

NLA	-	2	-	1	-	3
ESL Math	1	-	2	-	-	3
Sp Math	-	1	-	-	1	2
BL Math	-	1	1	1	0	3
(School totals)	3	6	4	6	4	-

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The total number of classroom observations across schools was 23. The presence of multiple observations in some subject categories indicates that there was more than one teacher teaching those subjects in a particular school. It can also be seen in Table 2 that there are unequal numbers of observations across schools, reflecting the fact that not all schools had equal numbers of all class types (e.g. ESL, NLA Spanish) and, also, that there were unanticipated limitations in researchers' access to schools.

As for the observation procedure used, this consisted of two trained observers simultaneously observing the same class, with each observer taking notes on separate forms. The observers seated themselves at different points within a classroom, took their respective notes, and then debriefed each other after the class to arrive at a consensus as to what was observed. The observers were the consultant to the project and one of two research assistants who had undergone several training sessions prior to the observations. At these sessions the trainees developed focused observation and debriefing skills through repeated viewing of videotaped high school ESL classrooms comparable to those in which the SIFE observations were to be conducted.

There were two different observation forms used in this procedure. One form consisted of a checklist, used to lend focus to the observations and to provide a common framework within

which different classroom environments could be compared. The checklist included various aspects of the SIFE classroom lessons, for example, types of student responses to the teacher's oral and written language, and student engagement with classroom activities. The checklist also contained a detailed listing of aspects of literacy practices in the classroom, for example, whether or not the literacy material used in an observed lesson was age-appropriate or grade-appropriate, and the presence and sufficiency of native-language scaffolding. (See Appendix, "SIFE Observation Checklist.") Each of the 30 checklist items included some kind of rating scale. For example, in one item, "Students show interest/engagement [in classroom activities]," possible answers were *all*, *most*, *some*, and *few*; these indicated approximately how many students seemed to be engaged in the activity. (Each possible answer was assigned a numerical value in the data-analysis phase of the study, so for example, *all* equaled 4, *most* = 3, *some* = 2, and *few* = 1.) The observer answered each item by circling the appropriate answer with a pen or pencil.

A second observation form consisted of handwritten notes taken down by the consultant during observations. These notes generally focused on the aspects of interest in the above-mentioned checklist, but often went beyond them. When possible, these classroom notes included notes taken during SIFE-school teacher interviews conducted after observations. The rationale behind the use of hand-written notes was twofold. First, rich, descriptive accounts of classroom behavior or teaching methods could be used to complement the more focused checklist tallies with illustrative detail. Second, aspects of SIFE lessons that were not anticipated by the range of topics represented in the checklist could conceivably be captured with a more "wide-angled" observation form.

### 2.3.7 Exit Questionnaire

The Exit Questionnaire is similar to the Intake Questionnaire, in that it is given orally on an individual basis and asks questions related to the students' language and literacy practices. The Exit Questionnaire also gathers information regarding the students' feelings about their experience in school, their recommendations for improvement in their academic classes and schools in general, and their motivation for graduating from high school and continuing on to college.

## 3. Results and Discussion: Year One (2006-2007)

### 3.1 Participant Attrition

The number of participants reported in the results section varies by test, for example, the number of students who completed the Spanish Literacy diagnostic at Time 1 was 98, but only 91 of those students completed the Intake Questionnaire. These varying numbers were due to student attrition from the beginning to the end of the study. In Table 3 we have indicated the total number of students for whom we are missing some data at Time 1, Time 2, and both Time 1 and 2 combined. The missing data is also subdivided by the three main reasons for the attrition: (1) some students were discharged, (2) some students were unwilling to participate, and (3) some students were frequently absent from school, or could not be located, at the time of testing.

Table 3. Number of Participants with missing data by year and in total

	<b>Year 1</b>	<b>Year 2</b>	<b>Year 1 and Year 2</b>
Discharged	19 <sup>1</sup>	5	24
Not willing to participate	12 <sup>2</sup>	1 <sup>3</sup>	13
Students frequently absent	12	45	55
<b>Total</b>	<b>43</b>	<b>53</b>	<b>92</b>

<sup>1</sup> Number includes 1 student who died during the study.

<sup>2</sup> Number includes 1 student who was in Special Ed. prior to the onset of the study.



<sup>3</sup> Number includes 1 student who was suspended during year 2.

We will now report the results for Year 1, followed by Year 2.

### **3.2 Intake Questionnaire**

#### *Background*

Ninety-one students completed the Intake questionnaire given at Time 1. These students were between fourteen and nineteen years old, with sixteen being the average age. Most of them (77%) emigrated from the Dominican Republic while the other 23% emigrated from various other countries, such as Colombia, Ecuador, El Salvador, Guatemala, Honduras, Mexico, and Puerto Rico. The home language for 97% of the students was Spanish, with three students reporting that they also spoke an indigenous language at home. Based on information given about their age of arrival in US, we found that 93% of the students had been living in the US for two or fewer years and 7% for more than two years.

The majority of students answered positively to our questions about adjusting to their new surroundings: All reported that they liked living in NYC; 98% said that they liked their new school, and all of them reported liking their new classes. In the following sections we report on the most important results from the different sections of the questionnaire.

#### *Family and Home Background*

Most of the students (86%) reported living with at least one parent in the US while a smaller percentage (14%) reported that they did not live with either parent. Of the 13 students who reported living with neither parent, 12 reported living with other relatives. The student who did not live with any relatives was 19 years old at the time of the interview. Among 78 students who reported knowing the highest level of education in their households, most of them (60%) reported high school as the highest level of education and the majority (56%) reported that

schooling was conducted in Spanish and English. In addition, a majority of the students (97%) reported having family members still living in their country of origin.

### *Exposure to Spanish and English*

A large majority (69%) of students reported that both Spanish and English were spoken in their neighborhoods. Out of 74 students, 78% reported interacting in English with a person in their household. A great majority (95%) also reported being exposed to some English outside of school in the form of watching television (30%) or via Internet access (48%), and the rest through other means.

### *Reading and Writing in Spanish and English*

Additionally, we asked questions about their literacy practices outside of the school and found that 84% of the students reported that they enjoyed reading. Of these students a small majority (52%) preferred reading in Spanish while the rest reported using some English in reading. A majority (82%) also reported that they enjoyed writing. Of these students a large majority (77%) preferred writing in Spanish while the rest reported using some English in writing.

### *Education History*

Half the students reported being educated in cities while the other half reported having some schooling in a rural school. 65% reported having no gaps in their education. Of 32 students that did report gaps in formal education, 31% reported a gap of two or more years and 69% reported a gap of less than 2 years. In addition to gaps in formal education, we also asked students with reported gaps whether they had studied during the gap; most of them (75%) reported they had not done so.

### *Educational Aspirations*

Ninety one students answered questions regarding their future plans and aspirations. We divided their answers into four categories, related to what types of aspirations they had for the future: a) Professional Aspirations (teacher, lawyer, doctor), b)- Non-Professional Aspirations (firefighter, baseball player), c) Social Aspirations (travel, family) and d) Doesn't Know / No Plans. Most of the students (54%) had professional aspirations, 31% had non-professional aspirations, 7% had social aspirations and 8% were unsure of their plans.

### **3.3 Spanish Syntax Test**

The mean score on the Spanish syntax test was 89% correct, with a standard deviation of 12 and a range of 36% to 100%. Overall, the students do not appear to have any developmental native language problems.

### **3.4 Spanish Oral Language Proficiency Test (Versant)**

The mean score on the Versant test score was 80% correct, with a standard deviation of 16 and a range of 34% to 100%<sup>6</sup>. The scoring program describes 80% correct as indicating that the student has “fluent, smooth, intelligible speech; controls appropriate language structure for speaking about complex material.” Again, these results suggest that the majority of these students do not have developmental delays in their native language.

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<sup>6</sup> Note that there were two low outliers, scoring 34% and 35%. One of these students is not included in the further analyses as he didn't complete many of the other tests. The other student had likely scored very low because of the testing situation: she spoke very quietly on the phone and was uncomfortable speaking on the phone. She has more 'typical' scores on other tests.

### **3.5 Working Memory Task**

We administered the working memory task to twenty-three of the students from the SIFE group. 78% of the students tested had scores indicating an average working memory<sup>7</sup>. Therefore, we cannot conclude that the SIFE population is a struggling group of learners because of a general cognitive problem of working memory.

### **3.6 Spanish ALLD Year One**

#### *Basic Literacy:*

The mean score on the basic literacy section of the ALLD was 96% correct, with a range of 69% to 100% and a standard deviation of 4.5. Thus, the ninety-eight students in the SIFE group have basic literacy skills and are able to decode and read simple sentences. Their high performance on the basic literacy portion of the ALLD shows that the students do not have low-level reading difficulties, such as dyslexia.

#### *Reading Vocabulary:*

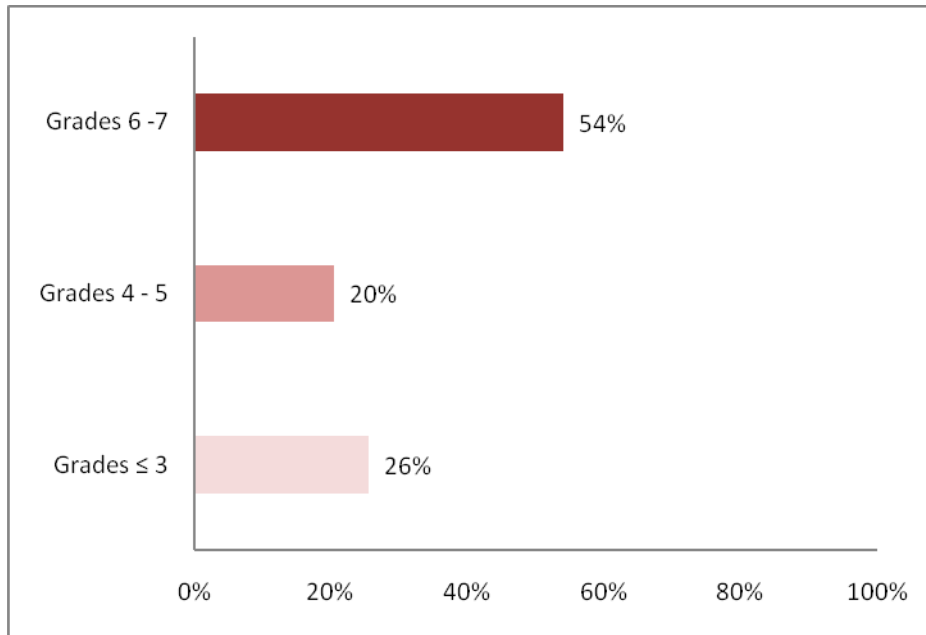
##### *Grade Levels*

The reading vocabulary section of the ALLD Pre-test consists of items from the third grade level through the seventh grade level. Figure 1 represents the number of students performing at grade levels three and below, and at grade levels four through five and six through seven (see Appendix TK for a more detailed figure, with all grade levels included).

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<sup>7</sup> 4% scored above average and 17% scored below average. The latter group will be discussed below.

Figure 1. Reading Vocabulary: Percentage of Students Scoring at Grades 6-7, Grades 4-5 and Grades 3 and Below



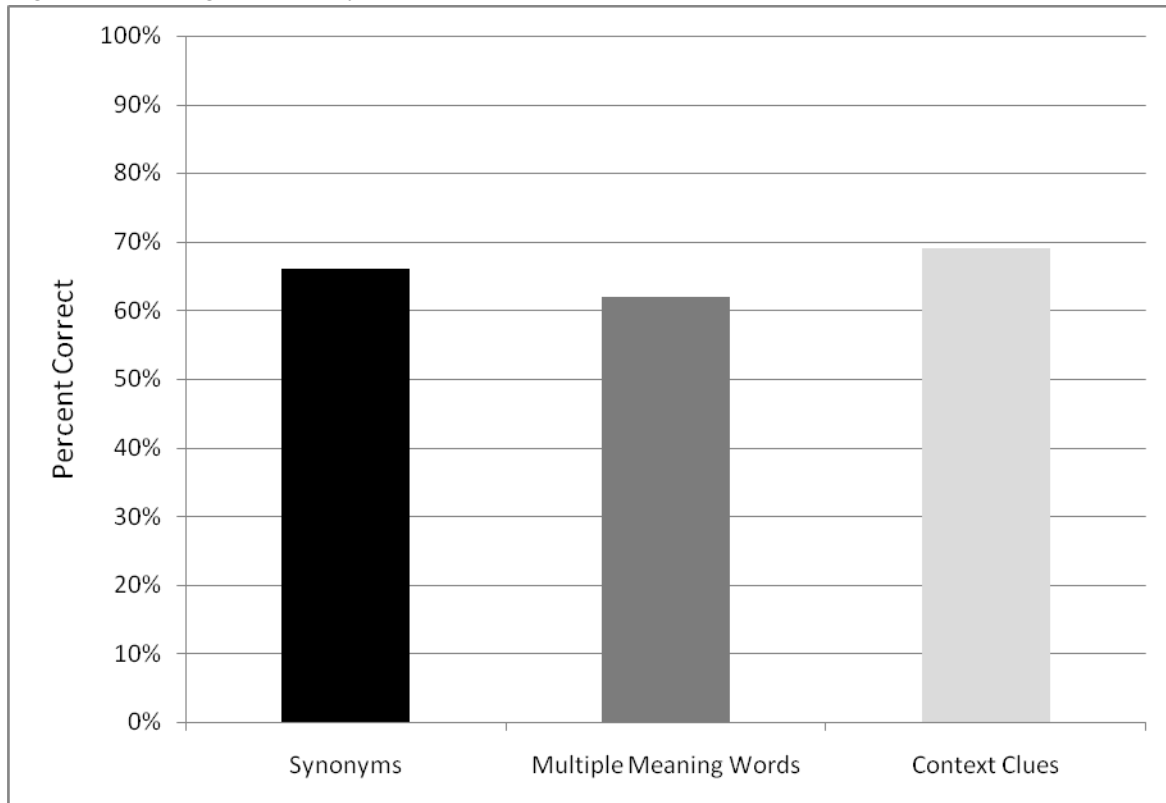
The average grade level achieved by the students on the reading vocabulary section of the ALLD Pre-test is fifth grade. The students are enrolled in the ninth and tenth grades, so they are generally at least four grade levels below the expected level in their knowledge of reading vocabulary in their native language. Forty-six percent of the students scored at the fifth grade level or below. Fifty-four percent of the students scored at the sixth and seventh grade levels, with twenty-two percent of the students performing at the seventh grade level, and one student performing at ceiling (100% correct).

### *Subskills*

Recall that the reading vocabulary section of the ALLD includes three types of items, assessing three separate subskills: synonyms, multiple meaning words, and context clues. Synonyms items test the ability to choose a synonym for a given word, multiple meaning words items test the ability to recognize the multiple meanings of a given word, and context clues items

test the ability to use given information to determine the meaning of an unknown word. Figure 2 shows the average score of the SIFE group on these three subskills, across all grade levels.

