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LESLLA Symposium Proceedings

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INSTRUCTION, LANGUAGE AND LITERACY: WHAT WORKS STUDY FOR ADULT ESL LITERACY STUDENTS

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1 Introduction

Adult English as a Second Language (ESL) literacy students lack literacy skills in their native language as well as English communication skills. These learners face the challenge of developing basic skills for decoding, comprehending, and producing print, in addition to learning English. The purpose of the *“What Works” Study for Adult ESL Literacy Students* was to identify ways in which adult ESL teachers can provide effective instruction to improve the English language and literacy skills of ESL literacy students. The study also examined attendance patterns of adult ESL literacy students and class, instructional and student factors related to attendance; and provided descriptive information about adult ESL literacy students, their classes, teachers and the instruction they receive. The study was supported by the U.S. Department of Education’s Office of Vocational and Adult Education and the Planning and Evaluation Service.

2 Study Purpose

Since little is known about adult ESL literacy students, one of the purposes of the *What Works Study* was to present a profile of these adults, their backgrounds and characteristics, and paint a picture of their participation in state and federally funded adult ESL programs. However, the goal of this study was not merely descriptive: it also sought to identify “what works”—the instructional activities that help to develop and improve ESL literacy students’ English literacy skills and their ability to communicate in English. The study’s main research questions were:

- What are the characteristics of adult ESL literacy students? What are their English literacy and language abilities?
- What types of class arrangements and instructional approaches do teachers of adult ESL literacy students use?
- What classroom and instructional variables are correlated with improving adult ESL literacy students’ literacy and language development?
- Does the relationship of class and instructional variables vary according to adult ESL literacy students’ initial literacy level, native language, age or other characteristics?
- What student, program and instructional variables relate to class attendance and persistence of adult ESL literacy students?

- What changes in program design, resources and instruction are needed to implement the instructional approaches most highly correlated with improved English literacy and language development?

The *What Works Study* is the first of its kind: very few research studies have examined the effectiveness of different types of instruction for ESL students, and *no* national study has ever been conducted that linked “educational inputs,” such as teaching strategies, with “educational outcomes” (increases in test scores) for adult ESL literacy students.¹⁶

3 Methodology

The data collection for the project was from October 1999 through August 2001 in 38 classes from 13 adult ESL programs in seven states (Arizona, California, Illinois, Minnesota, New York, Texas and Washington) and had a final sample size of 495 students. The sample included two cohorts of students who were followed from the time of entry into class for nine months. Onsite data collectors assessed students at entry (initial assessment), approximately three months after enrollment (second assessment) and about nine months after enrollment (final assessment), regardless of how long the student remained enrolled. The final assessment allowed us to correlate the total amount of instruction received to student learning and allowed an examination of the persistence of learning gains after enrollment. Data collectors also observed each class an average of nine times over the data collection period and used the guide to code instructional activities with the guide.

3.1 Measuring Instruction: Classroom Observations

Teaching adult immigrants and refugees to become proficient speakers of English *and* to be skilled readers is a complex endeavor and trying to develop a framework for capturing this work was quite a challenge. Teaching ESL Literacy requires a dual effort comprised of instruction in (1) the *language skills* necessary to communicate in English, including subskills related to sentence structure, pronunciation, word endings, tenses; and (2) the *literacy* or reading and writing skills necessary to process print and gain meaning from the written word. We developed a classroom observation guide as a formal way to code and quantify these activities. Guided by theory of literacy and language development and our preliminary class observations, we outlined the learning tasks and teaching strategies associated with both the literacy development and second language development models and developed codes that described the components of learning and instruction associated with them.

The instructional activities measured through the observation guide were quantified, using percent of observed time on the activity and observer ratings of teachers' use of instructional strategies. We created two categories of measures: *instructional emphasis*

¹⁶ This paper focuses on the findings of instructional variables related to student learning gains measured by standardized assessments. For more detail on the descriptive analyses, results of qualitative assessments, and analyses of attendance patterns, as well as a fuller discussion of the statistical analyses and the research literature underlying the study, see the final report of the study (Condelli, Wrigley, Yoon, Cronen & Seburn, 2003).

measures, which describe the content of the instruction in terms of the language or literacy focus and *instructional strategies*, the activities teachers used to organize and teach the lesson. The following instructional variables were used in the analyses.

While these strategies and emphases characterize how instruction was provided, they were not mutually exclusive or independent of each other. In fact, teachers that used one set of strategies often used combinations of them over time or within a single class session.

(1) *Instructional Emphasis Variables*

- Literacy development emphasis: Main focus on reading and writing development.
- ESL acquisition emphasis: Main focus on speaking, listening, fundamentals of English.
- Functional skills emphasis: Main focus on functional literacy (e.g., interpreting forms, labels, using money, maps).
- Basic literacy skills emphasis: Main focus on print awareness, fluency and basic reading skills.
- Reading comprehension emphasis: Main focus on comprehension strategies.
- Writing emphasis: Main focus on writing fluency, writing practice.
- Oral communication emphasis: Main focus on speaking and listening practice.

(2) *Instructional Strategies Variables*

- Varied practice and interaction: Teachers provide students with opportunities to learn in a variety of ways and modalities (e.g., speaking, reading, writing) and by having students interact with each other.
- Open communication: Teachers are flexible and respond to students' concerns as they arise; ask for open-ended responses; support authentic communication.
- Connection to the "outside": Teachers link what is being learned to life outside classroom and bring the "outside" into the class through use of field trips, speakers, and real-life materials.

