# Why ELS Works ... for ELLs

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reative Education Institute (CEI) staff care deeply that all the students who participate in our labs are successful in learning to read, learning mathematics, and learning to learn. That passion is reflected not just in our mission statement, but also in our daily work, giving it meaning beyond what people in many businesses experience. When we explain a proposed partnership between a school and our company, we truly mean a partnership in which we also invest through reduced costs to schools — our world-class service/support programs, and our ongoing research and development efforts to ensure that our programs are as effective as they can be.

In 2005, we released a research paper for our Essential Learning Systems (ELS) program that documented how every component of the program's content, lesson design, instructional strategies, and implementation features was solidly grounded in scientific evidence. To do that work, we totally deconstructed the program and enumerated every single component. Why ELS Works: Its Scientific, Theoretical, and Evaluation Research Base explicates our findings. The document includes a topic index, and a quick review of it reveals numerous specific references to limited-English proficient (LEP) learners or English-language learners (ELLs). CEI has also published our correlations to the tests that states are now administering under Title III of No Child Left Behind (NCLB) to measure annual growth in English-language proficiency; correlations to the Language Assessment Scales (LAS); correlations to the principles of sheltered instruction; and numerous articles in SHARE, our newsmagazine, on the benefits of our programs. We have even had an article on how to evaluate your program for English-language learners that complies

with Office for Civil Rights requirements.

Since 2005, we have seen a growing sophistication among the educators with whom we work about the importance of using scientifically-based programs and strategies. We have received numerous requests for an additional research paper dealing only with one subgroup, such as ELLs. This paper, then, is a response to those requests. It does not include the research already presented in the earlier, more general research report. Rather, it is a supplement to that report, so readers need to review both to get the full picture. (We previously published a similar supplement, "Why ELS Works for Dyslexics").

When one studies these papers, including the research summarized in this one, it is clear that the development path for learning to read is the same for all learners, regardless of age. There are, of course, variables that make it important to provide more emphasis and/or more practice/repetition in certain areas for a particular group, based on the individual needs of learners. For instance, for dyslexics, there are major emphases on phonological awareness and spelling, as well as fluency. For English-language learners, the emphases are phonemic awareness in English, letter recognition (for those not literate in a home language or whose home language does not use the English alphabet), English vocabulary development, and, of course, fluency. Readers are also reminded that ELLs frequently also struggle in mathematics. Why MLS Works: Its Scientific, Theoretical, and Evaluation Research Base includes specific sections that relate to ELLs (see especially Chapters II and IV), plus other references throughout.

# **HETEROGENEITY OF ELLs**

Everyone in American schools and adult literacy programs is well aware of the growing population of students needing to learn English and to learn it as quickly as possible. What some do not realize, however, is that the ELL population is no more homogeneous than is the general population. The only thing they may have in common as learners is the lack of English proficiency, so one size certainly does not fit all. It is critically important, therefore, for the interventions that are selected for these students to be highly individualized and have the capacity of differentiating instruction for each student so that each one stays in what Vygotsky termed the "zone of proximal development."

*ELS* is an intervention that is designed to do exactly that. Not only can it serve effectively the numerous differences in ELL students in one lab, but it can also serve students in the same lab who are English-speaking dyslexics, learning disabled, economically disadvantaged, gifted learners, and/or who simply have not had adequate or appropriate instruction to meet their needs. To illustrate the diversity of ELLs alone, we commonly see at least the following differences in the ELL students in our labs:

- ELLs who speak a language that does not use the English alphabet (i.e., many Asian and Mid-Eastern languages);
- ELLs who are also dyslexic and dyslexics are not all alike either;
- ELLs who are learning disabled and are identified or eligible for special education — and these learning disabilities are not all alike (traumatic brain injury vs. autism vs. Downs Syndrome vs. Cerebral Palsy vs. Fragile X Syndrome, etc.);

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- ÆLLs who are not readers in any language;
- ELLs who are literate in their home language, but who are at the beginning level in English-language proficiency;
- ELLs who are literate in their home language, but who are at the intermediate level in Englishlanguage proficiency;
- ELLs who are literate in their home language, but who are at the advanced level in English-language proficiency; and
- ELLs who have exited the bilingual/ ESL program, but who still need support and growth in English vocabulary and fluency.