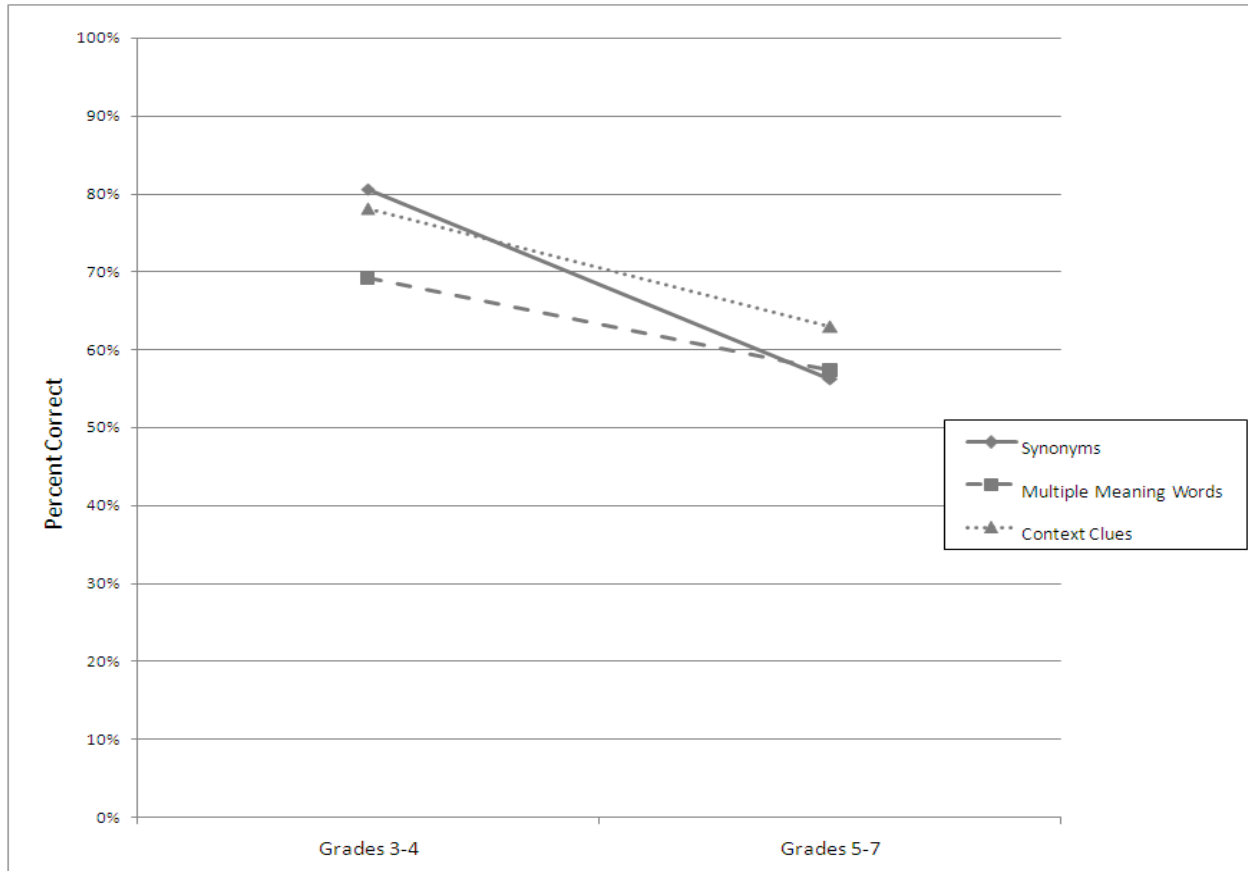
Figure 2. Reading Vocabulary: Mean Percent Correct for Three Subskills



For the three subskills, tested at grade levels three through seven, the students are scoring between 60 and 70 percent correct. The students are performing highest on context clues and lowest on multiple meaning words. There is a main effect for subskill type ( $F(1, 97) = 4.902, p < .01$ ); post-hoc comparisons revealed that the only significant difference was between multiple meaning words ( $M = 62\%$ ) and context clues ( $M = 69\%, p < .01$ ). In order to get a more detailed description of the skill performance, we computed the subskill scores for the lower grade levels and the higher grade levels in order to see if at the easier level or the more difficult level the

students were clearly scoring better on a given item type. See Figure 3 for the results with the items divided into difficulty level.

Figure 3. Reading Vocabulary Subskills: Mean Percent Correct for Two Difficulty Levels



Note that overall the students perform better on the subskills in the third and fourth grade levels. On items from grades three and four, the students score significantly lower on multiple meaning words ( $M = 69\%$ ) than on synonyms ( $M = 81\%$ ,  $p < .001$ ) and context clues ( $M = 78\%$ ,  $p < .001$ ); however, there is no statistical difference in performance on synonyms and context clues. The students have the largest decrease in scores on the synonyms items. They appear to know the vocabulary words generally learned in grades three and four, but do not know many of the words generally learned in grades five, six and seven. On the items from grades five through

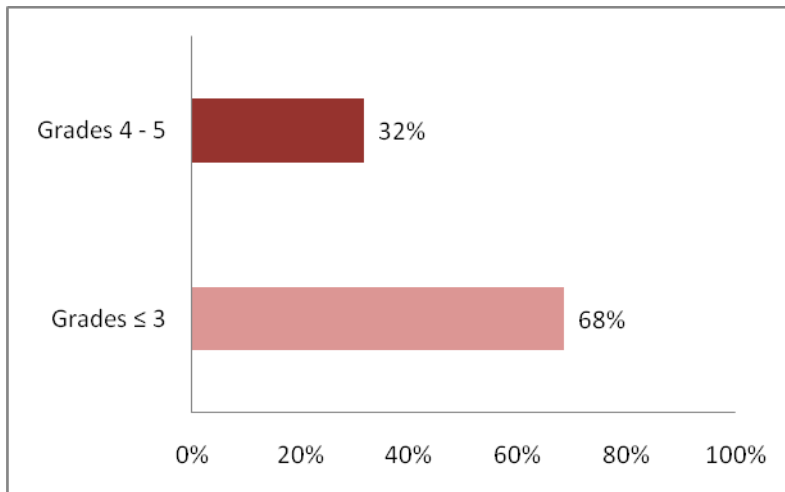
seven, however, there is no difference in performance on the three subskills ( $F(2, 194) = .315, p = ns$ ).

*Reading Comprehension:*

*Grade Levels*

The reading comprehension section of the ALLD Pre-test consists of items from second grade through fifth grade. Figure 4 represents the number of students performing at grade levels four and five and grade three and below (see Appendix TK for a more detailed figure, with all grade levels included).

Figure 4: Reading Comprehension: Percentage of Students Scoring at Grades 4-5 and Grades 3 and Below.



The students' performance on the reading comprehension section of the assessment is lower than that of the reading vocabulary section. The majority of the students (68%) are performing at or below the third grade level on reading comprehension in their native language. The average grade level score on the reading comprehension section of the ALLD Pre-test is third grade. Thus, the students are generally six grade levels below the expected level of ninth grade in

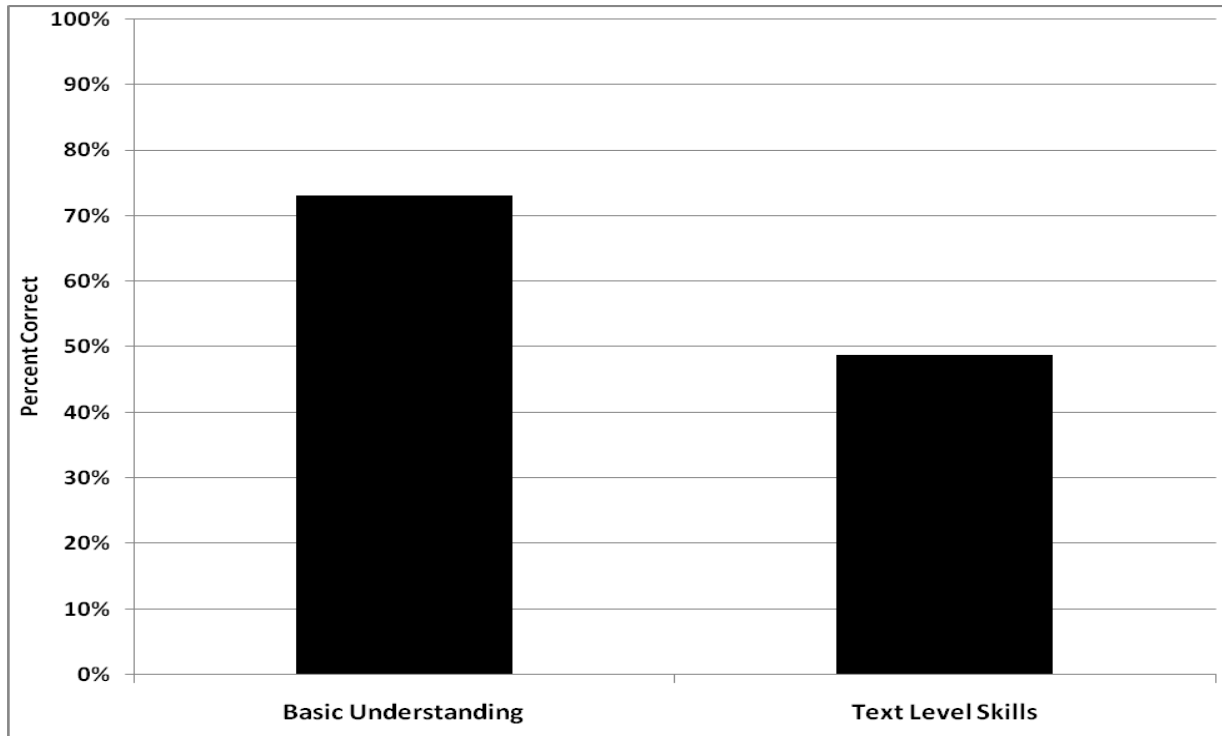


reading comprehension. Although twenty-three percent of the students scored at fifth grade level, no student reached ceiling on the reading comprehension portion of the ALLD Pre-test.

### *Subskills*

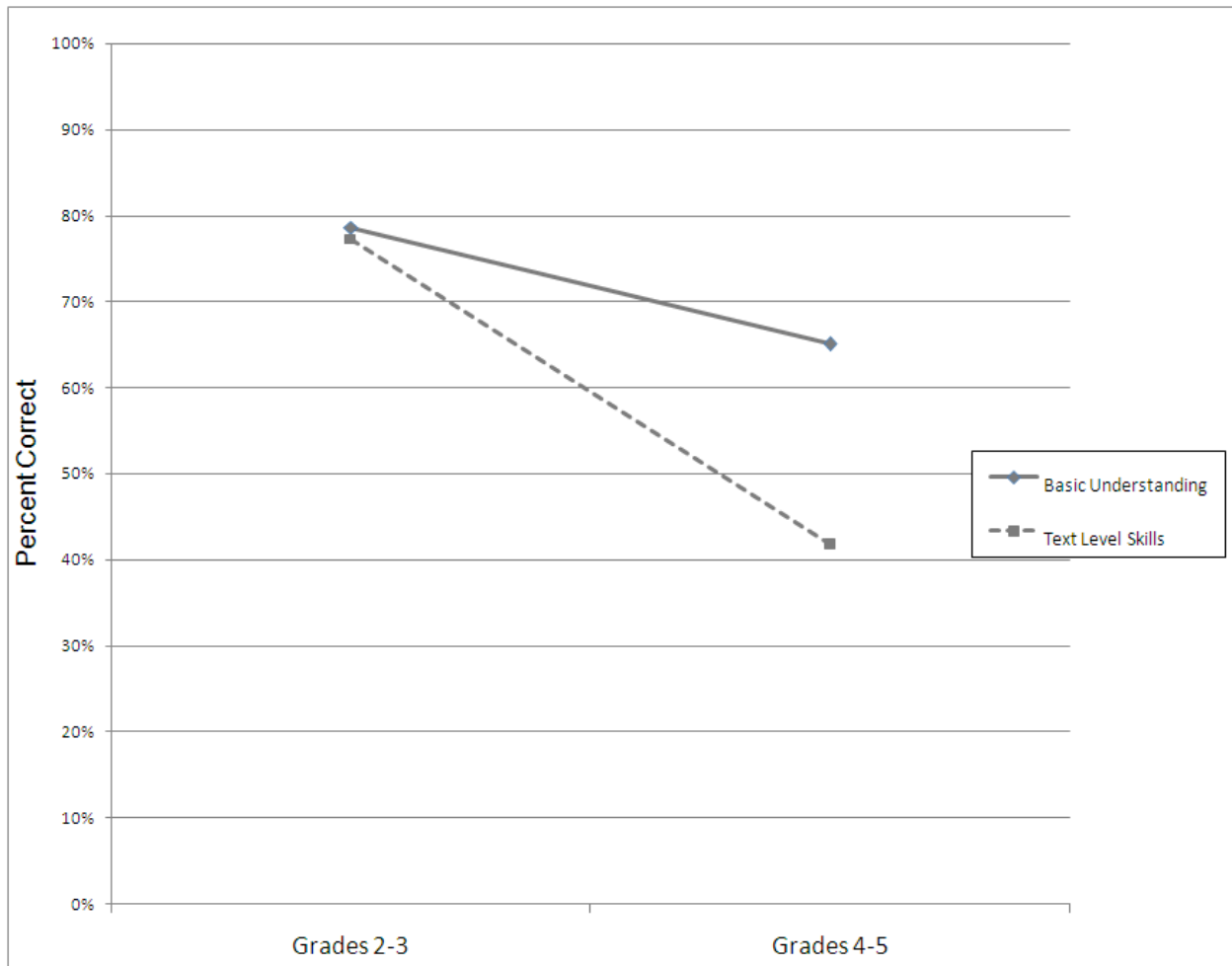
The reading comprehension section of the ALLD tests both basic understanding skills and text level skills. Items assessing basic understanding can be answered by referring back to the text, because the answer is explicitly stated in the text. Text level skills are higher level comprehension skills, and require the student to think critically, make connections, and use reading strategies. Since text level skills are higher level skills than basic understanding skills, we would expect the students to perform better on the basic understanding skill than the text level skill. Figure 5 represents the average scores on the two subskills on all items in the reading comprehension portion of the Spanish ALLD Pre-test.

Figure 5. Reading Comprehension: Mean Percent Correct for Two Subskills



The students score significantly higher on the basic understanding skills than on the text level skills ( $t(97) = 14.07$ ;  $p < .001$ ), with an average of 73% on basic understanding items and 49% on the items testing higher level skills. The students do not appear to have strong reading strategy skills. As with the reading vocabulary section, we also report the subskill performance among the lower grade levels and the higher grade levels. Figure 6 represents the average score on the subskill of the reading comprehension section of the diagnostic among items from the second and third grades and from the fourth and fifth grades.

Figure 6. Reading Comprehension Subskills: Percent Correct for Two Difficulty Levels



Among the lower grade levels, when the texts are easier to read and the questions are simpler to answer, the students score quite high on both basic understanding and text level skills. We see the difference in skill performance in the higher grade levels, with a greater decline in text level skills. The students score 42% on text level skills while scoring 65% on basic understanding items. We see a greater decline in the most important subskill of reading comprehension.

*Language:*

The language section of the ALLD consists of items from the third and fourth grade levels. The mean grade level on the language section of the ALLD Pre-test is between third and fourth

grade. The pre-writing skills measured by the language section are important as one is learning to write. About half of the students do not evidence mastery of these skills at the fourth grade level. While 64% of the students score at the grade four level, only two students scored at ceiling.