Another instructional strategy we coded was the teacher's use of students' native language in instruction. We constructed a scale of the use of this instructional strategy by first conducting a factor analysis of the four measures we used of how native language use was incorporated into classes: to explain concepts, give directions, for students to ask questions and to do written assignments. The analysis identified only one factor, which incorporated all of the measures. We combined these four items into a single index representing the average proportion of use of the four native language instructional activities in each class. The scale ranged from zero (use of no activities) to one (use of all four activities). We then averaged the scores across observations.

3.2 *Measuring Student Learning: Outcome Measures*

One of the biggest challenges in the *What Works Study* was to select and develop assessments to measure the English reading and writing skills of the students in the study, along with their English communication skills. Assessment in adult ESL is complicated by the fact that it requires measurement of skills in two domains: English language proficiency and literacy ability. Knowledge of English is interwoven with the ability to process print. To assess students' knowledge of English, regardless of their ability to read and write, we needed an assessment that measured speaking and listening and did not require reading instructions or finding answers on a printed sheet of paper. Conversely, to find out if students had some ability to read and write in English, we had to make sure that students understood the reading task at hand and were not confused by the language in the instructions. Since the language used in the instructions of a task is often more complicated than the task itself, we gave the instructions orally in the students' native language.

Our research design required using standardized tests, but we wanted to supplement these tests with richer assessments that could measure the type of subtle real life learning that most adult ESL classes provide. To capture the complexities of learning a foreign language, we recognized the need for a multi-dimensional, multi-method approach to assessment. Consequently, the study measured students' English language and literacy development using a battery of standardized and non-standardized tests, selected after a comprehensive review of all assessments available for low-level adult ESL learners. The battery measured reading, writing, speaking, and listening skills. The standardized tests used were:

- The Woodcock-Johnson Basic Reading Skills Cluster (WJBRSC) and Reading Comprehension Cluster (WJRCC), which measured basic reading and comprehension abilities;
- The oral Basic English Skills Test (BEST), measured English speaking and listening;
- Adult Language Assessment Scales (A-LAS) Writing Assessment measured writing ability.

The study also included an interview about student literacy practices in both English and the native language and a reading demonstration task, which measured student English fluency and comprehension through reading of authentic materials. Each assessment was conducted individually and data collectors gave instructions for each test, and conducted the literacy practices interview, in the learner's native language.

4 *Study Findings*

4.1 *Students in the Study*

There were more than 30 languages represented among the students in the *What Works Study*. However, similar to adult ESL students nationwide in the U.S., native Spanish-speakers predominated and approximately 68% of the students in the sample reported Spanish as their first language. Most students in the sample were from Mexico (59%), or from other Spanish-speaking countries (e.g., Guatemala, Dominican Republic, and

Honduras - 8%). A substantial portion of our sample also came from formerly non-literate cultures, including Somalia (10%), and Hmong-speakers from Laos (8%). The average age of students in the study was 40; they were 72% female and had an average of 3.1 years of schooling in their home country. Table 1 summarizes the students in the study by language group and prior education.

Table 1: *Education in home country, by language background*

Student Language Background	Number of Students	Mean Years of Education in Home Country	SD of Mean Years	Percent of Students with No Formal Education
All participants	490	3.1	2.8	33.1
Spanish - Mexican	285	4.0	2.7	17.9
Spanish - non-Mexican	43	3.8	2.2	11.6
Hmong	38	0.3	0.9	81.6
Somali	47	1.7	2.9	66.0
All others*	77	1.8	2.5	57.1

Note: Prior education data were missing from five students in the final study sample of 495.

*More than 30 other languages are included in this group.

4.2 Reading Ability

The WJR reading battery, the Basic Reading Skills Cluster (BRSC), includes the Letter-Word Identification, and Word Attack (a measure of knowledge of sound-symbol relationships, tested by the ability to read nonsense words) subtests. The Reading Comprehension Cluster (RCC) includes the Passage Comprehension, and Vocabulary subtests. On each of the subtests, items get increasingly more difficult and testing is discontinued after the respondent answers a certain number of consecutive items incorrectly (six or four, depending on the subtest). Table 2 shows student scores, presented as number correct and educational grade level equivalents, on these tests at the three assessment times.¹⁷

¹⁷ Table 2 and subsequent tables reporting assessment results provide the number of students who took each assessment and their mean performance at each time period. There were no statistical differences in the characteristics of students who took each assessment.

Table 2: Mean student scores for the Woodcock-Johnson Subtests for Reading Skills (WJR)

WJ-R Subtest	Initial Assessment (n=481)		3 Month Assessment (n=341)		9 Month Assessment (n=212)	
	Avg. Score	Avg. Grade Equivalent	Avg. Score	Avg. Grade Equivalent	Avg. Score	Avg. Grade Equivalent
Letter-Word	22.6	1.5	25.3	1.7	28.2	2.0
Word Attack	5.8	1.6	6.8	1.8	9.3	2.0
Passage comprehension	4.5	1.1	5.3	1.2	6.8	1.3
Reading vocabulary	2.1	0.9	2.7	0.9	4.3	1.2

Note: Maximum possible ranges for each of the subtests differ and are as follows: Letter-Word 0 to 57, Word Attack 0 to 30, Passage comprehension 0 to 43, and Reading Vocabulary 0 to 69.

4.2.1 Letter-Word Subtest

Students' Letter-Word Activity scores initially ranged from 0-56, averaging 22.6, indicating that students demonstrated reading skills approximately halfway between a first and second grade level. Approximately 30 percent of students initially scored at the kindergarten level or below. Although students were often able to identify drawings (e.g., chair, book), individual letters, and short words such as *in*, *dog*, and *as*, most multi-syllabic words and words with irregular spellings were very difficult for them. Students' scores increased significantly on this measure over time. By the final assessment, student scores ranged from 2-56, and averaged at the second grade level.