CEI's ELS program includes diagnostic assessments, enabling the lab facilitator to select the right prescription or lesson sequence for each individual student so that regardless of the group that a particular ELL falls into, we have an appropriate instructional program for him/her that will enable Englishlanguage acquisition to be accelerated. The assignment of each student to a specific therapeutic set of lessons is the major, but not the only, strategy that we use for individualization and differentiation of instruction.

## LETTER RECOGNITION

One of the major reasons that CEI decided to incorporate its supplemental *Letter Recognition* program into the structure of ELS was that we knew the research on its importance in teaching all students to read. Researchers Vellutino, Scanlon, Small, Fanuele, and Sweeney (2007) found that letter identification was a sound way "to determine the at-risk status" of students in kindergarten and grade 1 since it is "the single best predictor of early and long-term reading achievement" (p. 210). Lesaux, Koda, Siegel, and Shanahan (2006) noted that "it is possible to conclude that, as with monolingual English-speaking children, word awareness, letter knowledge, and phonemic awareness are predictors of

the word identification and reading fluency skills of language-minority students." Another major reason was that we knew it would be helpful for teachers of ELLs who came to them at all ages without literacy in any language and of ELLs who came with languages not using our alphabet.

### PHONEMIC AWARENESS AND PHONICS

If some educators did not know the research base for explicit teaching of phonemic awareness and phonics, especially for struggling readers, then they most likely do now with the wide publication of the findings of the National Reading Panel (2000). An incorrect assumption that lingers, however, is that these topics are not important if a student can read in his/her home language. Meschyan and Hernandez (2004) make it clear in their research that phonological awareness in English is a prerequisite skill for learning vocabulary in English. This general finding seems to be applicable for students from diverse language backgrounds. Hossein and Geva (1999) concluded similarly in a study of Chinese learners and then of Farsi native speakers. And even though Spanish is more similar to English than is either Chinese or Farsi, the research (Jones, 1996) indicates the same: "While many of the discrete sounds in Spanish are similar to those in English, an understanding of the differences is a prerequisite to transferring knowledge about phoneme-grapheme relationships from L1 to L2." Learning the sounds of English vowels is particularly important, the study concludes.

For different reasons, secondary school ESL curriculum sometimes fails to include these critically important components for adolescent learners. Francis, Rivera, et al. (2006b) found that "any newcomer who lacks the ability to decode words requires targeted, systematic intervention in phonics to benefit from higher-level reading comprehension instruction."

Another incorrect assumption is that adult L2 learners do not need phonemic awareness and phonics. Not true, says Jones (1996): reasons for integrating phonics into the adult education ESL curriculum, as has been done in American primary school education. As English spelling is morphophonemic, understanding how phonemes are represented by single letters as well as spelling patterns can assist in the development of basic ESL literacy. The adult ESL student has the analytical capability to understand phoneme-grapheme relationships and can be taught how to utilize any transferable L1 literacy skills in the

There are compelling

Francis, Rivera, et al. (2006) summarize the work of many researchers as follows: "ELLs need early, explicit, and intensive instruction in phonological awareness and phonics in order to build decoding skills."

acquisition of English spelling.

The ways in which *ELS* addresses phonemic awareness and phonics are documented in Chapter III of *Why ELS Works: Its Scientific, Theoretical, and Evaluation Research Base* and more explicitly in the *ELS User's Guide* (2007).

## FLUENCY

Researchers have long noted the importance of fluency in reading among all students. Without fluent (both accurate and rapid) ability to decode, students use all their working memory to decode, leaving nothing for reading comprehension. Lesaux and Geba (2006) note that "Research on reading difficulties has clearly demonstrated the cumulative nature of reading skills; that is, without mastery of decoding, fluency is compromised; if decoding and fluency are not automatic, the reader's ability to extract and construct meaning from text effectively and efficiently is compromised." We now know without doubt that both fluency and vocabulary development have major positive impacts on reading comprehension. Shanahan and Beck (2006) summarize their findings relating to second-language learners: "Thus, fluency instruction benefits native speakers and appears to similarly benefit English-language learners."