### *Summary of Reading Skills*

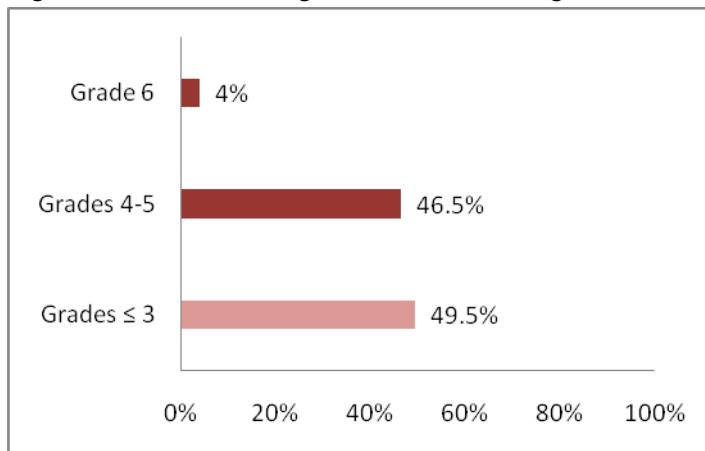
The SIFE population tested here appears to have basic literacy skills; the students are able to decode words and read simple sentences. However, they score lower on vocabulary and reading comprehension skills. The average grade level performance on the vocabulary measure was fifth grade and the average grade level performance on the reading comprehension measure was third grade. Recall that the students are enrolled in the 9<sup>th</sup> and 10<sup>th</sup> grades, and are thus very far behind in their academic literacy skills. The students appear to struggle with multiple-meaning words on the vocabulary section, scoring low on this subskill in the lower and higher grade levels tested. The students appear to have the most difficulty with text level skills in reading comprehension, which is arguably why their reading comprehension scores are so low. They do not have well developed higher-level reading skills, which are needed in the higher grades the students are enrolled in.

### *Math:*

#### *Grade Levels*

The Math section of the ALLD Pre-test includes items from third through sixth grade. Figure 7 shows the grade level performance of the SIFE during Year One, across both sections of the test (i.e. procedures and problem solving).

Figure 7. Math: Percentage of Students Scoring at Grade 6, Grades 4 and 5 and Grades 3 and Below

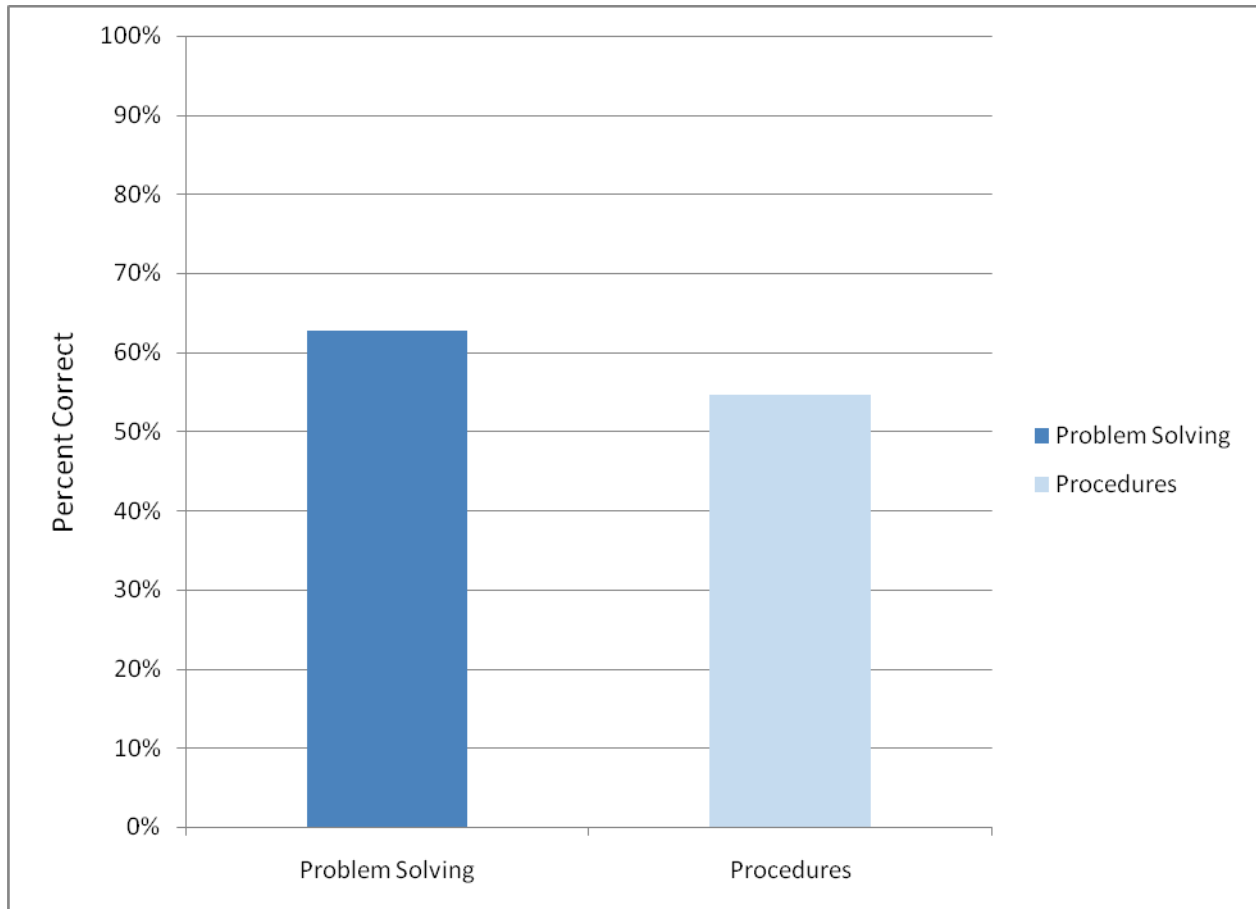


The mean grade level on the Math section of the ALLD Pre-test is fourth grade. Nearly half the students (49.5%) score at or below the third grade level.

### *Subskills*

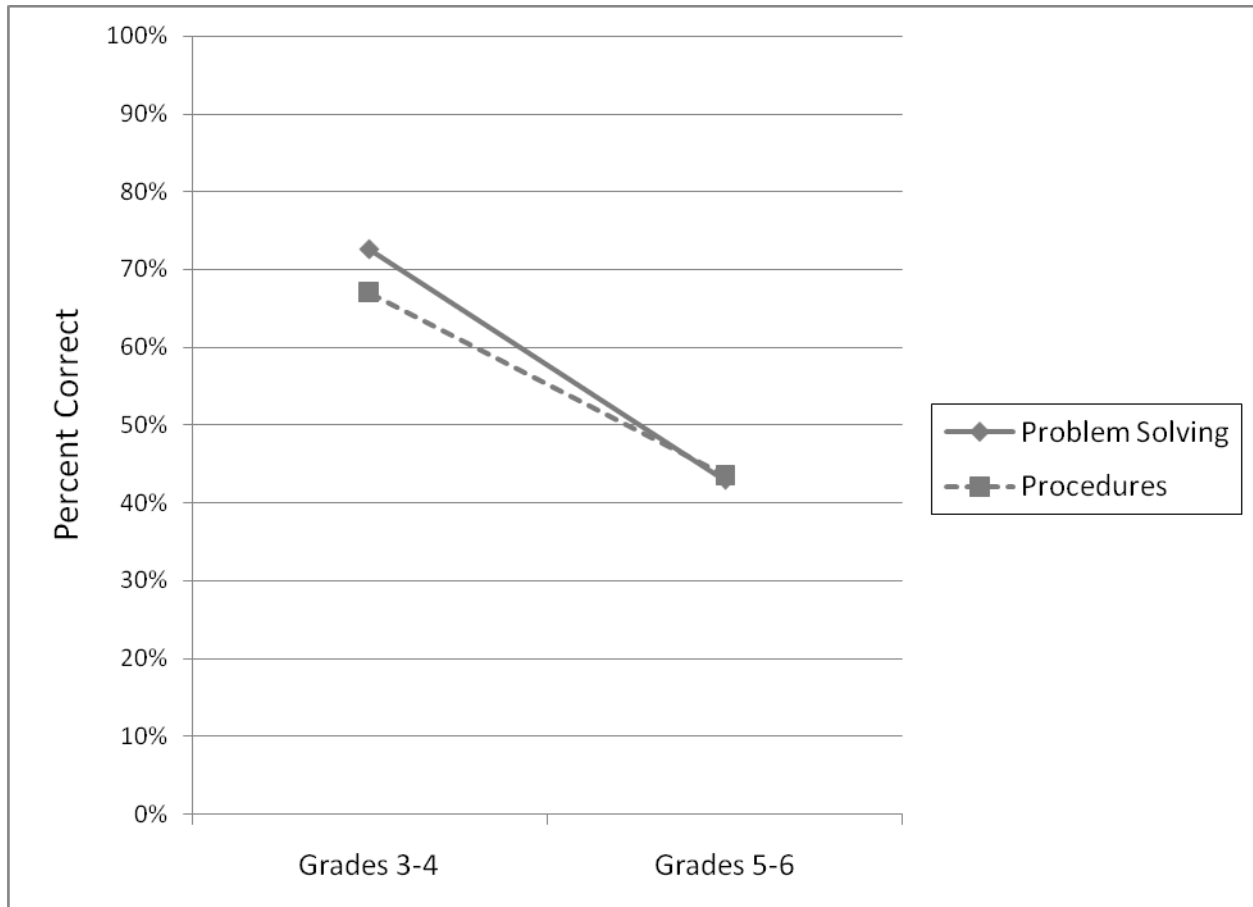
The math section consists of two major item types: problem solving and procedures. The problem solving items require the student to read in order to solve a math problem and the procedures items do not require reading. We would expect that since the students do not have high levels of literacy they would perform better on the procedures items as they do not require reading. Figure 8 shows the results of the two subskills from all items in the math section of the ALLD.

Figure 8. Math: Mean Percent Correct for Two Subskills



Contrary to our hypothesis that the students would evidence better performance on procedures than problem solving, the students had a mean score of 62% on the problem solving items and a mean score of 54% on the procedures items, with a significant difference in scores ( $t(100) = 4.55; p < .001$ ). We examine the results further by reporting the subskills by level of difficulty. Figure 9 represents the subskill results among the items from grades three and four and the items from grades five and six.

Figure 9. Math Subskills: Percent Correct for Two Difficulty Levels



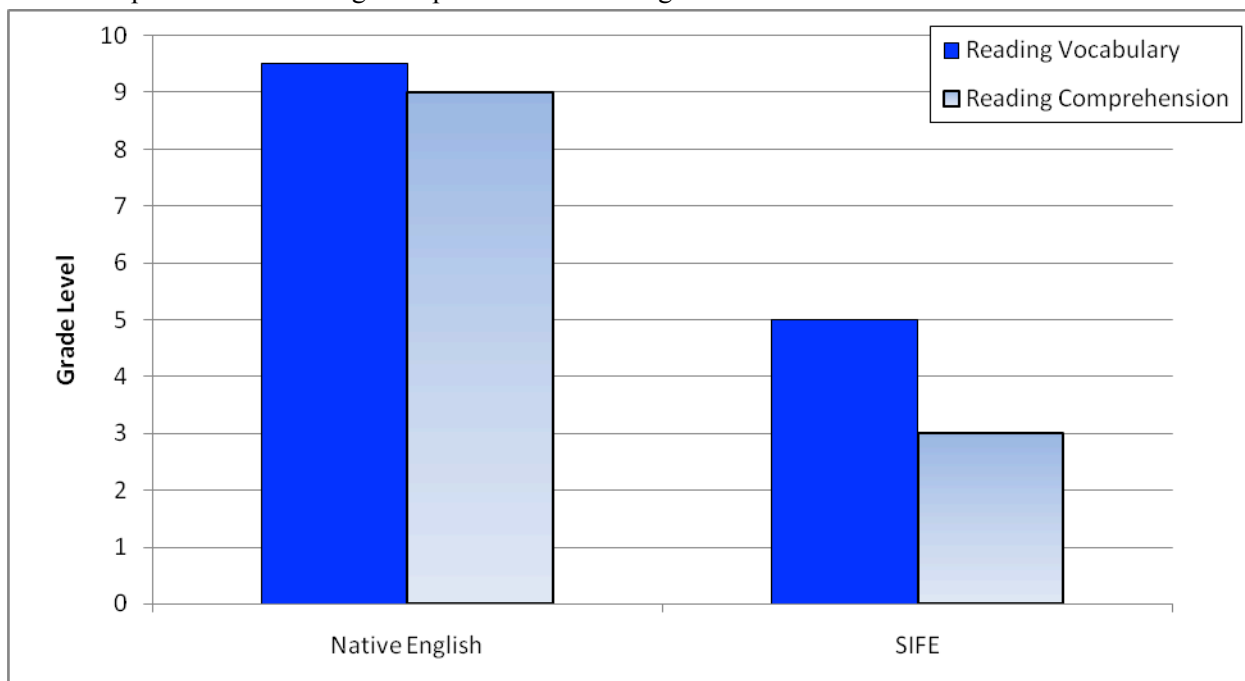
We see a steep decline in math skills from the lower to the higher grade levels. The students do quite well on simple addition and subtraction of whole numbers, but they do not have the higher level math skills required by grades five and six. The students perform equally low on problem solving and procedures at the higher grade levels.

### 3.7 Comparison of Abilities in Native Language: SIFE (Spanish ALLD) Compared to High School Native English Speakers (English ALLD)

In order to compare academic literacy skills in the native language of SIFE with the academic literacy skills in the native language of ‘typical’ students in New York City high

schools, we administered the English ALLD to native English speakers attending three of the same high schools as SIFE. Figure 10 shows the comparison of these two groups.

Figure 10. Reading Comprehension and Reading Vocabulary Grade Level Scores in Native Language: SIFE Compared to Native English Speakers in NYC High Schools



The native English speakers scored at grade level on both reading vocabulary and reading comprehension. The students are all enrolled in the ninth grade and score between ninth and tenth grade on the reading vocabulary section of the ALLD and score at the ninth grade level on reading comprehension. These results verify the grade level assessments of the ALLD, and show how large the gap is in native language literacy skills between SIFE and their native English-speaking peers. As reported above, in their native language, SIFE score at the fifth grade level on reading vocabulary and at the third grade level on reading comprehension. The largest gap between the two groups is in native language reading comprehension: SIFE generally score six grade levels below their peers.