4.2.2 Word Attack Subtest

Initially, students were able to correctly pronounce 5-6 nonsense words (ranging from 0-29 out of a possible 30), indicative of performance at the 1.6 grade level. Although some students were able to correctly pronounce a few of the easier "words," such as *zooz* and *lish*, almost all of them were unable to correctly pronounce the more difficult "words" like *thrept*, *quantric*, and *knoink*. By the final assessment, students were, on average, able to correctly pronounce 9-10 nonsense words correctly (ranging from 0-30) and were scoring at the second grade level. Student's scores increased significantly on this measure over the course of the study.

4.2.3 Passage Comprehension Subtest

At the beginning of study, students were, on average, performing at the first grade level (1.1), with scores ranging from 0-18. Some students were able to match words to the pictures (e.g., *red table*, *little dog*), as well as complete the first few sentences (e.g., *The cat is in the _____*, accompanied by a drawing of a cat in a hat). However, once the sentences advanced beyond the first grade reading level, students had difficulty reading them (e.g., *After a few days, the baby bear could crawl over his _____*, along with a drawing of two bears). Although there was a statistically significant increase in student performance

over the course of the study, the final assessment average grade equivalent increased only slightly to 1.3 (ranging from 0-22).

4.2.4 Reading Vocabulary Subtest

This subtest of the Woodcock-Johnson consists of two parts. For one part, students had to read and provide synonyms for a list of words, for the other parts they had to provide antonyms. Although initial scores ranged from zero to 32, over 53 percent of the students were unable to complete any portion of either task on this subtest. The average raw score was 2 out of a possible 69, which was considered slightly below the first grade reading level at 0.9. Only a few students were able to provide synonyms or antonyms for words such as *mom*, *small*, and *go*.

At the nine-month assessment period the average score rose to 4.3 with a grade equivalent of 1.2 and a range of 0-35; however, over 37 percent of students were still unable to complete any of this subtest. Although there was statistically significant student improvement over time on this subtest, these subtests were clearly too difficult for the ESL literacy students in our study. Learning synonyms and antonyms of words is a school-based task with which literacy students are unfamiliar. In addition, many of the words on the subtest were not high frequency words that ESL learners would be more likely to recognize.

4.3 Writing Ability

The ALAS Writing Test (ALAS-W) consists of two sections, "Sentences in Action" and "Adventures in Writing." For each of the five items of "Sentences in Action," students are asked to write a sentence in response to a target drawing. Sentences are scored on four-point scales, which ranged from zero, indicating no response or an unintelligible response, to three, indicating an appropriate response with no syntactical or mechanical errors. The "Adventures in Writing" section, which involves writing an essay on topics such as "My Best Day" or "My Favorite Sport," is scored on a six-point scale, ranging from zero to five, where "0" indicates no response or a response written completely in another language, and "5" indicates an appropriate, well-organized response in English that contains few errors.¹⁸

Both sections of the ALAS-W presented a challenge for students. Most were able to write few, if any, English words. Words that they were able to provide included nouns and pronouns, such as *he*, *she*, *table*, *party*, *dinner*, etc. It was not uncommon for students to write partially or even exclusively in their native languages. Typically, Hmong students returned blank test forms.

The average raw score on the "Sentences in Action" section initially was 2.9 with a range of 0 to 14 out of a possible score of 15. This average indicates that responses were quite likely to contain errors in both mechanics (capitalization, punctuation, spelling) and syntax. In addition, responses did not usually contain a subject and/or predicate. At the nine-month testing period the average score had increased to 4.3 with a range of 0 to 11.

¹⁸ We trained three project staff members to score all ALAS writing assessments, using procedures described in the ALAS manual. Our raters achieved over 90 percent agreement on ratings.

The average score for the “Adventures in Writing” section initially was .76 with a range of 0 to 4, out of a possible score of 5. This average indicates that responses were likely to be insufficient or completely blank, written completely in another language, mixed with English and the native language, and/or containing isolated words, phrases or dependent clauses with no complete sentences. By the nine-month assessment, the average score increased only slightly to .81 with a range of 0 to 4. This small increase may be indicative of a lack of discrimination by this assessment to detect learning gains in low-level students such as those in the study.

Scoring the ALAS-W includes converting the combined scores of the “Sentences in Action” and “Adventures in Writing” sections into test-defined ESL competency levels. These levels range from 1, indicating “Low Beginner,” to 5, indicating “Competent.” Students in the study initially tested at an average ability level of 1.5, ranging from 1 to 4 out of a 5 possible competency levels. The average nine-month score was 1.6 with the same range.

Table 3 illustrates what students scoring of the low beginner level through high intermediate level could actually write in the “Sentences in Action” section. At the lowest level (low beginner), the student was unable to write comprehensibly. However in this case, some phonemic awareness is evident by the phrase “I go tek dogh,” an apparent reference to the dog being walked in the drawing. In the high beginner example, the student was able to write comprehensibly, albeit with poor spelling and grammar. The student at the low intermediate level wrote an accurate and comprehensible sentence that was mechanically flawed, showing poor spelling for example. At the high intermediate level, the student was able to write a comprehensible sentence with no mechanical errors.

4.4 *English Communication Skills*

The BEST Oral Interview assesses ESL students’ English conversational skills. The test requires a respondent to engage in a simulated conversation, providing name and address, basic personal information and discussing photographs and drawings. Each test item is scored on one of three scales according to the type of skills it measures: listening comprehension, communication, or fluency.¹⁹ The combined raw scores from the BEST Oral interview were converted to student performance levels (SPLs) in accordance with the BEST test manual guidelines. These levels range from Level 0 (No ability whatsoever -- raw score of 8 or less), to Level III (functions with some difficulty in situations related to immediate needs -- raw score 29-41), up to Level VII (can satisfy survival needs and routine work and social demands -- raw score greater than 65).