Fluency is developed through practice and repetition. According to DeKeyser (2001), "The most ubiquitous finding about the acquisition of cognitive skills, recognized by proponents of any kind of theory of automatization, is the power law of practice." Hulstjin (2001), among scores of other researchers, agrees: "Acquisition of fluency is influenced by frequency, recency, and regularity. The frequency effect is simply that of 'practice makes perfect.'" He continues:

As was explained..., it is not enough to "know" a word; one must also be able to use word knowledge quickly in order to be able to listen or speak at a speed of two to three words per second and to read at a speed of three to six words per second. The training of automaticity appears to be a neglected component in many current L2 [second-language] curricula.

When fluency is neglected, ELLs, as well as learners in general, have difficulties in learning to read. In a research article, Hossein and Geva (1999) wrote, "Geva and Ryan (1993) reported in their work that "working



memory plays even a more important role in L2 reading of upper-elementary school children than in L1 reading." According to these researchers, this was mainly due to the heavier demands posed on working memory by lack of automaticity in executing lower level component processes in L2 than in L1 reading."

A major strength of *ELS* is its fluency development. Almost all educational programs are published with practice exercises, but educators responsible for teaching students who struggle to learn are quick to understand that few of these programs come with enough practice exercises to build true fluency, and most of the practice exercises are the same — over and over. Hill and Flynn (2006) state that "students generally do not reach 80 percent competency until they have practiced a skill at least 24 times." ELS, therefore, has more than two dozen individual tasks, each intended to move the student to mastery and fluency. No student needs all of those, but they are varied in such a way that lab facilitators can individualize instruction, and they are also varied to keep students engaged and motivated to keep working. It is important to note as well that ELS develops fluency in several critical areas. not just one, in an integrated way: letter recognition, decoding, vocabulary, spelling, and pronunciation of English sounds and words.

## VOCABULARY

Vocabulary development in English is one of the most important areas to emphasize in a school's overall curriculum for ELLs (Lehr, Osborn, and Hiebert, n.d.; Gersten and Baker, 2003). The American Educational Research Association (2004) conclude in their research synthesis that:

English-language learners will never catch up with native speakers unless they develop a rich vocabulary. Native speakers typically know at least 5,000 to 7,000 English words before kindergarten — a huge vocabulary, as anyone who has struggled to learn a second language knows. English language learners not only must close that initial gap, but also keep pace with the native speakers as they steadily expand their vocabularies. A rich vocabulary is critical to reading comprehension. Lesaux and Gebra (2006) found that "limited vocabulary knowledge is associated with low levels of reading comprehension in English, and English language learners with a large repertoire of high-frequency and academically relevant words are better able to process written texts than English-language learners without such a repertoire."

Klingner and Vaughn (2004) concur: "Vocabulary knowledge is strongly related to effective text comprehension and appears to be a highly significant variable in secondlanguage readers' success." Schools will not close the achievement gap between ELLs and native speakers unless, say Hill and Flynn (2006), they provide "an enriched vocabulary program."

Francis, Rivera, et al. (2006a) sum up the importance of deliberate vocabulary instruction to build academic language as follows:

Mastery of academic language is arguably the single most important determinant of academic success for individual students. While other factors (e.g., motivation, persistence, quantitative skills) play important roles in the learning process, it is not possible to overstate the role that language plays in determining students' success with academic content. Proficient use of — and control over — academic language is the key to content-area learning.

Researchers also have established some effective methods for teaching vocabulary to ELLs:

- For the second secon
- Provide techniques from sheltered instruction — "slower speech, clear enunciation, use of visuals and demonstrations, targeted vocabulary development, connections to student experiences, and use of supplementary materials" (Short and Echevarria, 2004)
- Provide both "definitional and contextual information" to students (Graves and Watts-Taffe, 2002; Francis, Rivera, et al., 2006b)

- Ensure that students attend to "both word form (pronunciation, spelling) and to whatever clues are available in input that can lead to identification of meaning" (Schmidt, 2002)
- Require "between 12 and 14 exposures to a word and its meaning, across multiple contexts... in order to gain deep understanding of a word" (Francis, Rivera, et al., 2006a)
- Use cloze passages (Burt, Peyton, and Van Duzer, 2005)
- P Teach vocabulary explicitly and teach it to the point of automaticity (Hulstjin, 2001)
- Provide intensive instruction through supplemental interventions to core instruction (Francis, Rivera, et al., 2006b)
- Use computer-assisted instruction (Burt, Peyton, and Adams, 2003)

CEI's *ELS* program incorporates all these strategies.