## **4. Results and Discussion: Year Two (2007-2008)**

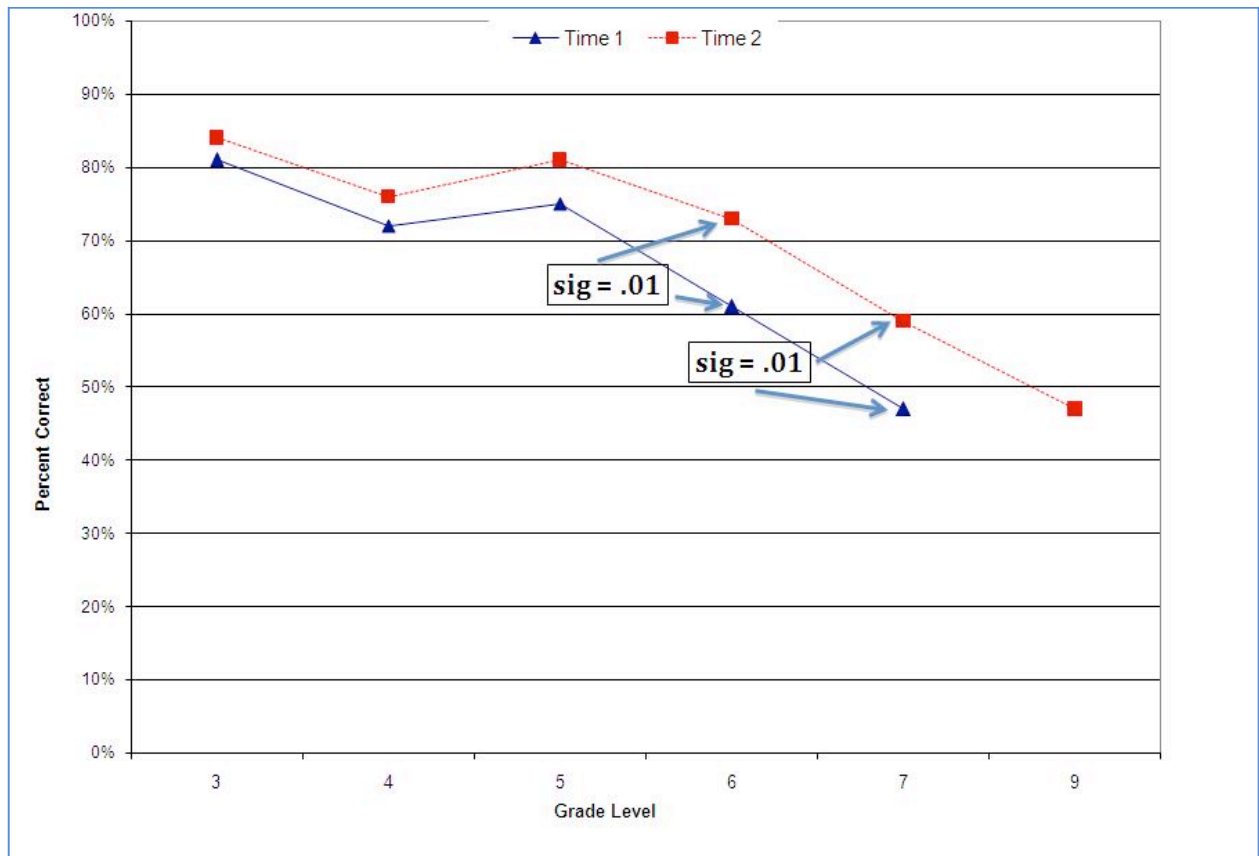
### **4.1 Spanish ALLD Year Two Compared to Spanish ALLD Year One**

When reporting the Spanish ALLD Post-test results, we will focus on a comparison of the ALLD Pre-test and Post-test among those students who completed both tests (N=48) in order to measure gains the students made in native language academic skills in one year.

#### *Reading Vocabulary:*

In comparing the Pre-test and the Post-test we include the same number of items from each skill and grade level, up to grade seven in reading vocabulary. We also include the results from the higher grade levels on the Post-test (i.e. those not included in the Pre-test); that is, for reading vocabulary we present results for grade nine. Figure 11 represents the mean score on each grade level, on both the Pre-test and Post-test. This figure shows a comparison of the forty-eight students who completed the reading vocabulary section of the Spanish ALLD Pre- and Post-tests

Figure 11. Reading Vocabulary Results: Grade Level Performance Pre-test compared to Post-test

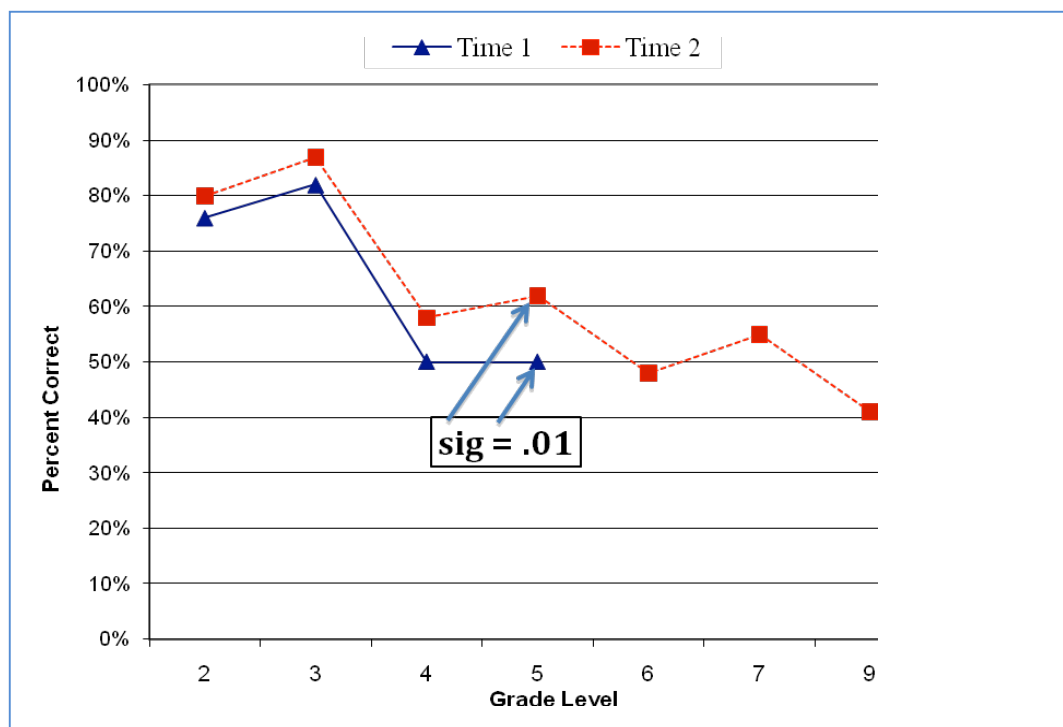


The scores on both tests steadily decline as the grade levels increase. However, there is a significant increase between time one and time two. Note that the students improved in their performance in reading vocabulary, with statistically significant gains in both sixth and seventh grades (sixth grade:  $t(47) = 2.6, p = .01$  and seventh grade:  $t(47) = 2.9, p < .01$ ). Among the forty-eight students who took both the Pre- and Post-test, the mean grade level score on the reading vocabulary section of the ALLD Post-test was between sixth and seventh grade, as compared to a mean grade level score of fifth grade on the Pre-test: this represents a gain of about 1.5 grade levels.

*Reading Comprehension:*

Again, in comparing the Pre-test and the Post-test we include the same number of items from each skill and grade level, up to grade five in reading comprehension. We also include the results from the higher grade levels on the Post-test (i.e. those not included in the Pre-test); that is, for reading comprehension we present results for grades six, seven and nine. Figure 12 represents the mean score on each grade level of the Pre- and Post-tests. This figure shows a comparison of the scores of the forty-eight students who completed the reading comprehension section of the native language literacy assessment in both Year One and Year Two.

Figure 12. Reading Comprehension Results: Grade Level Performance Pre-test and Post-test



The students improved their performance in reading comprehension, with significant gains at the fifth grade level ( $t(47) = 2.6, p = .01$ ). The mean grade level score of the forty-eight students on the reading comprehension section of the ALLD Post-test was fifth grade, as compared to the

mean grade level score of between third and fourth grade on the Pre-test: this represents a gain of about 1.5 grade levels. The scores on the Post-test drop after the fifth grade level, with lower scores on the sixth, seventh and ninth grade levels.

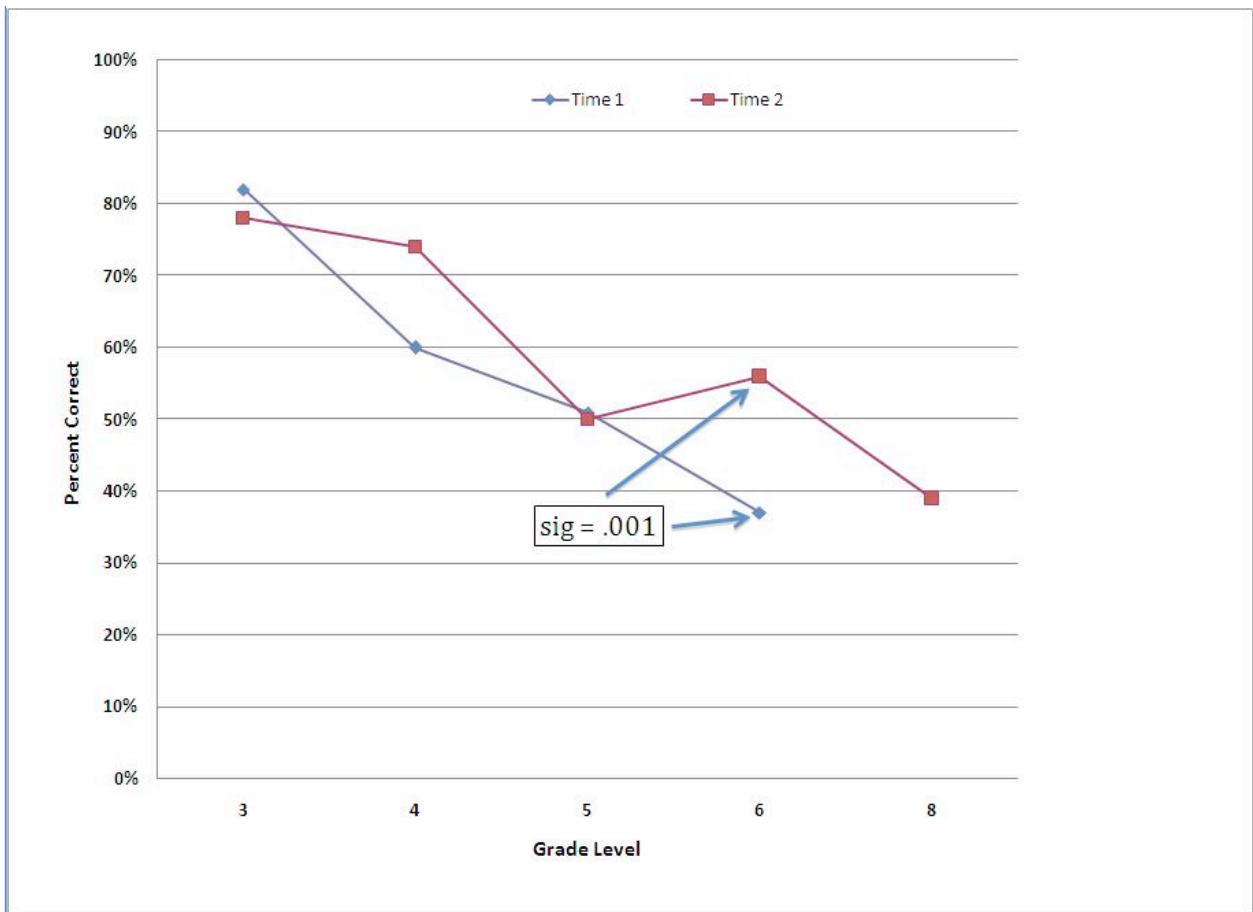
*Language:*

The language section of the ALLD Post-test consists of items from grade levels three and four. Forty-eight students completed the language section of the native language literacy assessment in both Year One and Year Two. The students improved in their performance in language; this means that their writing skills in their native language increased over the course of one year. The mean overall score was significantly better on the Post-test than the Pre-test ( $t(47) = 2.6, p = .01$ ).

*Math*

On the Math section of the ALLD, forty-three students completed both the Pre- and Post-tests. The Math section of the ALLD Pre-test includes items from grades three to six and the Post-test includes items from grades three to eight. Similarly for Math, we include the same number of items from each skill and grade level up to grade six. We also include results from grade eight on the Post-test; grade eight items were not included on the Pre-test. Figure 13 represents the mean score on each grade level of the Pre- and Post-tests.

Figure 13. Math Results: Year One Grade Level Performance compared to Year Two Grade Level Performance



The students performed significantly better on the sixth grade level math items on the Post-test than they did on the Pre-test ( $t(42)=5.1, p<.001$ ). The mean grade level score for the forty-three students on the Pre-test was between the third and fourth grade, compared to between the fourth and fifth grade level on the Post-test: this represents a gain of approximately one grade level. The Post-test scores at the eighth grade level are lower than the lower grade levels, with only 40% correct.

*Summary: Improvement (Individual Gains in Spanish T1 – T2)*

Of the forty-eight SIFE who completed the ALLD Literacy in Spanish at both Year One and Year Two, most of them, 79%, did at least as well or better overall (this includes the Vocabulary, Reading Comprehension and Language Sections). A paired-samples T-test shows that the difference in their overall Literacy scores from Year One to Year Two is significant. When just looking at the Spanish Vocabulary Section, again most SIFE, 73%, performed as well or better on this section of the ALLD. The difference in Vocabulary scores from Year One to Year Two is also significant. On the Spanish Reading Comprehension section, slightly less than half of SIFE, 44%, performed as well or better in Year Two as they did in Year One, however, the difference in Reading Comprehension scores from Year One to Year Two is *not* significant. For the Spanish Language Section, the majority of SIFE, 73%, achieved scores at Year Two that were either the same or better as they had achieved at Year One. The difference in the scores on the Language Section of the ALLD is significant.

*Improvement (Individual Gains in Math T1 – T2)*

Of the forty-three SIFE that completed the Spanish Math ALLD sections at both Year One and Year Two, the majority of students, 67%, did as well or better at Year Two on Spanish ALLD Math. The difference in their scores from Year One to Year Two is also significant.

**4.2 English Diagnostics**

We administered English diagnostics to SIFE in Year Two only, as in Year One they had (presumably) only been in the NYC school system for less than one year and would likely not have English skills sufficient for completing diagnostics in English. In our pilot study, we found that our twelve participants who had also been in NYC schools for less than one year were not

able to understand and complete English diagnostics. Recall that in addition to our target group of SIFE, we include comparison groups who also took the English ALLD.

#### **4.2.1 English Syntax Test**

The mean percent correct on the English syntax test was 63%, with a standard deviation of 17 and a range of 32% to 90%. The students are still in the beginning stages of acquiring complex English syntactic structures.