Table 4 presents the percentages of students scoring within each SPL. Initially, about 70% of students scored at level 2 or lower and over 80% of the students scored at level 3 or lower. This assessment showed significant student improvement over time; by the nine-month assessment, only 40% of the students scored at Level 2 or below and over 30% scored at Level 4 or above.

¹⁹ The BEST Oral Interview also includes measures of pronunciation and a reading and writing score, which we did not use in the study.

Table 3: Samples of scored "Sentences in Action" writing





<p>Example of Score 0 (Low Beginner)</p>  <p>1 Nly los Hnag neeg Txom dev Savve I go tek dogh</p>
<p>Example of Score 1 (High Beginner)</p>  <p>5 BABE IS SIK.</p>
<p>Example of Score 2 (Low Intermediate)</p>  <p>2 the children play at the beach</p>
<p>Example of Score 3 (High Intermediate)</p>  <p>3 the father is reading a book to your children</p>

Table 4: Frequency and percent of Student Performance Levels (SPLs) by time periods for the BEST Oral Interview

Student Performance Levels (SPLs)	Initial Assessment (n=447)		Second Assessment (n=314)		Final Assessment (n=212)	
	Frequency	%	Frequency	%	Frequency	%
Level 0	115	25.7	29	9.2	17	8.0
Level I	77	17.2	47	15.0	17	8.0
Level II	119	26.6	95	30.2	52	24.5
Level III	65	14.6	61	19.4	55	26.0
Level IV	32	7.2	33	10.5	27	12.8
Level V	9	2.0	15	4.8	17	8.0
Level VI	14	3.1	20	6.4	14	6.6
Level VII	16	3.6	14	4.5	13	6.1

4.5 Student Attendance Measures

The study also examined attendance patterns of adult ESL literacy students, using four measures of attendance:

- *Total hours* total number of instructional hours attended;
- *Total weeks* total number of weeks attended;
- *Rate of attendance* proportion of total hours attended out of hours possible to attend;
- *Intensity* average number of hours attended per week.

Each measure of attendance provides us with different information about student attendance patterns. *Total hours* gives us the amount of time the student was in class and exposed to instruction, regardless of how many hours the class was scheduled or how many weeks the student attended. It also does not adjust for how regularly the student attended. *Total weeks* informs us of the length of time a student attended class, regardless of how many hours per week the class was scheduled, how many hours the student attended or how often the student attends. It is a type of persistence measure. *Rate* measures how often the student attended, regardless of how many hours the class was scheduled. It is a measure of how often the student took advantage of the class time offered and may reflect student motivation to attend. Finally, *intensity* is a measure of how much attendance the student had in a given time. It is a measure of the dosage or concentration of attendance time. Intensity is dependent on how the class is scheduled—the amount of class time offered. Consequently, besides measuring student attendance behavior, intensity is a good measure for comparing the differences among classes that spread small amounts of instruction over a long period of time to classes that offer large amounts of instruction in shorter time periods.

Students in the study attended an average of about 16 weeks and 128 total hours. They attended about two-thirds of possible time (rate of 0.64) and just under an average of seven hours per week. Table 5 shows the means on each measure.

Table 5: Overall attendance of adult ESL literacy students (N=495)

	Mean	Median	SD
Total Hours of Attendance	128.7	106.0	94.3
Total Weeks of Attendance	16.2	16.0	8.1
Rate (hours attended/possible hours)	0.64	0.66	0.19
Intensity (hours per week)	6.9	6.3	3.3

4.6 Student, Class and Instructional Variables Related to English Language and Literacy Growth

The study examined the relationship of instructional content, instructional strategies, attendance, student characteristics, teacher characteristics and class variables on student outcomes using a complex statistical technique, latent growth modeling, using a hierarchical linear model (HLM) framework (Bryk & Raudenbush, 1992). The latent growth modeling technique is designed to capture the underlying trajectory of growth that takes places over time. The technique works by using each individual student's data to draw a single, underlying growth trajectory that fits a straight line or smooth curve. The statistical parameters underlying the line or curve can then be used to describe students' literacy growth in terms of their initial status, or where they started, and the rates and direction of change. It also allows us to predict the effect of variables in the model that relate to growth. In other words, using this technique, we can estimate where students were on the measures when they enrolled and how fast they grew on the measures over the course of their class participation. We can also relate this growth to specific variables we use in the model to predict which ones relate to faster (or slower) growth. Findings for the reading and oral language assessments using this technique are summarized below.

4.6.1 Variables Related to Growth in Basic Reading Skills (WJ-BRSC)

The WJ-BRSC assessed students' basic reading skills, including letter-word identification and knowledge of phonics. The analysis also identified several student, class and instructional variables that were significantly related to linear growth, as well as a quadratic effect.

Student Variables

Two student variables, age, and years of formal schooling, were significantly related to growth in basic reading skills. Age was negatively related to linear growth rate, meaning that older students acquired these skills more slowly. Even though younger students started lower on this measure (as shown by the initial status), they made up for their initial disadvantage in basic reading skills by learning faster.

Students' years of formal schooling in the home country was also positively associated with linear growth rate. Students with more education both started at a higher level and learned faster than their less educated peers. Since years of education may reflect students' native language literacy, this result seems to support the theory that students' literacy skills in their native language assist them in developing English literacy. However, students' years of formal schooling in the home country became less important over time. This means that the initial positive effect of formal schooling in

the native country on linear growth fades over time. While prior education initially helps ESL literacy students acquire basic reading skills, this initial advantage does not help later.