## WRITING AND SPELLING

All ELL teachers know that the language arts (reading, writing, speaking, and listening) are most effectively taught if done so in an integrated fashion, recognizing that an enhancement of skill in one area also strengthens the others. CEI's ELS program reflects these research findings. That is why ELS does not, for example, teach simply decoding or simply vocabulary. The software not only includes a real voice who models English pronunciation for ELLs, but it also demands a rather high level of teacher engagement in its deployment so that students also learn to speak and listen. That is also why ELS includes in the initial SHARE tasks in each Mastery Cycle a spelling component and why the supporting and supplementary tasks include not only dictation exercises (Copy-Write and Copy-Write Editing), but also the CEI Journal for expressive and expository writing. Adams (1990) summarizes the research on the value of writing and spelling:

The value of having the children write and spell is also strongly reinforced. It has been shown that the act of writing newly learned words is a significant strengthening of their perceptual integrity in recognition. ELS does not teach simply decoding or simply vocabulary. The software not only includes a real voice who models English pronunciation for ELLs, but it also demands a high level of teacher engagement in its deployment so that students also learn to speak and listen.

This is surely a factor underlying the documented advantages of programs that emphasize writing and spelling activities.

Spelling and writing, therefore, help to reinforce a student's learning to read. Jones (1996) explains that "skilled spellers can visually recognize spelling patterns and link them to their phonological translations effortlessly and accurately. Spelling-sound regularities are also seen in what are known as word families." *ELS* teaches spelling in precisely this way — through patterns and through word families, a chunking/clustering strategy that makes learning more efficient and that enables learning to be accelerated.

#### COMPREHENSION

ELS supports improvements in reading comprehension in numerous ways. Fluent decoding, as we have seen, is an absolute prerequisite to comprehension. Nassaji (2003) found that "efficient lower-level word recognition processes are integral components of second language reading comprehension and that the role of these processes must not be neglected even in highly advanced ESL readers." Scores of other researchers agree. Chamot (n.d.), for example, comments that "What we learned from these classroom observations was that these low-literacy students could think analytically and could relate what they were reading to their own prior knowledge, but that their low English proficiency was a barrier to displaying higher level thinking skills in English."

An enriched vocabulary is another prerequisite. Burt, Peyton, and Adams (2003) wrote, "one of the components of language proficiency that has been shown to have a strong effect on reading comprehension is vocabulary knowledge in the language being read." Lesaux and Geba (2006) agree: "If a child is experiencing reading difficulties, the result may be a knowledge base and vocabulary that are insufficient for comprehension of the increasingly complex reading material students confront in the later elementary years and high school."

Not only does *ELS* include emphases in fluency and vocabulary, but it also includes many opportunities to practice comprehension skills through eQuick Tales, supplemental activities provided to all ELS labs. Too, when schools measure the preto post-test gains for a year of instruction, they almost always find that lab students post more dramatic gains in reading comprehension than they do in instructional reading (decoding), reflecting again the power of fluency and vocabulary in improving reading in general. It is probably true that many students need instruction and extensive practice in comprehension skills, but what our schools see is that many, many students do fine on comprehension as soon as the foundational skills are in place.

## **INSTRUCTIONAL STRATEGIES**

*ELS* incorporates a number of instructional strategies that are also grounded in scientific evidence. The model for lesson development, for example, includes elements of direct instruction and mastery learning (see Chapter III of *Why ELS Works: Its Scientific, Theoretical, and Evaluation Research Base*).

#### **Computer-Assisted Instruction**

We also employ computer-assisted instruction, which facilitates not only the management of student records and the navigation of individual students through the appropriate activities in their prescriptions (lesson sequences), but also makes true individualization and differentiation a reality for every student, makes it possible to provide adequate and varied practice and repetition, and greatly facilitates the use of multisensory processing strategies. As Sawyer and Ranta (2001) comment, "In terms of designing instruction to cope effectively with ID s (individual differences), one clearly promising direction is computerized instruction. Computer programs can be written to provide virtually limitless possibilities for variety in the choice, modification,

and sequencing of language learning tasks." Hulstijin writes about the value of technology in providing practice:

"The computer, obviously, must be considered as a welcome aid in the implementation of a well-designed rehearsal regime." Among the methods and materials recommended for ELLs by the National Center for ESL Literacy is the use of technology: *"Learners often feel more comfortable"* and productive working alone and in front of a computer, where they receive positive feedback, than in a crowded classroom." The Center for Adult English Language Acquisition (CAELA) adds that computers "may also be responsive to different learning styles (e.g., auditory, visual, tactile)."