#### **4.2.2 English Oral Language Proficiency Test (Versant)**

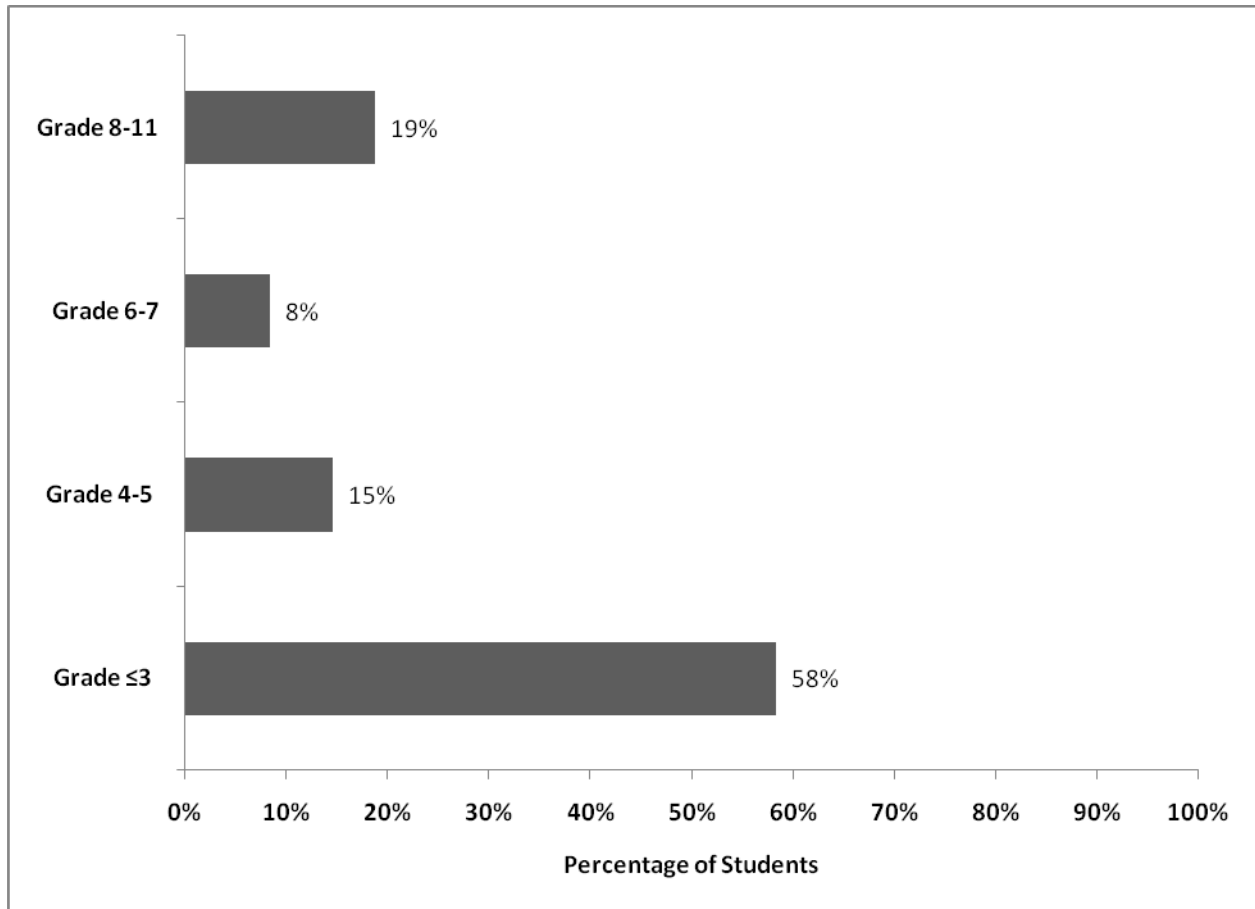
The mean percent correct overall on the English Versant test was 34%, with a standard deviation of 9 and a range of 25% to 54%. The scoring program describes this score as indicating that the student “can manage some slow, short, isolated utterances, or spoken formulas, but has difficulty following any native conversation; test-taker may often pause to search for words and may be difficult to understand.” Just as with the syntax test, the Versant results indicate that the students are still in the beginning stages of acquiring English.

The above results regarding the English Versant and the English Syntax test show that our SIFE are still in the process of acquiring the English language.

#### **4.2.3 English ALLD**

We administered the English ALLD to the SIFE students in order to measure their acquisition of English academic literacy after being in NYC schools for almost two years. Figure 14 reports the grade level scores on the vocabulary section of the English ALLD.

Figure 14. Vocabulary: Percentage of Students Scoring at Grades 9-11, Grades 5-7 and Grades 3 and Below

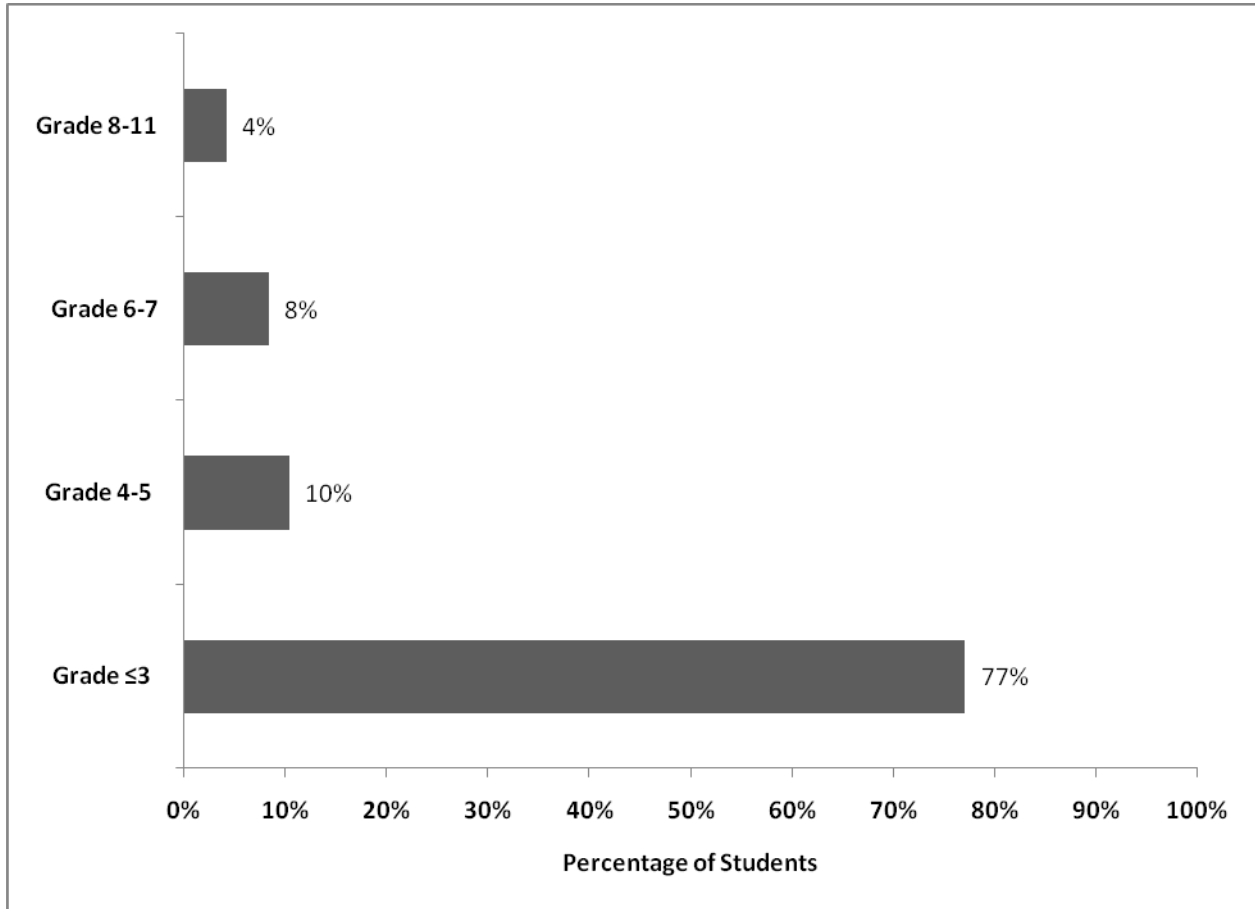


Although the students have been in a NYC high school for almost two years, their English academic skills are still very low. On the reading vocabulary section of the ALLD the majority of students score at a level below high school, with 19% of the students scoring at the high school grade levels (9-11). And 73% of the students score at the elementary school level, with 58% of the students scoring at or below the third grade level.

See Figure 15 for the Reading Comprehension grade level results of the English ALLD.

Figure 15: Reading Comprehension: Percentage of Students Scoring at Grades 7-11, Grades 4-6 and Grades 3 and Below.





The reading comprehension skills of the SIFE are also very low, with the majority of students (77%) scoring at or below the third grade level. Only 4% of the students score at a high school level on the reading comprehension section of the English ALLD, and 8% of the students scored at a middle school level in English reading comprehension. See Figures 16 and 17 below for the scores on the subskills of reading comprehension: basic understanding and text level skills.

Figure 16: Basic Understanding Subskill of Reading Comprehension

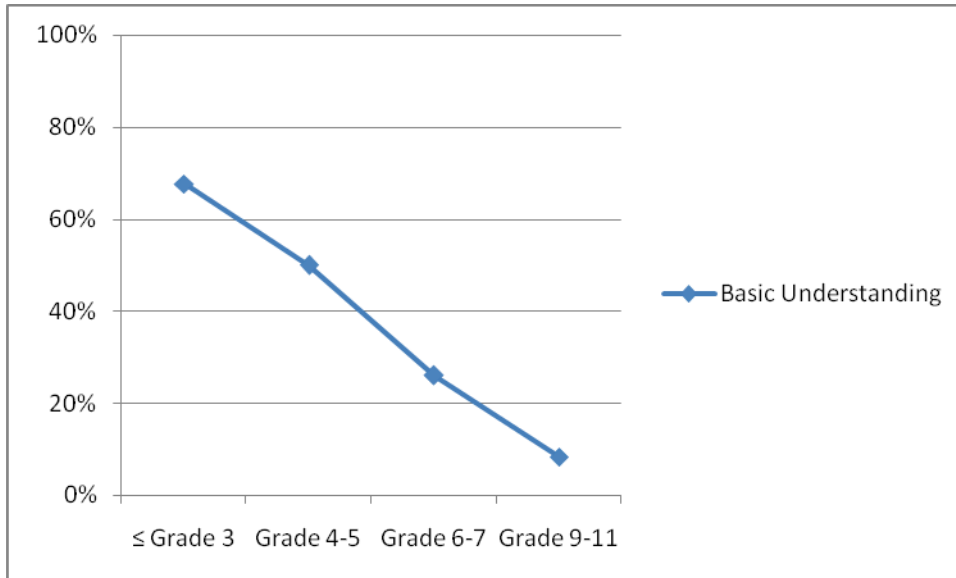
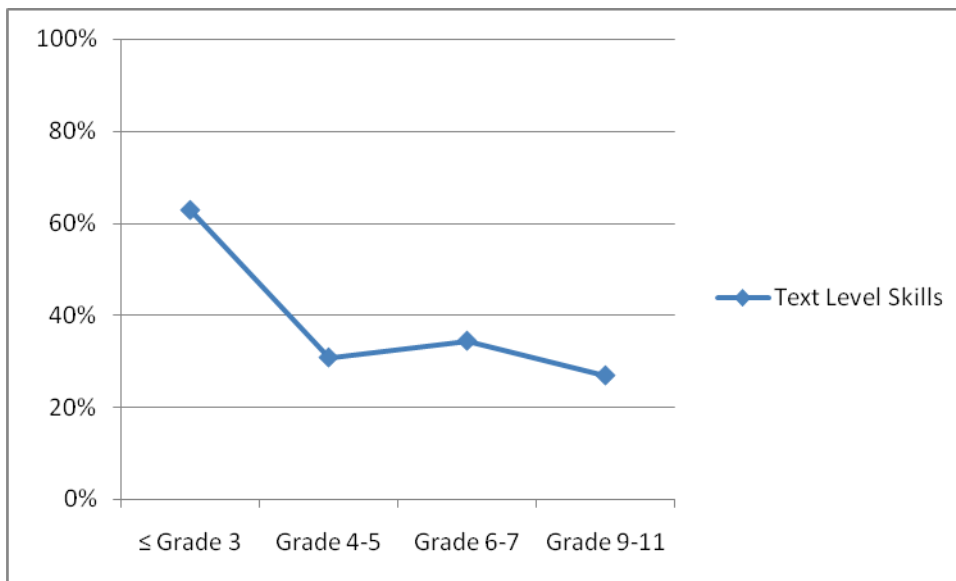


Figure 17: Text Level Subskill of Reading Comprehension



The students score above 60% on both item types at the second and third grade levels.

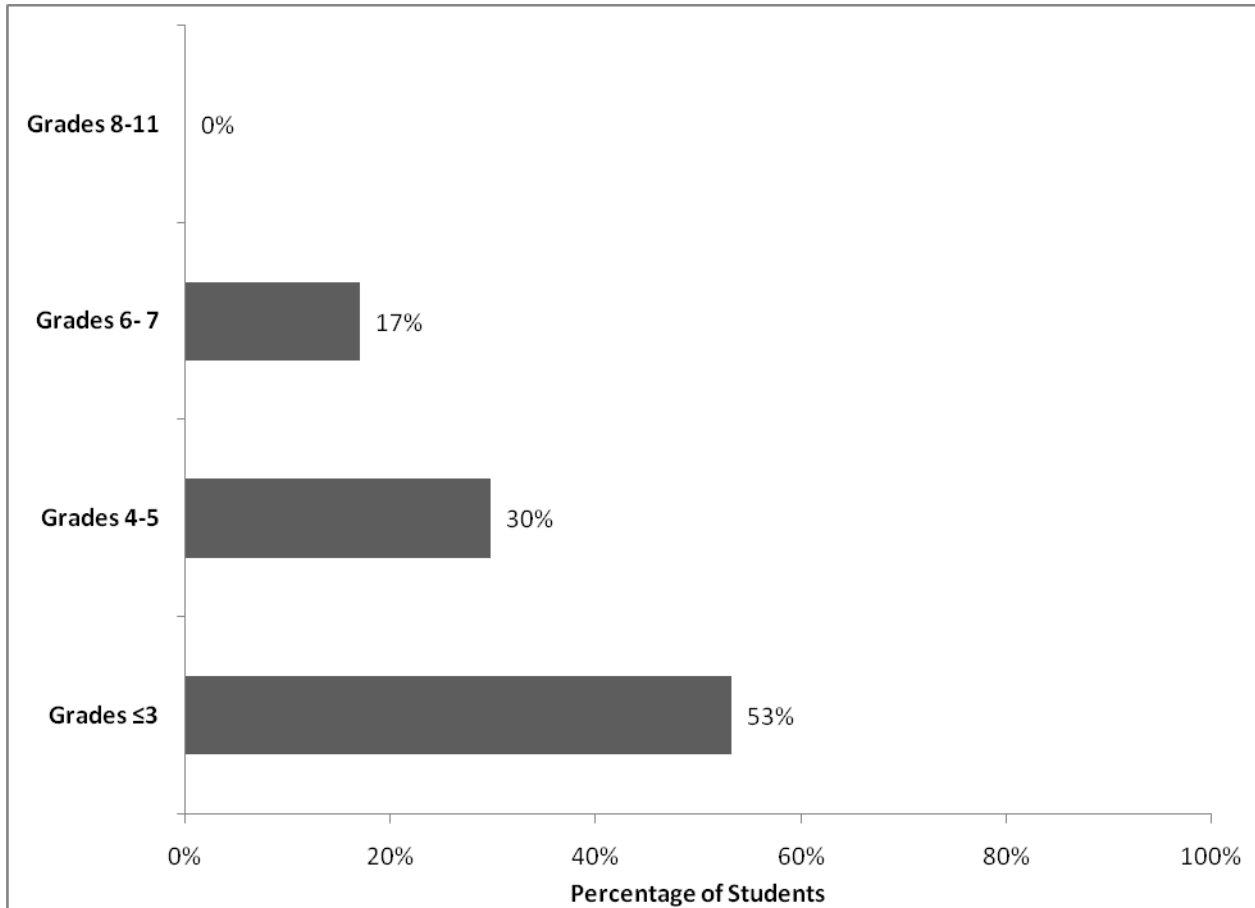
We see a steady decline in text level skills, with the students scoring 31% correct on the text

level items from the fourth and fifth grades; this low level holds for the remainder of the grade levels.