Students' oral English skills, as measured by the BEST, were also positively - if marginally significant - related with the linear growth in basic reading skills. This finding may indicate that some proficiency in oral English language skills may work to assist learning of basic reading skills.

Class Variables

The only class variable related to growth in basic reading skills was the length of the scheduled hours per week of class meeting time. Students in classes with longer scheduled hours showed less growth than students in classes with fewer scheduled hours. Other things being equal, including students' attendance and persistence, the longer the class's weekly scheduled meeting hours, the slower the rate of students' learning in basic reading skills.

Instructional Variables

The use of the instruction strategy we called "connection to the outside," where teachers brought real world materials and examples into their instruction, had a positive effect on the linear growth in basic reading skills. The use of this strategy was effective in raising the level of students' mastery in basic reading skills. Figure 1 demonstrates the effect of the connection to the outside strategy on adult ESL literacy students' growth in basic reading skills. For this illustration, we held the other variables constant, using their mean value. The top line illustrates a high use of the strategy and the bottom line shows low use. The increasing steepness, or slope, of the curves illustrates the effect of this instructional variable. As can be seen, the model predicts that all else being equal, the use of the connection to the outside strategy results in an increase in basic skills development over time.

Variables Related to Growth in Basic Reading Comprehension (WJRCC)

The latent growth modeling analysis for the reading comprehension measure, the WJRCC, showed an average steady linear growth over time of about 1.2 points per month. We found statistically significant linear and quadratic growth and to students' initial status at enrollment in class. The model identified significant student, class, attendance and instructional measures related to growth in reading comprehension.

Student Variables

We examined within the model the relationship of students' basic reading skills at entry in class on growth in reading comprehension. The analysis revealed both a significant negative linear growth and a positive quadratic growth curve. We interpret this finding to mean that the reading comprehension of students with higher BRSC scores at class entry grew very little at first, but over time this growth accelerated more dramatically. In contrast, students with little or no basic reading skills at entry showed a small amount of growth initially, but then failed to improve their reading comprehension skills over time. In other words, adult ESL literacy students who entered class with some basic reading skills showed significant growth in reading comprehension compared to students who had little or no basic reading skills, but this took time to

appear. Initially, students with low basic reading skills improved slightly, but then later showed no growth in their reading comprehension skills.

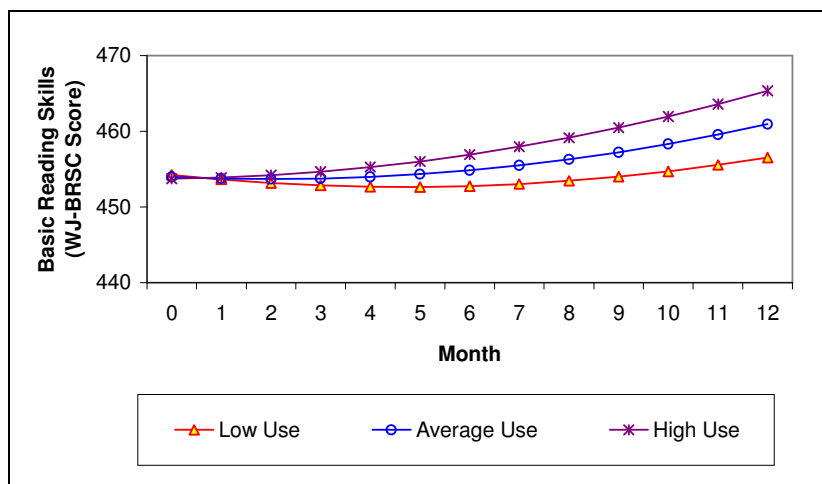


Figure 1: Effect of the use of the “Connection to the Outside” strategy on growth in basic reading skills

Attendance and Class Variables

The model identified the rate of attendance (proportion of hours actually attended to scheduled hours) as positively related to linear growth in reading comprehension. The coefficient of 0.02 for the attendance rate means that there was a 0.2-point increase per month with each 10 percent increase in attendance rate. Note that this positive relationship was significant even after controlling for the total attendance time in hours. Thus, students who attended more regularly improved their reading comprehension skills, no matter how many hours they attended. The scheduled length of class in hours per week was also related to positive growth in reading comprehension. Students in class with more scheduled hours per week had more growth in reading comprehension.

Instructional Variables

The use of a native language in class, a measure of how teachers used the students’ native language for clarification during instruction, had a positive effect on the linear growth in reading comprehension. In other words, the more teachers used students’ native language to do such things as give directions about class activities or to clarify concepts, the faster students’ reading comprehension grew. The coefficient of 3.44 for the variable can be translated to a gain of 8.2 points over a year with a 20 percent more use of native language.

To illustrate our findings from the growth model, we created three pairs of growth lines, shown in Figure 2: high and low level of incoming basic reading skills, high and low rate of attendance and high and low use of native language in the class. For each,

pair, we held other variables in the model constant. The differences in the slope or steepness of the lines indicate the strength of each variable's relationship to reading comprehension growth. For example, the effect of low and high attendance rates, all else being equal, can be clearly seen from the sharp divergence in the two attendance rate lines that begins after about three months. We also combined high levels of all three variables (the top line in Figure 2) to demonstrate their combined effects. As can be seen, the rate of growth in reading comprehension is very steep when students enter with higher basic reading skills, attend at a high rate and when the teacher enhances instruction using the students' native language.