The computer screen itself is another subject of research. Levin and Long (1981) encourage simple pictorial presentation as a way to facilitate learning. An uncluttered screen, they said, draws the attention of the students "precisely to those aspects of learning required by the instructional goal." Gersten and Baker (2003) added that "Intervention studies and several observational studies have noted that the effective use of visuals during instruction can lead to increased learning." ELS' screens are uncluttered, without the noise and busyness of many software programs, since CEI's goal is to educate, not entertain. Educating struggling readers makes it imperative that learners not be distracted from the lesson goals.

# Individualization/Differentiation

In the section on the heterogeneity of second-language learners, we referenced the diversity of these learners. Short and Echevarria make the argument that ESL has to be individualized: "We do English-language learners a disservice if we think of them as onedimensional on the basis of their limited English proficiency." Burt, Peyton, and Adams (2003) not only acknowledge the diversity of need in this population, and they list several variables that affect not necessarily the developmental path for learning, but the rate and pace of learning: "age; motivation; instructional, living, and working environments; sociocultural backgrounds;

socioeconomic status; and learning abilities or disabilities." It is incumbent, then, that interventions selected for ELL instruction should be designed in ways that enable the teacher to forge "a very precise match between the child's source of difficulty and the intervention itself" (Francis, Rivera, et al., 2006a).

CEI's ELS program includes, as previously discussed, the lesson sequences (therapeutic prescriptions) that individualize the content, the pacing, and the amount of practice assigned to each student. In addition, the software allows the lab facilitator to modify or adapt the lesson parameters so that speed, color of the screen, the number of words assigned in a lesson, and other variables can be controlled. Other examples of individualization/differentiation include the scaffolding strategies; the early warning system that alerts the lab teacher when a student is not making expected progress; continuous progress monitoring; mastery assessments and automatic recycling if the student does not attain mastery; going back to assess words in previous mastery cycles; providing immediate corrective feedback; and placement tests for each mastery cycle. And, of course, the incorporation of multi-sensory processing strategies in all lessons not only contributes to more effective learning for all, but such strategies also teach both to students' learning strengths and at the same time remediate his/ her weaknesses. So multi-sensorv processing itself is also an individualization/differentiation strategy.

# Time-On-Task

The new Response to Intervention (RTI) initiative now being used to prevent as much failure and as many special education referrals as possible makes it clear that effective interventions get increasingly more intense (more time on task) as the students move through the tiers. CEI has always had a similar philosophy. Our ELS program is not core instruction for anvone, except it can be an excellent part of the core in early reading levels. It is supplemental instruction for those who struggle to learn to read. That is, student engagement in an ELS lab should be in addition to the instruction they receive in the regular classroom.

We recommend that ELS be used as a supplement to the ESL program, whether ELS is a part of a bilingual curriculum or is the primary support given to second language learners. The lab time provides the necessary added time on task for ELLs to become proficient in the English language. Ellis (2001) notes that "the best predictor of language facility will simply be time on task." Francis, Rivera, et al. (2006b) make a similar argument: "A strong research base supports the notion that, provided instruction is deemed effective, greater time on task is essential to the success of students performing below grade level, ELLs in particular."

Title III of NCLB has brought increasing accountability for schools teaching second language learners. ELLs are now expected to gain at least one level of English-language proficiency each year, as measured by a state assessment in reading, writing, speaking, and listening. In addition, each district is accountable for the percentage of students exiting the bilingual/ ESL program each year and for the percentage of limited-English students passing the state assessments in reading, mathematics, and science. Kamps, Abbott, Greenwood, et al. (2007) point out the following: "for all students, but especially for student populations who traditionally struggle to meet minimum academic standards, appropriate instructional intensity and consistent progress monitoring are critical to improving student outcomes." CEI has published its correlation of ELS with the areas tested on the state assessments to measure growth in English.