*Math Results*

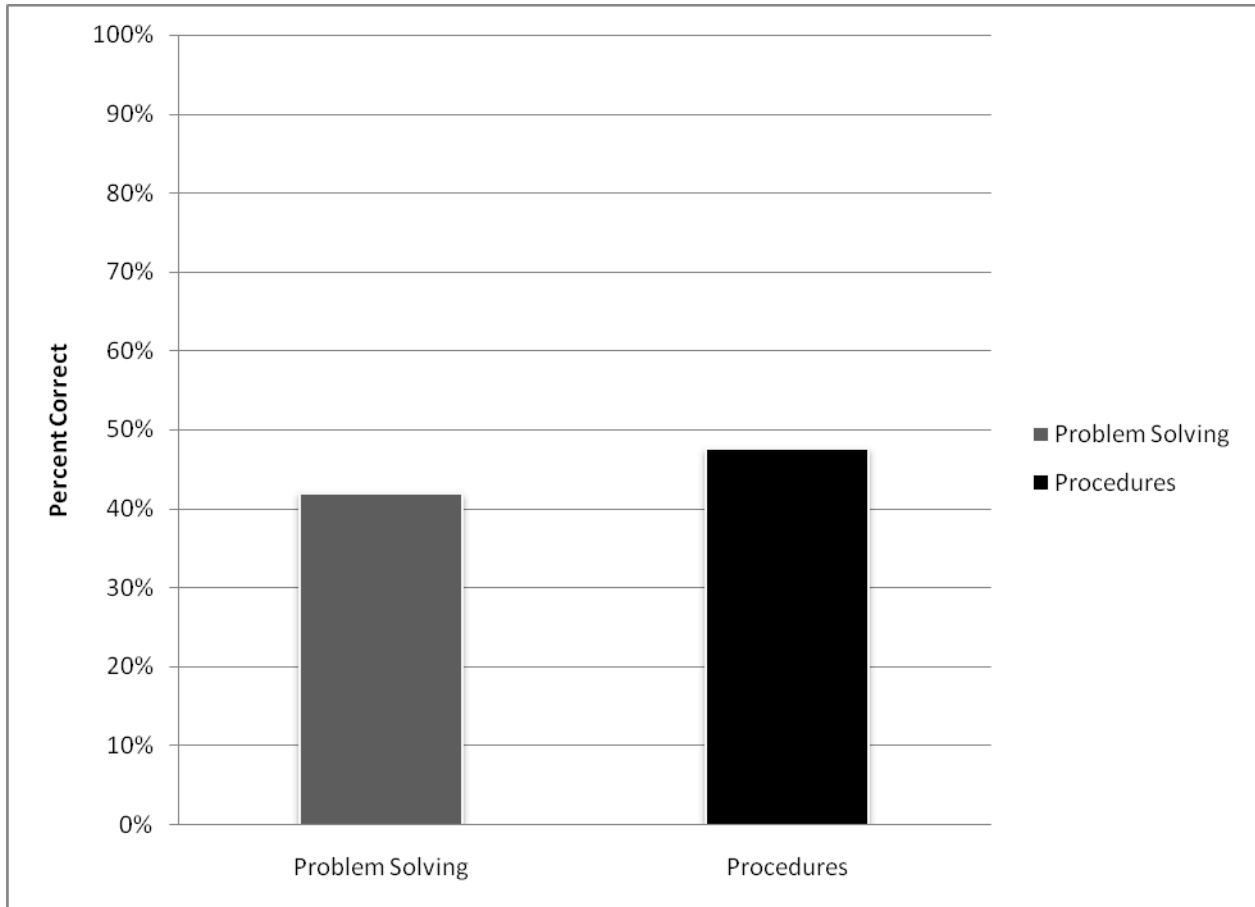
Figure 18 shows the math grade levels for the students on the English ALLD.

Figure 18. English Math Results: Percentage of SIFE Scoring at Each Grade Level



On the math section of the English ALLD, the majority of the students (53%) scored at or below the third grade level. None of the students scored at a high school level on the math section of the English ALLD. In order to compare the procedures and problem solving sections, we computed the scores for these two subskills. Figure 19 represents the mean percent correct on the two subskills of the math section.

Figure 19: English Math Results by Subskill



As expected, the students score higher on the procedures section than the problem solving section, since the problem solving items require reading in English. See Figures 20 and 21 for the percent correct on the two subskills across the grade levels.

Figure 20: Procedures Items: Percent Correct by Grade Level

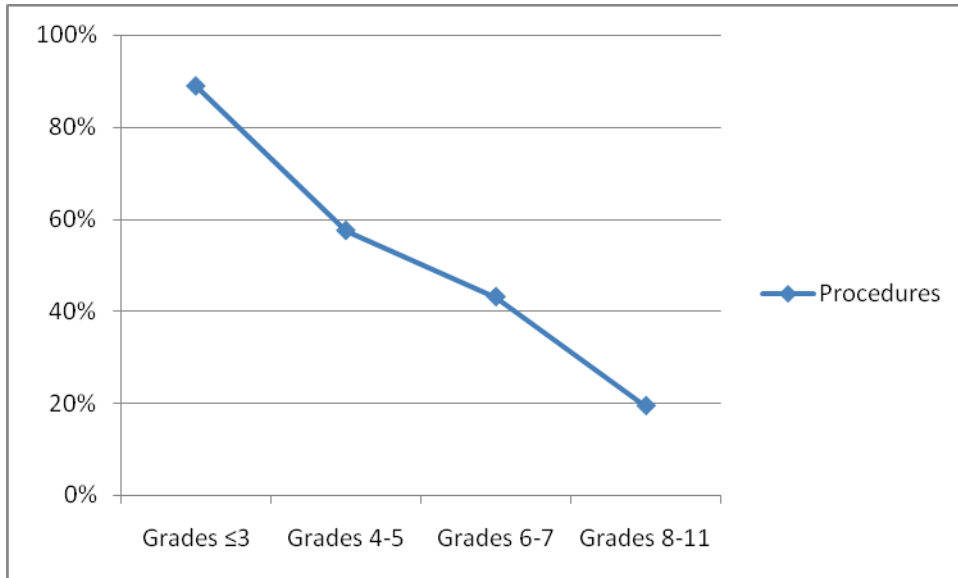
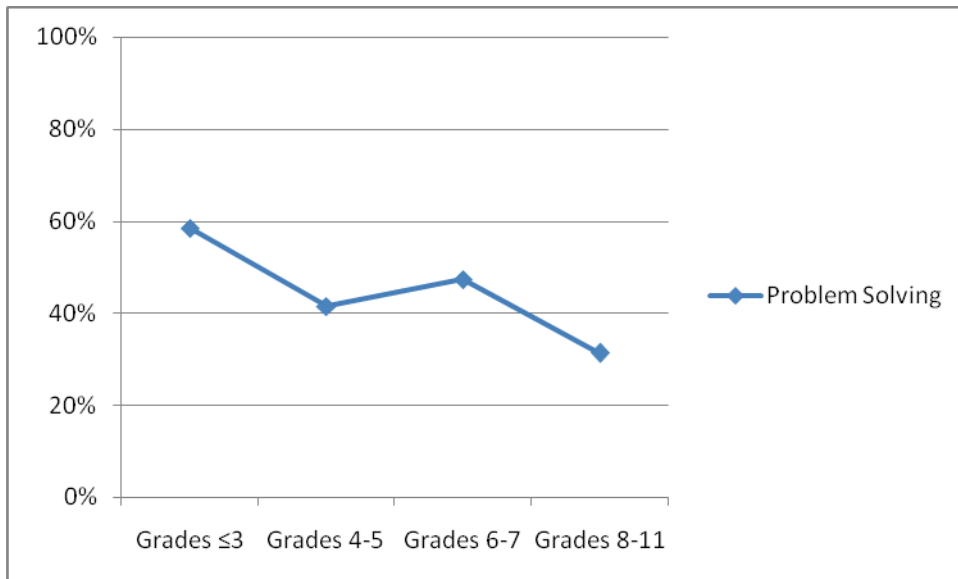


Figure 21: Problem Solving Items: Percent Correct by Grade Level

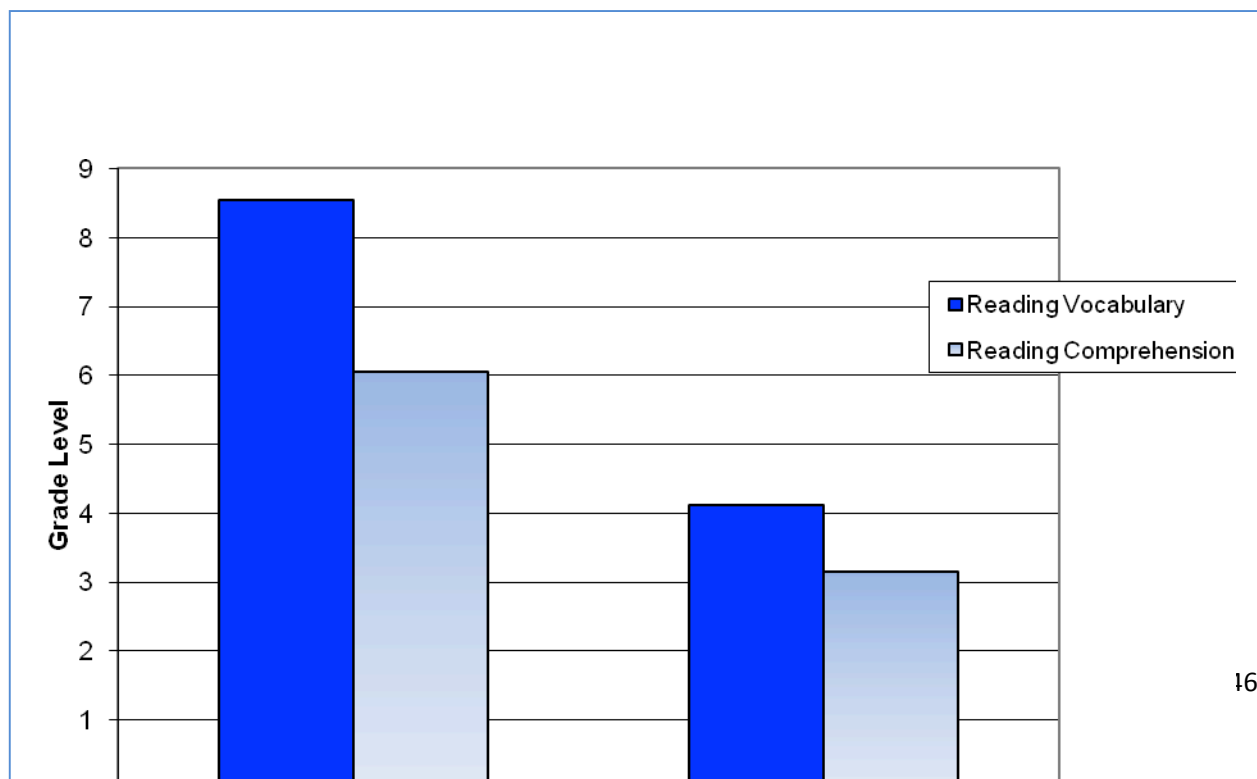


The students score 89% correct on the procedures items from grade three. This shows that the students have mastered the procedures items in grade three; these items involve addition and subtraction of whole numbers. On other procedures items across the higher grade levels, the students are scoring much lower, below 50% beginning with grades 6 and 7. The students also score much lower on the problem solving items at the third grade level than the procedures items. This result confirms that reading math problems in English results in lower scores on the third grade items.

***Performance in L2: SIFE (English ALLD) Compared to High School ELLs (English ALLD)***

We administered the English ALLD to other ELLs in order to compare the results of the SIFE group with other ELLs who have been enrolled in NYC high schools for the same amount of time. Figure 22 shows the comparison of the two groups on their performance on the Reading Vocabulary and Reading Comprehension sections of the English ALLD.

**Figure 1.** SIFE Compared to ELLs



Although the ELLs are also not performing at the expected grade level (now tenth grade) in English reading vocabulary or reading comprehension, they are performing at a higher grade level than the SIFE on both those sections. The ELLs have an average reading vocabulary grade level between eighth and ninth grade, whereas the SIFE have an average reading vocabulary grade level of fourth grade. The ELLs have an average reading comprehension grade level of sixth grade, whereas the SIFE have an average reading comprehension grade level of third grade. Reading comprehension is well below expected grade level for both groups. The ELLs have higher vocabulary scores, but still need instruction focused on higher level skills involved in reading comprehension. These scores show that SIFE are struggling more than other ELLs in acquiring English academic literacy skills, but both groups need instruction in vocabulary.

### **4.3 Classroom Observations**

#### **Summary report of SIFE classroom observations**

*ESL classes.* Analysis of the information gathered from the observations revealed a number of features, some of which appeared to positively enhance the academic literacy experience for SIFE in ESL classes, and others that had a less effective impact. Positive aspects of ESL instruction could be found in the areas of teaching materials and teaching activities. Some of these activities did not deal with academic literacy per se, but were basic ESL activities focusing on the four skills (i.e. listening, speaking, reading and writing) with continual visual-text support on the board. Examples of such activities and materials included the use of arts and crafts (e.g., Halloween mask-making) to focus attention on descriptive adjectives in a whole-class paragraph-writing exercise, and continual focus on phonics and vocabulary in meaningful contexts (e.g., breakfast foods in the U.S. and in the students' countries of origin). In such cases the activities provided vocabulary as a foundation for a culminating activity involving writing.

Moreover, in three-quarters of the observations, the students engaged in activities that supported literacy – for example, vocabulary practice and phonics practice. Also, in slightly over half of the classes observed, academic content was provided, most of which was appropriate for the level of the students in the class, whether sheltered or non-sheltered. However, in nearly half of the observed cases, the texts were not age-appropriate, even though student comprehension of written input from the teacher on the board, in texts, or on handouts, was generally good, with scaffolding. (This is in contrast to student comprehension of teacher oral input; see below.)

Another positive aspect of ESL instruction concerned creative use of some of the so-called “SIFE solutions” packages (*Read 180*, *Rigor*, *Language!*, and *Achieve3000*). It was observed that those schools possessing these literacy materials found that they could not implement them in their entirety, as suggested, due to the low proficiency of the SIFE students, so either modified them or used components from them piecemeal. These components were sometimes integrated in lesson plans focused on content. For example, one *Rigor* reader dealing with a natural-science content area (glaciers) was integrated into a lesson whose activities reinforced one another, so that the class was at once a lesson in cartographical conventions, geographic knowledge, and vocabulary reinforcement (place names, colors), and including an exercise in accessing written text (scanning for specific information) followed by some content-focused writing (information transfer).

Differentiated instruction emerged as one promising approach, though there were few cases of this. Where this was used, however, it was well designed. For example, one teacher modified the standard use of the *Read 180* program (i.e., rotating three separate groups of learners through three respective work stations) to accommodate the SIFE students: various



computer exercises dealing with phonics for (relatively) higher-proficiency students; story reading and answering comprehension questions in writing for mid-proficiency students; and book-sorting and listing activity for very low-proficiency students. Unfortunately, however, non-differentiation of materials and instruction was the rule across most of the classes observed.

Despite the positive aspects of ESL instruction noted above, there were other factors that seemed to limit the potential of the some of the above-mentioned materials and teaching strategies, and thus possibly inhibiting significant progress in English literacy development among the SIFE students. One factor may be the amount of total class time devoted to literacy activities. In the ESL classes, this ranged from zero time to 100%, with the average being 61.25%, the bulk of this devoted to low-level reading skills such as phonics and vocabulary. Qualitative analyses revealed some potential causes for low levels of involvement and learning, including poor classroom management, poorly planned or implemented group activities, and the use of too much “teacher talk.” In many classes, teaching effectiveness was limited when the teacher gave unclear directions for activities, and/or not modifying their speech to accommodate students’ low aural comprehension levels: Some teachers addressed students as though they were native speakers of English, even in cases where teachers were aware of students’ SIFE status. (In this connection, it should be noted that in three of the five schools observed, teachers were unaware of the students’ SIFE status.) Despite the fact that in all ESL classes there was a wide range of ongoing assessment strategies used – e.g., asking questions, making direct or indirect corrections of errors, recasts, and circulation among workgroups and pairs – in some ESL classes, teachers were not seemingly aware of students’ comprehension or non-comprehension of the material being taught or practiced (for example, from students’ facial

expressions or body language), with missed opportunities for using informal assessment strategies.