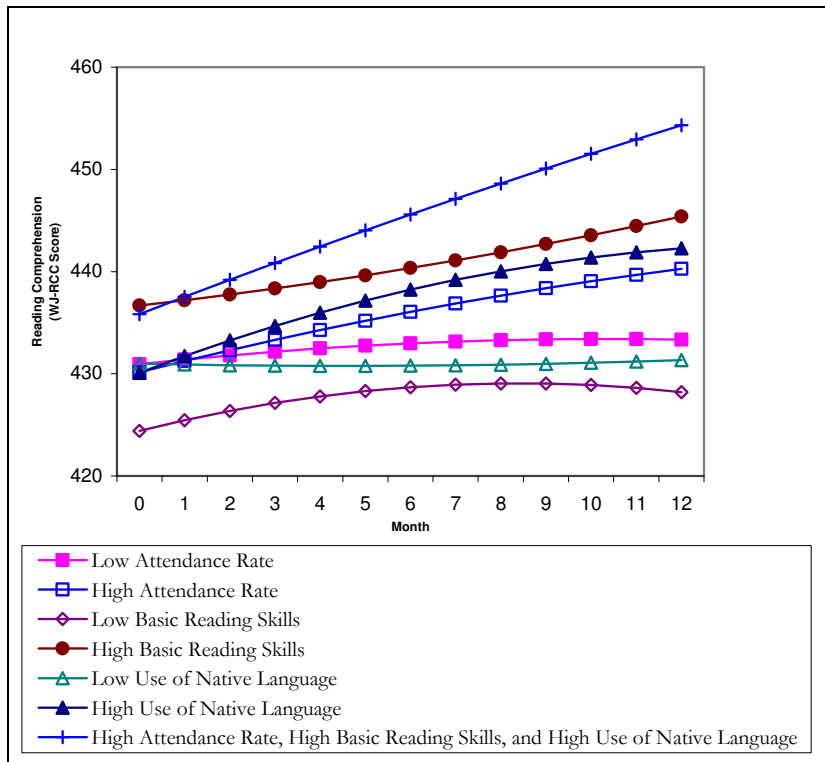


Figure 2: Effects of attendance rate, basic reading skills, and use of native language on growth in reading comprehension

4.6.3 Variables Related to Growth in Oral English Language Development (BEST)

The growth curve model for ESL literacy students' oral language skills measured by the BEST test showed that there was significant linear growth and a significant quadratic trend, meaning the linear trend tapers off over time. The mean BEST total scores

started at 23.7 and increased at a rate of about 2.2 points per month for the first three months, or about 6.6 points. However, due to the growth deceleration, the model showed it would take the next six months to achieve the same amount of gain. The results of the growth curve modeling show that many student, class attendance and instructional measures were significantly related to linear growth and this quadratic trend in development of oral English communication skills.

Student Variables

Students' age had a small negative relationship to linear growth in oral English skills, as measured by the BEST. Younger adult ESL literacy students acquired English speaking and listening skills at a slightly faster rate than their older counterparts. The model predicts that a 20-year-old student would gain 0.4 more points more per month on the BEST compared to a 40-year-old student, all other variables being equal. Since younger students also tended to have slightly better oral English skills at the start of class, this age gap only widens over time.

Students with higher basic reading skills when class began, as measured by the Woodcock Johnson BRSC, were positively related to BEST scores initially (i.e., initial status) and were positively related with linear growth in oral English skills. This finding means that the better basic readers started higher and learned English oral skills faster than their less reading-skilled peers.

Attendance and Class Variables

As with the reading comprehension measure, rate of attendance was significantly related to positive growth in oral English. Other things being equal, including the length of class and the total amount of attendance hours, students who attended more regularly (i.e., with higher attendance rate) learned oral English at a faster rate than students who attended less regularly. The model also showed that the scheduled length of class in hours per week was positively associated with linear growth rate. In other words, the longer classes promoted faster growth in oral English acquisition.

Instructional Variables

The growth model revealed three instructional factors that were positively related to improvement in oral English. Students in classes where more time in instruction was spent on oral communication development activities (such as pronunciation practice, conversation practice and dialogue drills) grew faster than students in classes where this type of instruction was provided less often.²⁰ The use of native language as instructional support also helped students learn oral English faster, as did increased use of the varied practice and interaction strategy.

In Figure 3, we illustrate the growth curve model predictions for two of the instructional variables. Holding other variables constant, we compared the growth lines for low and high emphasis on oral communication instructional activities and low and high emphasis on the varied practice and feedback strategy. We also show the projected growth when both strategies are used at a high level, all else being equal. The

²⁰ Students in such classes not only grew faster on this measure, but also started at a lower level. Students with lower oral skills were more likely to be in classes with an oral communication emphasis, probably due to placement procedures of programs.

slope or steepness of the line indicates the relative effects of these instructional emphases.

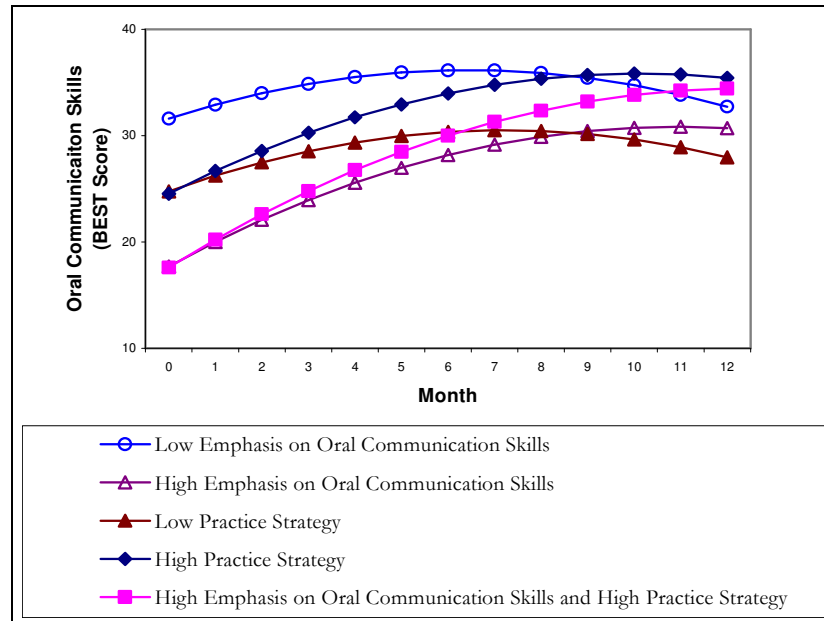


Figure 3: Effects of instructional emphasis on oral communication skills and practice strategy on growth in oral communication skills