# **Chunking/Clustering**

Ellis (2003) points out that "chunking appears to be a ubiquitous feature of human memory." He further explains that it is the "associative learning of sequences." The *ELS* lessons are taught using a series of words with similar spelling/sound patterns. Learning in this way is more efficient and effective for all learners, including those who are ELLs. Chapter IV of *Why ELS Works: Its Scientific, Theoretical, and Evaluation Research Base* includes more information on this helpful strategy and how it is used in *ELS*.

# Practice/Repetition.

Fluency and mastery do not occur without significant amounts of practice and repetition, as we have seen. This strategy is a given in any effective intervention, for as MacWhinney (2001) finds, "We know that neural networks can be effectively trained through repeated presentation of stimuli." Hulstjin (2001) writes that "The more they repeat words, the more these are consolidated in long-term memory (LTM)." He also reports on studies involving the importance of "spaced repetition": The results of this study clearly demonstrate that retention probability is greatly enhanced for words that are well encoded in one or two presentations and are subsequently accessed several times at intervals of 30 days."

Researchers have also been interested in how much practice is enough. Hill and Flynn (2006) conclude:

There are two generalizations from the research regarding practice. First, a student will not master a skill without a significant amount of practice. In fact, students generally do not reach 80 percent competency until they have practiced a skill at least 24 times. This is important to remember because the goal of practice is to develop a skill or process so that it can be applied fluently with minimal conscious thought. Second, when practicing, students should adapt and shape what they have learned. The conceptual understanding of a skill should develop during practice. Again, students need multiple opportunities to make continued adaptations as they develop their understanding of the skill they are learning.

# Segalowitz agrees:

"All automaticity proposals for enhancing SLA [second language acquisition] are based, in one way or another, on the idea that extended practice, under particular conditions and circumstances, will increase fluency by developing automaticity." He continues: "promoting automaticity is generally believed to require massive repetition experiences and consistent practice."

Again, *ELS'* emphasis on practice and repetition is totally grounded in the most current research.



Copies of our research notes and a complete bibliography for this paper are available by calling us at 888.511.4194 or by e-mailing your request to info@ceilearning.com.

## Assessment and Feedback.

As Why ELS Works: Its Scientific, Theoretical, and Evaluation Research Base explains in Chapter IV, ELS includes a comprehensive assessment system, including diagnostic, pre-/post- standardized tests, continuous progress monitoring, mastery assessments, and regular checks on long-term memory. Lab teachers are trained to use the daily printouts, as well as the other assessment data to modify and adapt ELS lessons as necessary to keep every single student moving forward. These components are all necessary for a therapeutic intervention, according to Davidson (1994) and many other researchers (e.g., Gersten, Baker, Shanahan, Linan-Thompson, and Collins, 2007; Francis, Rivera, et al., 2006b; Kamps, Abbott, Greenwood, et al., 2007):

... the best instructional improvements are informed by ongoing assessment of student strengths and needs. Such assessments are often, but not exclusively, informal and frequently occur on a daily basis, and therefore are not necessarily suited to the summative task of accountability reporting systems. Data should be catalogued on a computer system that would allow teachers, administrators, and evaluators to inspect students' progress individually and by class. These formative assessments are specifically designed to inform instruction on a very frequent basis so that adjustments to instruction can be made to ensure that students are on pace to reach mastery targets.

*ELS* provides feedback to students in multiple ways. For example, the computer voice gives immediate, positive, and encouraging feedback to the individual student after each of his or her responses. The lab teachers are trained to give similar kinds of feedback as they monitor student participation and listen to recitations or review worksheets. A daily progress report is available for both the student and the lab teacher to review. Hill and Flynn (2006) argue that "Effective learning requires feedback. When teaching ELLs, it is particularly important to ensure that your feedback is comprehensible, useful, and relevant."

# CONCLUSIONS

Given the scientific grounding of every single component of *ELS'* lesson design, content, instructional strategies, and implementation features, it clearly includes what is needed to teach reading skills to those who struggle, including the diversity of English-language learners in today's schools and including all ages. CEI is not aware of any other program that has the level of effectiveness of *ELS*, nor any other program with its high levels of therapeutic individualization.