Transitions between activities of a lesson were sometimes abrupt and confusing for many SIFE students. Classroom management was also occasionally problematic due to selection of content. For example, during one class, the topic (Columbus) was observed not to engage several of the students from the Dominican Republic, who complained among themselves (in Spanish) that they had already been exposed to the material in their home country. Finally, and perhaps crucially, the effectiveness of scaffolding in English (i.e. using various materials to aid in students' comprehension) was uneven across the classes observed. Scaffolding of content in Spanish was for the most part either absent from the ESL classes observed, or was poorly used, especially for the lower-literacy students in the classes – in these cases the teacher's scaffolding seemed targeted, consciously or not, at the higher-proficiency students in the class.

*NLA and Spanish/bilingual content (mathematics) classes.* Regarding Spanish NLA, bilingual, and Spanish-language content instruction, certain factors appeared to promote Spanish-language learning. In contrast with the ESL classes, the amount of total class time spent on literacy activities and skills ranged from 25% to 100%, with an average of 75%, the bulk of this devoted to low-level skills such as vocabulary. As with the ESL classes, there were very few instances of differentiated instruction; one example of such instruction in a mixed class was when the SIFE group sequenced pictures of a story and discussed the story with a student teacher, while the mainstream ELLs re-sequenced pictures illustrating a story and wrote short sentences describing the pictured story scenes.

However, more prevalent aspects of instruction that appeared facilitative of Spanish literacy learning, and of content learning through Spanish, included good classroom management

through clear directions for learning activities, whether in NLA or Math. There were virtually no classroom management issues in the Spanish-language classes observed, only very transient and manageable ones. In addition, classroom materials in content classes were generally suited to SIFE-student age as well as proficiency level. As for use of group work, grouping SIFE with mainstream ELLs after teacher-fronted presentation also seemed to be facilitative of content learning in some bilingual Math and Spanish Math classes. Finally, ongoing assessment by the teacher, consisting of circulation and monitoring of individuals, pairs, or workgroups, with teacher recasting of earlier-presented material and directions, seemed to facilitate learning of content in Spanish.

Certain other activities seemed helpful for students in addressing NLA texts, for example, whole-class pre-reading activities in which vocabulary, key ideas, or (in some cases) narrative structure is pre-taught. Second, during-reading activities, in which the teacher has the class pause during oral, whole-class readings of text and asks them focused questions about content, often constituted scaffolding for acquisition of vocabulary, in that unfamiliar words in the story can be discussed in relation to the narrative context. Third, silent paired reading and whole-class reading activities allowed for practice and discussion of vocabulary and meaning. Fourth, vocabulary work and repeated listening of audiotaped NLA text readings appeared to help students make associations between sound and symbol. Finally and significantly, sufficiency of scaffolding of language and content was nearly omnipresent in the Spanish classes observed, e.g., teacher-fronted presentation followed by group work, in turn followed by whole-class sharing-out with student and teacher feedback in Spanish, as in the bilingual Math class. In this connection, student comprehension of Spanish written input by the teacher, as on the blackboard, texts, or handouts, was generally good.

***Tentative recommendations:*** In considering the following recommendations, it should be noted, as mentioned above, that this portion of the study was non-experimental; that is, not all schools had equal numbers of all class or program types (e.g., ESL, NLA Spanish, bilingual, content area, sheltered, non-sheltered.). Again, this was partly due to human-resource constraints and partly due to problems with school access for local administrative reasons. Thus, given that the observations were made of a select sample of classes, and since this qualitative portion of the study could not control for most of the numerous aspects of the teaching approaches or materials that were of interest, therefore any conclusions derived from the data should be made with some caution.

However, the observation data do suggest some tentative recommendations regarding SIFE instructional practice, which may be considered also candidates for research hypotheses in follow-up studies involving SIFE. Chief among these is the need for detailed teacher awareness of SIFE student vocabulary and aural and oral proficiency in English, which some ESL teachers seemed not to fully appreciate, apparently treating SIFE in the manner of mainstream ELLs. Such awareness by teachers has implications for a more measured rate of teacher classroom speech, grammatical complexity of teacher speech, teacher use of oral and written vocabulary, effective scaffolding of content as well as of language, clearly-indicated transitions between classroom activities, classroom management generally, and overall effectiveness of literacy activities. Related to this is effective teacher use of the informal assessment strategy of using facial expressions and body language as cues to signal a need for recasts and/or a reduction of rate of teacher speech. Finally, differentiated instruction is an approach that should be addressed in the areas of materials development and in-class implementation, not only in non-sheltered

programs in which SIFE are mixed with mainstream ELLs, but potentially in sheltered programs as well, since grade-level proficiency will differ among those categorized as SIFE.

#### **4.4 Exit Questionnaire**

At the end of Year Two, forty-four participants completed the Exit Questionnaire. The majority of the students (57%) report being enrolled in the tenth grade; the rest were dispersed from ninth through eleventh grades and one student reported being in the twelfth grade. In the sections below we have summarized the results, and – where indicated – we have included some correlations between their recorded responses on the Questionnaire and their results of the ALLD.

##### *Attitudes toward education*

A large majority of students (80-100%) had very positive attitudes toward education. Almost all responded that they believe that graduating from high school is important (98%) and that their families believe graduating from high school is important (95%). Similarly, All SIFE believe that it is important to graduate from college; almost all students (98%) report that this is also important to their families. The majority of the students believe they will graduate from high school (82%) and college (80%). The majority of SIFE report (68%) that they like going to school both in their country of origin and in the United States.

##### *Attitudes toward ESL classes*

In general attitudes were very positive toward their ESL classes. Students generally report understanding their teachers and finding their readings interesting. Only 40% of SIFE report that they generally do not understand their ESL teachers when the teachers are speaking English, nor do these students understand the readings in their ESL classes. The majority of SIFE

felt that their ESL classes helped them read (77%) and write (84%) better in English, and most (61%) felt that they read better in English now than they did last year.

### *Attitudes toward English and Spanish*

In general, attitudes were positive toward English. All SIFE believe it is important to read and write well in English and most report that their families also think it is important to learn English. Most SIFE think that it is important to spend time with friends that only speak English.

Attitudes toward Spanish were also positive, although not as positive as for English. Although 84% of SIFE believe it is important to read and write well in Spanish, only 30% report that their families strongly believe that they should have classes in Spanish while learning English. While most SIFE (61%) feel that Spanish is important to them, only 52% think it is important to spend time with friends who speak Spanish.

### *Language Exposure: Correlations with the ALLD*

Based on how students responded to questions on the amount of exposure they have had to English, we arrived at a language experience index where the higher the index the student received, the more English exposure the student has had. The total language exposure index included all of the factors listed below.

Listening and Speaking: Amount of English the student hears and speaks in the home and in the neighborhood.

Reading and Writing: Amount of English the student uses in reading and writing.

Because language input or exposure is considered so critical to language and literacy development, we examined correlations between students' Language Exposure indices and their performance on the ALLD in both Spanish and English, with the following results:

We found a positive correlation between the Language Exposure index in total (i.e. reading, writing, listening and speaking in English) and the English ALLD. That is, students that reported using more English overall also performed better on the English ALLD. There was also positive correlation between the Reading and Writing index and the Spanish ALLD. This means that the students with a higher Reading and Writing index -- those who reported reading and writing most often in English -- also achieved higher scores on the Spanish ALLD. This suggests that literacy in the native language is related to literacy exposure and use in the second language.

Aside from Language Exposure, we also compared ALLD results with attitudes toward education, self-efficacy (whether the student believes s/he will graduate from high school and/or college), and attitudes toward English and Spanish. Of all these comparisons, only attitudes toward English were significantly correlated with the ALLD. For both the Time 2 Spanish Total Literacy, attitudes toward English had a negative correlation with the Spanish ALLD score. This means that the more positive the students' attitudes were toward English, the lower their scores were on the Time 2 Spanish ALLD (Pearson correlation: Spanish Literacy,  $r = -.31$ ; Spanish Vocabulary,  $r = -.34$ ,  $p < .05$ ).

#### *Feelings about the Home Country: Correlations with the ALLD*

Of the forty-four SIFE who participated in the Exit Questionnaire, the largest group (48%) is ambivalent about whether they want to return to live in their home countries. When comparing these students' performance on the ALLD, we found that students who reported being ambivalent about returning home did significantly better on English Reading Comprehension than those who intend to return to their home countries ( $p = 0.006$ ). That is, students who plan to leave the US did not perform as well on the English ALLD, presumably because there was no

strong need to maintain English when they return home. On the other hand, those who thought they might remain here had potentially greater reason for working to improve their English skills, supporting the role that motivation plays in literacy development.

*Native Language Arts Classes: Correlations with Spanish language gains*

Four of the five schools included in the study offered some sort of native language support to the SIFE students. Three schools offered Native Language Arts classes specifically for SIFE. One of the schools that did not offer sheltered Native Language Arts classes for SIFE offered an after-school class to help students prepare for the Spanish regents. Of the forty-four SIFE that were administered the exit questionnaire, thirty-three report taking Spanish Language Arts classes.

We compared individual gains in Spanish for students who have had Spanish Native Language Arts classes (33 students) to those who have not (11 students) and found that there were no significant differences between the groups in Spanish language gains. Furthermore we found no significant differences in individual gains between students who were enrolled in sheltered (native language arts) programs and those who were not in such sheltered programs, where there could potentially have been more focused attention on their Spanish language needs. Since this was not the case, we presume that improvement in Spanish was unrelated to their school experiences.

*Future Plans and Aspirations: Correlations with the ALLD*

The forty-four SIFE that completed both the Intake and Exit questionnaires also answered questions regarding their future plans and aspirations. We divided their answers into four categories, related to what types of aspirations they had for the future: a) Professional



Aspirations (teacher, lawyer, doctor), b) Non-Professional Aspirations (firefighter, baseball player), c) Social Aspirations (travel, family) and d) Doesn't Know / No Plans.

From the Intake Questionnaire, there were twenty-five students that reported having professional aspirations; however, a year later only fourteen of those reported having professional aspirations at the time of the Exit Questionnaire.

We compared the performance on the ALLD of the fourteen SIFE that maintained professional aspirations to those who either didn't maintain professional aspirations (or never had professional aspirations) to see whether there was any relationship between their aspirations and their academic performance. We noticed that there was a tendency for the professional aspiration group to outperform the remaining twenty-seven on all sections of the ALLD in both Spanish and English. Strikingly there was a tendency for this group to have higher scores on all sections of the ALLD, although we only found the difference to be significant between the groups on the Time 2 Spanish Literacy overall ( $p < .05$ ) and the Time 2 English Math section ( $p < .05$ ). It is possible that other scores would have reached significance if we had larger groups, further supporting the role that motivation and expectations have on literacy development.

### *Success in the United States*

When SIFE were asked if they thought it would be easy to be successful in the United States, 25% said "no", 39% said "maybe" and 36% said "yes". This means that 75% thought it would be possible to be successful in the United States. The reasons they gave were that they believed that if they worked hard, studied and were motivated there would be an abundance of opportunities to succeed. The 25% who thought it would not be easy to be successful cited the need for more skills in English as the primary obstacle in achieving success. There were no

significant differences in scores at time 2 for the SIFE that thought it would be difficult to be successful in the US compared to those who thought it would or may be easy to be successful.

## **5. Conclusions and Recommendations**

Our two-year study of 98 SIFE revealed the following: While these students have typically developing oral language skills in their native language, they are, in that same language, severely under-developed in academic skills, in particular academic vocabulary and reading comprehension. The skills that are in most need of reinforcement are academic vocabulary beyond the 5<sup>th</sup> grade, and reading comprehension beyond the 3<sup>rd</sup> grade. Furthermore, this group needs to develop higher-level text comprehension skills, such as inferencing and critical thinking skills.

Math skills, as tested in the native language, also need to be strengthened but do not seem to be dependent on language ability, as procedural and problem-solving skills were equally wanting in this group. On average, they were 6 years behind expected grade level (grade 9 and 10).

After 2 years of English instruction, SIFE were still far behind regular ELLs receiving the same type of instruction. This is most likely a consequence of SIFE (but not ELLs) lacking literacy skills in their native language. SIFE thus have ‘triple the work’ needed for academic success:

1. Unlike other ELLs, they would benefit from furthering their native language literacy skills to help develop L2 literacy;
2. Unlike other ELLs, they need to develop the background knowledge prerequisites for learning grade level academic content
3. Like other ELLs, they must acquire L2 English language and literacy skills.

Finally, school experience and academic/background knowledge and skills are severely limited for these students. Based on the above, we make the following recommendations:

1. Provide an additional year of schooling, prior to secondary school, to “frontload” as many skills and as much knowledge as possible in preparation for entrance into mainstream secondary school classes.
2. Use native oral language skills to build academic language in the second language (L2) English.
3. Focus on the learning of English language and literacy skills in all content area classes through the use of native language support and specialized and differentiated instruction geared to meet the needs of a very diverse student group.
4. Develop and implement a curriculum to build academic and literacy skills and background knowledge and accelerate the learning needed for upper level school readiness; included in this framework is a focus on critical thinking skills and the development of good academic and social habits to help in the school and cultural adjustment process.

Given that even with one year of regular instruction, SIFE showed an average gain of 1.5 grades in native language vocabulary and reading comprehension, and an average gain of 1 grade in Math, we are confident that even greater gains can be made with the type of enhanced and accelerated instruction proposed here.

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## **Appendices**

Appendix 1.: Development of ALLD

Appendix 2: Outline of ALLD to be distributed to NYC schools

Appendix 3: RISLUS Syntax Test

Appendix 4: Spanish ALLD Pre-test Grade Level Charts for SIFE

Appendix 5: English ALLD Grade Level Charts for SIFE

## **Appendix 1: Development of ALLD**

As of the start of this study, there were no appropriate assessments for adolescent ELLs with low native language literacy. We began our pilot study by consulting a number of existing assessments. We paid close attention to the following concepts: 1) inclusion of assessments of pre-literacy and literacy, and content areas of math, science and social science; 2) assessment of skills from a range of grade levels;<sup>8</sup> 3) equivalence of versions in Spanish and English (since we planned on giving an English version of the diagnostic); 4) group administration, so that the New York City school system could implement the assessment successfully with enough time and resources for the testing of all SIFE entering the school system.

None met all of the above requirements. During the pilot, we administered the Bateria III (Riverside), an individually administered assessment which met all of the requirements except for being group administered. We piloted this assessment with twelve SIFE students, and based on their results, we reconsidered the other assessments we had consulted, looking for a group assessment. We adapted a US standardized Spanish language test published by Harcourt, the Aprenda Achievement Test Series, Third Edition (from this point forward, referred to as the Aprenda III), into an appropriate assessment for SIFE. The Aprenda III met all of the original requirements, except that it is not a cumulative assessment. The Aprenda III consists of a group of tests designed for students in Kindergarten through grade twelve, with separate test booklets for each grade level. In order to meet the criteria of a cumulative assessment, we took items from the Aprenda III test booklets from grade levels one through seven and included them in the

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<sup>8</sup> Because our research goal is to determine the characteristics of SIFE, administering an assessment from one grade level would not give us the information we need about SIFE. If we administered a ninth grade level assessment and the students did not pass, we would only know they are not at the ninth grade level, but we would not know at which level they are (i.e. it could be eighth grade or second grade).