Other Assessment Measures

No instructional or class variables were related to student gains in writing. In fact, there was very little improvement in student's writing skills over the study period. We did find gains in students' self-reported literacy practices, measured through interviews, and gains on our reading demonstration task. However, we were unable to relate these gains to instructional practices in growth modeling analyses. No teacher characteristics were found to be statistically related to any outcome measure.

5 Summary and Discussion of Main Findings

The *What Works* study was successful in achieving its main goal of relating instructional strategies to student learning. Through the growth modeling approach, we found that three instructional strategies: connection to the outside world, use of the student's native language for clarification in instruction and varied practice and interaction, were related to growth in student literacy and language learning. Table 6 summarizes the main findings related to instruction and program practices. These instructional

strategies encompass a range of teaching activities, which we discuss below, along with an interpretation of why these strategies were effective. We conclude with a summary of findings related to student variables and suggestions for further research.

Table 6: Key findings related to instruction, program practices and students

Instructional Practices	<ul style="list-style-type: none"> • <i>“Bringing in the outside”</i> Students in classes where teachers made connections to the “outside” or real world, had more growth in reading basic skills development • <i>Use of the students’ native language for clarification</i> Students in classes where teachers used students’ native language for clarification during instruction (e.g., to explain concepts and provide instructions on class work) had faster growth in reading comprehension and oral communication skills. • <i>Varied practice and interaction strategy</i> Use of this strategy, where the teacher taught concepts in a variety of modalities and allowed student interaction, resulted in faster growth in oral communication skills. • <i>Emphasis on oral communication</i> Students in classes where the teacher explicitly emphasized oral English communication skills in instruction had more growth in this area.
Program Practices	<ul style="list-style-type: none"> • <i>Scheduled class length (in hours per week)</i> Longer scheduled classes resulted in more growth in reading comprehension and oral communication skills, but less growth in basic reading skills. This suggests that teachers should not overemphasize basic reading skills for too long of a time, but move on to higher level reading skills or other language skills.
Student Factors	<ul style="list-style-type: none"> • <i>Rate of attendance</i> Students who attended a higher proportion of scheduled time (in hours) had more growth in reading comprehension and oral communication skills. • <i>Prior education and skills</i> Students with more years of education and higher incoming English language and literacy skills had more growth, although the effect of years of schooling was limited to growth in basic reading skills development. • <i>Age</i> Younger students developed basic reading and English oral communication skills faster than older students.

5.1 Connection to the Outside: Using Materials from Everyday Life

One of the key findings of the study was that connecting literacy teaching to every day life made a significant difference in reading basic skills development. To implement this strategy, teachers used materials from daily life that contained information that students wanted to know about or with which they had some experience. For example,

a teacher might bring in grocery flyers from different stores and ask students to compare prices or use phone and electricity bills, letters from schools or immigration authorities, and other items that appear in students' mailboxes to highlight literacy for adult contexts. Using authentic materials in this way, teachers can help build vocabulary skills, build background knowledge that helps students negotiate different types of document literacy and increase reading comprehension skills.

Activities of this sort might foster literacy development by linking new information to what learners already know and by engaging the learner in topics of interest. By starting with familiar materials that are of interest to learners and by creating situations for cognitive involvement, teachers can create interest, maintain high levels of motivation, engage students' minds and through this process build literacy skills that have importance in the lives of adults.

5.2 *Use of Students' Native Language for Clarification*

Our study showed that in classes where teachers used the native language as part of instruction to clarify and explain, students exhibited faster growth in both reading comprehension and oral communication skills.²¹ Since the directions for a language and literacy task are sometimes more complex than the language required by the task itself (e.g., "write your name and the date on the upper right hand side of the paper"), students who received clarification in the native language were able to focus on the task at hand and the confusion and anxiety of not understanding the instructions were reduced.

5.2.1 *Creating a Safe Learning Environment*

Another reason why using both English and the native language in the classroom was effective may be that many of the learners, particularly along the U.S. – Mexico border, have become convinced that English can only be learned through a reliance on translation and are reluctant to use English outside of the classroom for fear of not understanding or not being understood and therefore subject to ridicule. They may have lost confidence in their ability to get a point across in imperfect English or to understand a message if not all the words are understood. For these students, having a teacher who shares their language means being able to ask questions in a language they understand and having the security that access to the native language provides. Being in a classroom where the native language is used may provide less of a linguistic and more of a psychological advantage. Free from the anxiety of having to survive on English only in the classroom, these adults now have the opportunity to focus on learning and take in more information than otherwise possible. These explanations, however, must remain speculative, since we collected no data directly on these topics.

²¹ The *What Works Study* did not include bilingual classes or native language literacy classes, where the home language of the students is the language of instruction and the target is acquisition and improvement of literacy in a language other than English.

5.2.2 *Teaching Critical Thinking Skills*

It seems clear that we cannot think critically in a language we cannot understand. Beginning ESL literacy students are not able to discuss options or articulate opinions to a deep level if they still struggle with holding even a basic conversation in the new language. They may be able to understand a simple scenario presented to them, but they will be hard pressed to discuss the situation in detail or suggest more than the simplest course of action.

