

GET IN THE FAST LANE



BY BONNIE LESLEY, ED. D

In the Summer 2008 issue of *SHARE Magazine*, readers feasted on hundreds of student success stories, each one a testimony to the fact the Creative Education Institute (CEI) accelerates learning in reading and math. For each story that we included, there were thousands of others in schools across the United States — in public schools, private schools, charter schools, religious schools, after-school programs, community-based programs, adult education centers, and rehabilitation centers.

The faces in the *SHARE* stories also represent the diversity of struggling learners in America — age, ethnicity, socioeconomic status, English proficiency, and ranges of learning difficulties and/or disabilities.

CEI serves them all, and our test results over the past 20 years reveal that the average gains for each subgroup are about the same for each ethnic group, for each age group, for each level of school, for English-language learners, for dyslexics, for each socioeconomic level, and even for students with other reading and mathematics learning disabilities. That doesn't surprise us since our programs are intentionally highly individualized so that each learner gets exactly what he or she needs for success.

But inquiring minds may want to know just actually what it is that we do that truly accelerates learning. Lots of publishers say they do, but the fact is that they don't, except for very small

populations — usually the so-called “bubble kids.” Those who struggle to learn keep getting left behind by these programs. CEI is a rarity in that we seek to serve only those lowest-performing learners — because we know they *can* learn if given the appropriate instruction. And they do, as the evidence proves — time and time again!

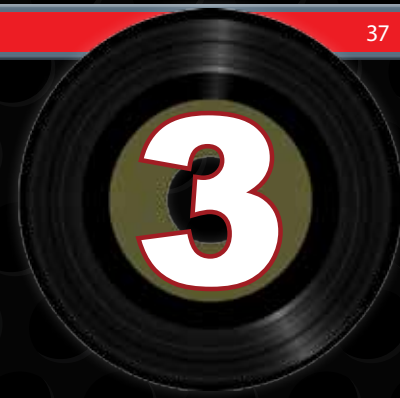
One of the stories in that issue of *SHARE* featured the amazing successes of Luis Albarran-Leyva, a student at Fontana High School in California. Luis' personal motivation and persistence, the teachers' commitment and knowledge, the school's leadership, and CEI's *Essential Learning Systems (ELS)* program all contributed to Luis' **8.4 years' gain** in reading comprehension in less than one year in the lab!

Students in CEI's labs across the country typically gain far more than one year of learning for one year of instruction. Such true acceleration is critical if schools are ever going to be able to narrow the achievement gap.

Many readers have requested information about what it is about CEI's programs that enable those kinds of gains. The following features of CEI's programs — both *ELS* and *MLS* — are among those documented in our research reports. According to the research, they are the ones that are critically important ... not only to make learning effective, but also to accelerate learning.

10 WAYS CEI PRODUCTS ACCELERATE LEARNING

This article first appeared in the Fall 2008 issue of *SHARE*, Volume 19, Issue 3.



CRITICAL CONTENT



The research says that we should teach the most critical concepts and skills for success at the next level. CEI's correlation of *ELS* with the findings of the National Reading Panel (NRP) is part of the evidence that we do exactly this. NRP concludes that the most critical things to teach beginning and/or struggling readers are **phonemic awareness, phonics, fluency, vocabulary, and comprehension**. In addition, *ELS* includes two more critical topics — **letter recognition** and **spelling**. Evidence of our curriculum emphasis for *Mathematical Learning Systems (MLS)* is in our correlation to NCTM's *Curriculum Focal Points* and to our alignment with the National Mathematics Advisory Panel report published earlier this year. Paring back the topics to those most critical and teaching them to mastery is the most efficient way to move students forward as quickly as possible so that they narrow the achievement gap.

"Most critical" may vary among populations. For example, in the Winter 2007-08 issue of *SHARE*, we published an article on "Why *ELS*

Works for Dyslexics." For these students, the most critical concepts and skills include phonological awareness, explicit instruction in spelling, and fluency development. Other *ELS* topics are also important, of course, but the ones listed are the areas of emphasis since they most likely are the ones of most need for this population.

CEI published a similar article in the Spring 2008 issue of *SHARE*, this time, "Why *ELS* Works for ELLs." Areas of emphasis for this population include 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. Letter recognition is critical for students beginning kindergarten. In mathematics, the most critical knowledge and skills to prepare students for Algebra I success are mastery of **long division** and **fraction concepts and operations**, as well as **fact fluency**.

INDIVIDUALIZED INSTRUCTION



A major part of the genius behind *ELS*' design is in its employment of lesson sequences that individualize decisions about which tasks an individual student will complete, in what order, and how many times. Although *MLS* does not incorporate sequences, a similar strategy is used in placing a student at the appropriate level and in the decisions made about assigning tasks, difficulty level, and range in the fluency strand. Further individualization for both programs is facilitated by the placement options, the parameter settings, scaffolding options, and in the individual coaching conducted by the lab teacher/facilitator. These strategies accelerate because they avoid a student wasting time on something he or she already knows. And, they avoid students becoming frustrated and unmotivated if the instruction they are receiving is too difficult. In other words, CEI ensures that students are taught in what Vygotsky termed the "zone of proximal development."

Multi-sensory encoding is part of individualization. No one disputes that students learn differently, that each one has different learning strengths and weaknesses, and that each one has learn-

ing preferences. Cognitive science has established that the more modalities are used in encoding information, the more flexibility the learner has in retrieving that information and being able to apply it. Research on effective teaching indicates that students who are learning English as a second language, students who are learning disabled (including dyslexics), and students with economic disadvantages all benefit from multi-sensory instruction. The incorporation of this strategy is one of the strengths in both *ELS* and *MLS*.