ALLD Pre-test. Our selection of grade levels to include was based on the results of our pilot study.

During Year Two of the study the students were given the Spanish ALLD Post-test in order to measure gains in native language skills over one year. We modified the ALLD Pre-test after performing item analyses, omitting the items with the least efficacy. The Spanish ALLD Post-test consists of many of the same test items as the pre-test, but includes fewer items from each grade level and is reordered. The Spanish Post-test ALLD also has additional grade levels in the literacy section. For the Post-test we did not administer the basic literacy section, but did administer the reading vocabulary, reading comprehension, language and math sections.

The English ALLD is taken from the Stanford Achievement Test Series, Tenth Edition, which is the English equivalent of the Aprenda III. As we administered the English ALLD to our comparison groups whom we expected to perform well on the assessment, we included up to grade eleven in the English ALLD.



## **Appendix 2: Outline of ALLD to be distributed to NYC schools**

The version of the ALLD to be distributed to NYC schools is slightly different than the versions of the ALLD we report on in this report. The ALLD to be distributed went through more edits, with feedback from both the DOE and the publisher of the standardized tests which the ALLD was drawn from (Harcourt, which is now Pearson). The outline below has all changes from the original in brackets, and describes the English and Spanish ALLD.

Description of English and Spanish ALLD to be distributed to NYC schools:

Book One: Pre-literacy Section

[Similar to the Pre-literacy section of the Spanish ALLD Pre-test, but with fewer items.]

Book Two: Literacy and Math Sections:

Word Study: Grade level TK [Added in the Spanish ALLD; items written by our research team]

Reading Vocabulary: Grade levels three through eleven [Added higher grade levels]

Reading Comprehension: Grade levels two through eleven [Added higher grade levels]

Language: Grade levels three and four

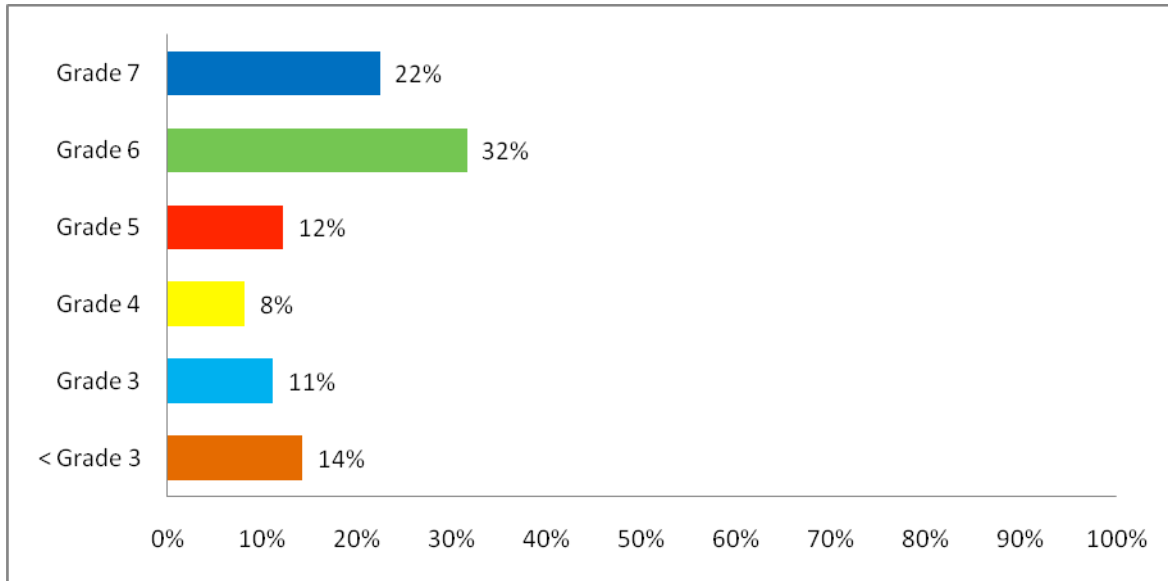
Math: Grade levels three through ten [Added higher grade levels]

### **Appendix 3: Syntax Test**

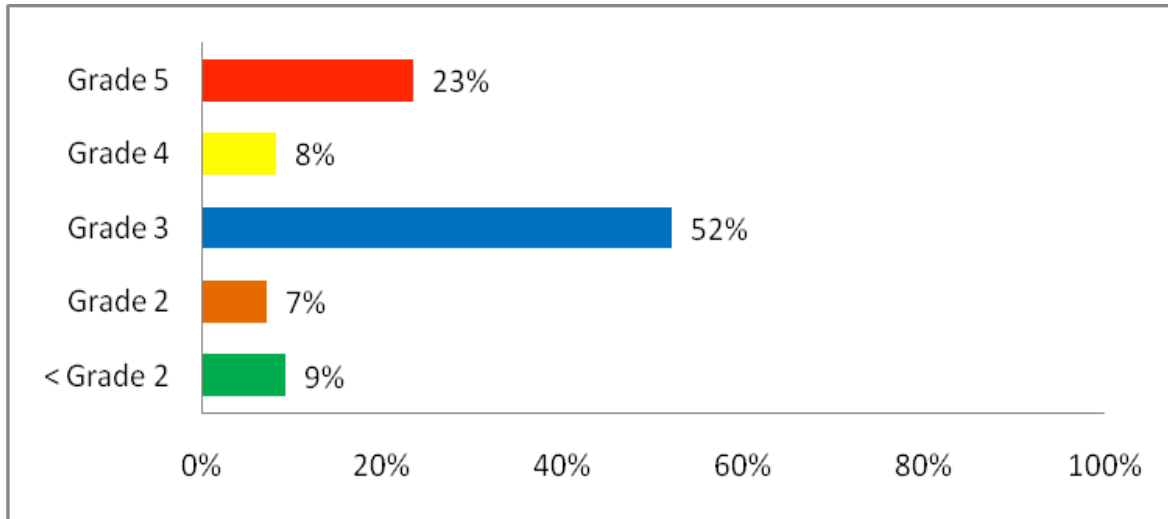
- a) Subject coordination: The bear and the dog chase the cat.
- b) Relative clause: The bear who touches the dog dances.
- c) Temporal adverbial clauses: After jumping, the dog kicks the cat.
- d) Subjectless subordinate clauses: The cat tells the bear to jump.

### Appendix 4: ALLD Spanish Pre-test Grade Level Charts

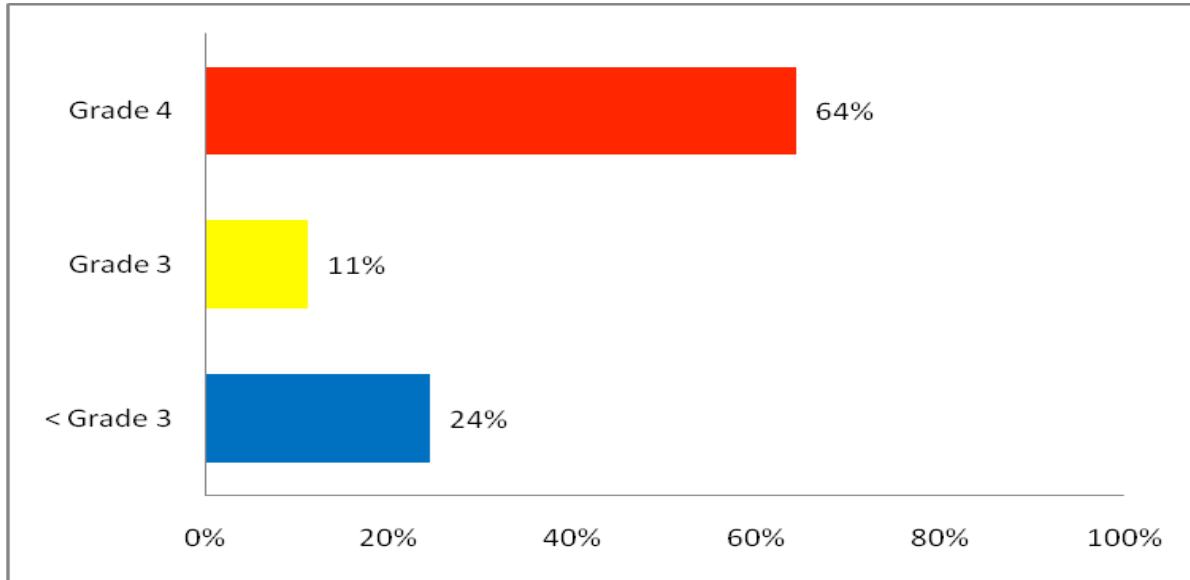
Vocabulary Results: Percentage of Students Scoring at Each Grade Level



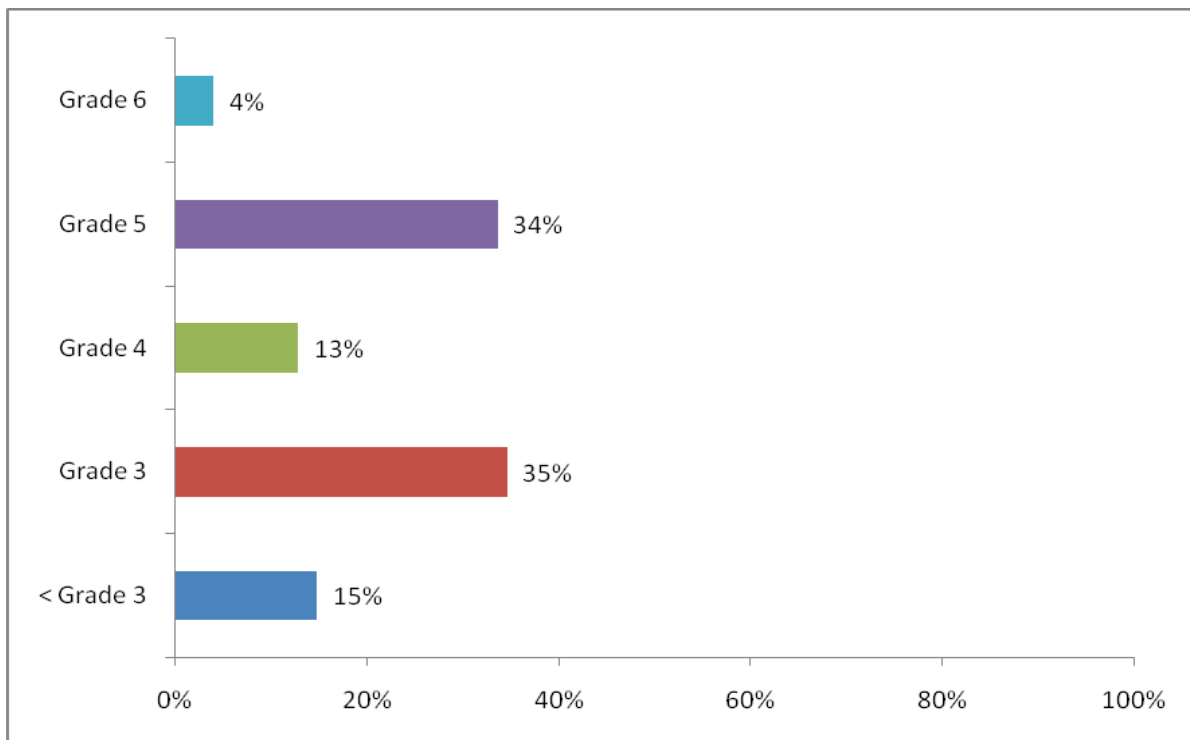
Reading Comprehension Results: Percentage of Students Scoring at Each Grade Level



Language Results: Percentage of Students Scoring at Each Grade Level

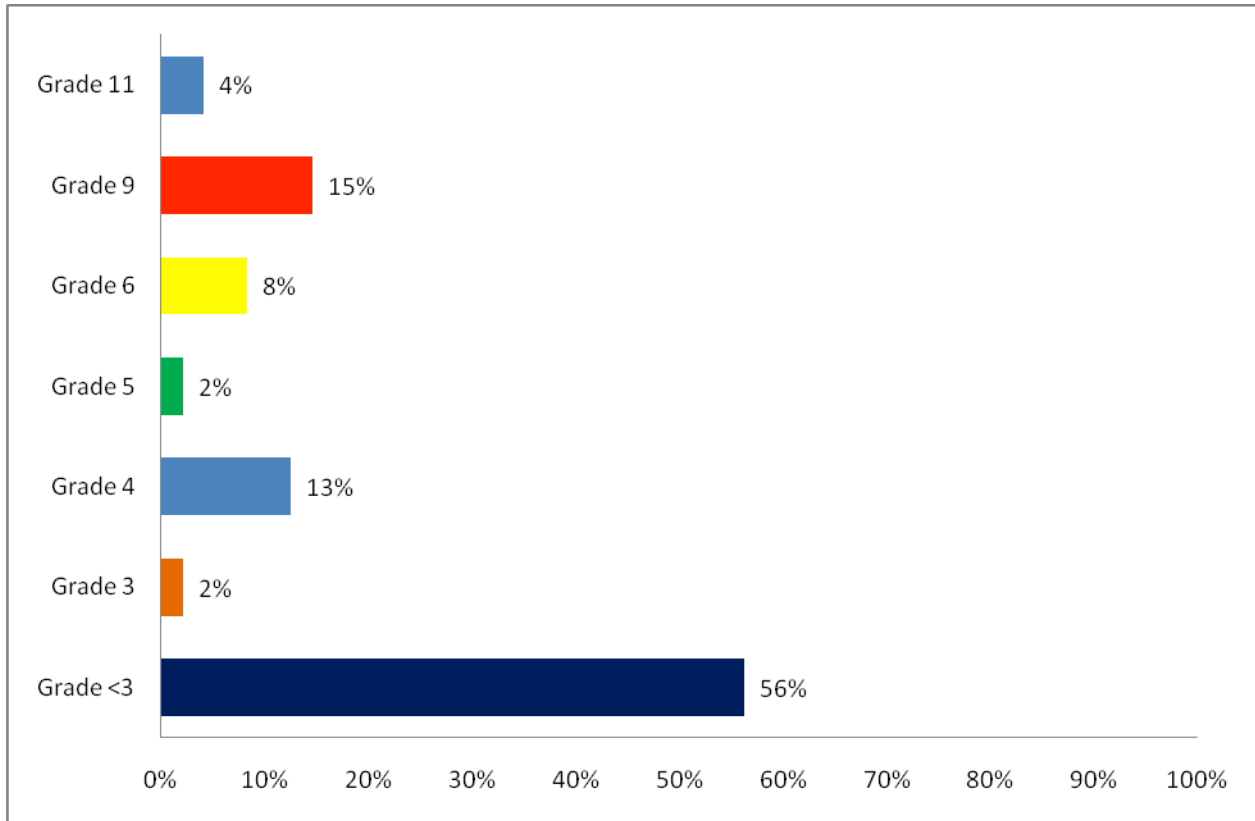


Math Results: Percentage of Students Scoring at Each Grade Level



### Appendix 5: English ALLD Grade Level Charts for SIFE

English Reading Vocabulary Results: Percentage of SIFE Scoring at Each Grade Level



English Reading Comprehension Results: Percentage of SIFE Scoring at Each Grade Level