Yet these types of situations present themselves daily to immigrants and refugees since the problems of real life do not wait for English to catch up: children have to be enrolled in school, supervisors need explanations and newcomers get lost. By giving students a chance to use their own language in discussions, teachers can help students think about the situations that might confront them and can encourage them to work with others to brainstorm ideas, discover options and think about consequences. By mixing the use of English with opportunities to use the native language where appropriate, the learning English can be reinforced. This may be the process by which oral communication skills and reading skills improved, although again we can only speculate due to lack of data on this issue.

5.3 *Varied Practice and Interaction*

The reason for the relationship of varied practice and interaction to language learning may be that learning how to communicate in English is a challenging process that requires different sets of knowledge: an understanding of sentence structure, grammar and syntax; a good sense of how written language reflects oral language (phonology); the ability to interpret and use word endings that change the meaning of an expression and a rich vocabulary. In other words, students need a good sense of “how English works” to understand what is being said and explain their ideas in ways that at least approximate Standard English. Finally, communication requires a good sense of what is appropriate in any given situation, a sense of socio-linguistic competence.

While it is entirely possible to learn English on one’s own and slowly sort out the intricacies of the language, the process may be aided by a teacher who draws students’ attention to certain patterns and rules when appropriate and gives students a chance to talk in class without having to worry about accuracy at every step. While there is definitely a place for direct teaching in the ESL literacy classroom, it is easy for students to become overwhelmed. Adults who did not study English formally in school often have difficulties understanding concepts such as “subject” or “direct object” and too much overt grammar teaching can frustrate both students and teachers. Setting time aside, however, to demonstrate to students how English works and to practice language in meaningful ways appears to pay off in terms of increasing oral proficiency.

Students and Teachers

In examining the relationship of student background characteristics to English literacy and language development, we found that students’ amount of formal education was related to growth in basic reading skills. While all of the students in the study had very little formal schooling, the more schooling they did have, the greater their development of basic reading skills – at least at first. This initial advantage of schooling faded over time. It may be that students with more prior schooling in their native language had

some knowledge of basic reading that they were able to transfer to English, enabling them to learn faster. Students with less schooling struggled initially, but eventually caught up to their more educated peers.

Students' English language and literacy skills when they started class also were related to their subsequent learning. Students with higher basic reading skills (as measured by the WJR pretest) developed reading comprehension and oral communication skills faster than their peers. Similarly, students with higher initial English oral communication skills (as assessed by the BEST pretest) improved their basic reading skills faster.

Students' age was also an advantage to developing English oral communication and basic reading skills. Younger students developed these skills faster than older students. However, there was one assessment where older students had the advantage: the reading demonstration task. Older students tended to perform better over time reading the real-life, authentic materials (e.g., bill, labels, signs) used in this assessment than younger students. This intriguing finding may be due to the greater experience older students may have with these materials.

We also looked at whether teacher background and training had an effect on adult ESL literacy student learning. We found that no teacher variables were related to any of the student outcome measures used in the study. However, the 38 teachers in the study were relatively homogeneous. They were generally new, inexperienced teachers and although well credentialed, had little training or professional development in teaching adult ESL or ESL literacy. These factors made it very difficult to find statistically significant effects for teacher characteristics.

6 *Suggestions for Further Research*

The *What Works Study* employed a quasi-experimental methodology, where we collected student outcome measures at three points in time. We used statistical modeling to measure language and literacy growth, while controlling for the influence of other measures. This powerful approach is widely used in educational and psychological research and meets a high level of scientific validity. However, since we did not employ experimental manipulation, we cannot state definitively which specific instructional practices will produce the outcomes we observed. For example, while our findings allow us to say that "bringing in the outside" teaching strategies are related to growth in adult ESL literacy students' basic reading skills, the study design does not allow us to say which *specific* instructional practices, among those described in the previous section, will *cause* these students' basic reading skills to improve. To make this type of inference experimental research, with random assignment, is needed.

One possible approach for an experimental follow-up study would be to take instructional strategies the study found related to student growth – varied practice and interaction and bringing in the outside, for example – and train teachers on specific methods to implement the strategies. Students could then be assigned randomly to teachers, who would employ the different techniques. By comparing student learning in the different classes, the more effective methods could be clearly identified. This methodology would allow research to identify definitively the methods more likely to result in literacy and language growth. A broader range of adult ESL literacy students could also be included in this type of study, to allow broader generalizability.

The study methodology and approach limited our ability to examine the effect of teachers on adult ESL student learning and to define the characteristics and behaviors of good teachers. Yet, the importance of a good teacher is widely acknowledged and adult literacy students often identify their teacher as instrumental to their learning. In addition to focusing on instructional methods, a future study could identify teacher variables that affect student learning. Such variables might include training, background and pedagogical approach of teachers, as well as the interactions between teacher and learners. The findings from such a study would provide guidance on how to train teachers and promote good teaching practices in the classroom.

While the study has demonstrated that instructional practices in adult ESL literacy class are related to language and learning growth, most students spend relatively little time in class. For example, we found our students attended an average of about 129 hours over 16 weeks. Adults in these classes clearly rely on their environmental exposure to English and other methods of learning, in addition to classroom instruction, to acquire literacy and language skills. Such factors as the community in which learners reside, personal and family situation, employment, personal motivation, and literacy practices and needs also affect learning.

Future research could also explore approaches to assessing adult ESL literacy students. As we found, the assessments available for these students for instruction, research and accountability purposes range from non-existent to inadequate. Empirical work to identify assessment approaches and to develop and evaluate new assessments would greatly benefit the field at all levels. Teachers need these tools to design appropriate instruction, researchers need them as outcome measures and administrators need a gauge on student progress for accountability.

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