Lab teachers/facilitators also individualize. The facilitator who carefully monitors student performance in the lab and uses her observations and the data generated in daily and periodic reports to adapt and modify the *ELS* or *MLS* program is individualizing instruction in a powerful way. She also individualizes as she coaches each student, as she encourages each student to stay on task and keep working, and as she provides individual differentiated instruction as needed.

DIRECT INSTRUCTION



Research study after research study confirms that **direct instruction is far superior to a more constructivist/discovery approach for struggling learners**. Direct instruction saves the student time by identifying precisely what it is that must be learned and by providing a total focus on that goal. Beginning and/or struggling learners do not yet typically have enough knowledge in concepts or skills — or schemas — in order to

benefit from more open-ended instruction. Also, it avoids what is called **extraneous cognitive load**. Working memory is very limited when it comes to new learning. A constructivist approach for this learner not only produces less learning; it can also actually prevent learning. Direct instruction is of further importance in that it saves time in the instructional process so that students can expend as much time as they need in practice/ repetition to achieve mastery.

DISTRACTION CONTROL



Through very conscious intent, based on scientific evidence, **CEI fights to keep its instructional computer screens as clean and free of distractions as possible**. Software that is animated; that includes music or other distracting sounds; that has busy and complex screens; that employs

too much variety in its screen layouts, colors, and fonts; and otherwise seeks to entertain more than instruct dooms struggling learners to more failure. Cognitive psychology findings verify that none of us learns efficiently with those kinds of distractions. Learning is actually prevented for students who struggle in such environments.

PRACTICE & REPETITION



Almost all instructional programs include practice/repetition exercises, but only a very few provide adequate practice for struggling learners to achieve fluency/automaticity so that they actually have mastered the concept or skill. **Literally scores of repetitions are necessary for many students with learning difficulties or disabilities, and as many as 15 repetitions may be necessary for a second-language learner to acquire a new vocabulary word**. Teachers lack the time to develop and administer all these practice tasks, and they certainly lack

the time to individualize them as CEI does with its software. The kind of individualization and extensive practice/repetition that are required for struggling learners to be successful are very expensive to implement without the deployment of computer-assisted instruction, which is one of the reasons why CEI created *ELS* and *MLS*. Another important finding is that the practice needs to be varied so that students stay engaged and motivated to continue. Again, CEI does that. In *ELS*, for instance, there are more than two dozen different tasks, each of which can be further varied with the options in the parameter settings.

FLUENCY



Again, cognitive science models relating to the importance of working memory and long-term memory emphasize that **learners absolutely must become fluent in basic skills in order to become efficient and effective learners**. Without high levels of decoding fluency, readers consume all the space in working memory just to decode text, leaving nothing for comprehension. Too, even when a student can decode but lacks fluency in vocabulary, he or she may be able to “read” passages but not

be able to understand their meaning. In mathematics, without fluency in basic math facts, the student spends his or her working memory to do those calculations, leaving nothing for problem solving. Even when students persevere in such slow-motion learning, they become very frustrated, and their motivation to keep working wanes. A major emphasis, therefore, in both *ELS* and *MLS*, is fluency development in the most fundamental skills and knowledge — for quick and accurate retrieval.

CORRECTIVE FEEDBACK



Researchers point out that not only does practice make perfect, but it also has to be perfect practice or the student who is already behind wastes further time by learning the wrong thing. That is why **immediate, corrective feedback is built into both the ELS and MLS programs**. Research verifies that it takes much longer to un-learn and then re-learn something than it would take to learn it correctly the first time. Immediate, corrective feedback, therefore, is part of what ensures that CEI's programs truly accelerate.

CHUNKING/ CLUSTERING



A powerful finding in cognitive psychology is that **we can learn faster and more accurately if we chunk new information**, given the restraints in working memory. In *ELS*, for example, students learn groups of words that are organized in sound patterns. More able learners can learn many of these words in one lesson, but for those who are challenged for whatever reason, the program allows the teacher/facilitator to break the chunks into even smaller pieces for easier and quicker acquisition. Similar adaptations are available in *MLS* — especially in the fluency strand — where the teacher/facilitator can limit the size or range of the new learning that is to be practiced.

TIME ON TASK



Luis from Fontana High School could not possibly have achieved the level he achieved or have completed the number of lessons that he did if he had not been so highly motivated. He voluntarily came to school as early as 5:45 a.m. each morning to work up to 1½ hours before school started, in addition to the time he spent on *ELS* as an assigned class. **CEI recommends at least 45 minutes per day, five days a week, for each of our programs**. We're concerned when we hear that some devote only 30 minutes a day, schedule students for only three days a week, or in other ways cut back on the therapy that is absolutely critical for these learners' academic success. We know those schools will get some improvement, but we also know that it is not nearly what those kids need in order to catch up with their peers. Students who are behind two or more years have to run as fast as possible to catch up, and it will not happen without discipline and commitment. We are seeing more and more successful schools expanding the time in the CEI labs so that the neediest students have every opportunity to accelerate their learning.

LAB FACILITATOR



CEI staff have read the research. We know that when computer-assisted instruction does not work, it almost invariably is due to a student just being assigned to a computer program without the involvement of a teacher/facilitator to encourage, guide, adapt/modify the program, motivate, and hold the student accountable. The most successful CEI labs are those with those kinds of people in charge. Paul Jamerson and Elva Lara, who run the Fontana High School lab, are an inspiration to all of us, not just because of their lab's performance, but because of their obvious dedication to the success of individual students. Luis was not the only student in that lab who achieved at high levels in a short period of time.