

CEI encourages educators to analyze your *Diagnostic Screening Test:Reading (DST:R)* data, just as you would the results of any other assessment. The following information is provided to assist you in this analysis.

THIRD-PARTY ASSESSMENT

The *DST:R* is a third-party, norm-referenced assessment that provides teachers with useful diagnostic information about an individual student's skills in word reading and comprehension. It is similar to other learning-to-read inventories in providing measurements of critical knowledge and skills. Drs. Thomas and Patricia Gnagey developed the assessment. CEI purchases this assessment for its labs from Slosson Publishing Company.

GRADE-EQUIVALENT SCORES

Scores are provided in grade equivalents. Since the school year is generally nine months long, a grade equivalent score of 3.2 means that the child is performing the way an average third grader in the second month performs.

Lab personnel provide Instructional Reading and Silent Reading Comprehension scores for this analysis. The *DST:R* manual describes the algorithms used to compute these scores.

DEFINITION OF INSTRUCTIONAL LEVEL

The Instructional Level is roughly approximate to what Vygotsky terms "the zone of proximal development," or the level at which a student can perform a given task with assistance from a teacher, a peer, or a computer.

IMPORTANCE OF QUALITY ADMINISTRATION OF *DST:R*

The *DST:R* test development included scientifically-based processes to establish its validity and reliability — if administered appropriately. This point is extremely important. **Poor test administration will result in invalid scores and cannot, therefore, be used to determine program effectiveness for the students.** One example of this problem is that CEI staff sometimes see on a score report that a student's post-test score is lower than his or her pre-test score. Unless the student suffered some kind of brain injury or trauma during the instructional year, it is impossible for him or her to know less at the end of the year than at the beginning — reflecting, invariably, an invalid administration of the assessment or the existence of other extenuating circumstances that affected the student's performance.

MEASUREMENT OF STUDENT GROWTH

The difference between the post-test score and the pre-test score is a measurement of the student's growth for his or her time in the *Essential Learning Systems (ELS)* lab. CEI would like, of course, to claim credit for all the growth that a student demonstrates while engaged in *ELS*. It is important to remember, however, that the student is, most likely, also engaged in reading instruction in the regular classroom and may have other opportunities at school and at home to strengthen his or her knowledge and skills. To determine the true impact of the *ELS* lab, the school could set up an experimental design that would include an examination of the performance of students in the lab (experimental group), compared with an examination of the performance of demographically similar students who received the same regular classroom instruction, but who were not in the *ELS* lab. Such a study should include more than one assessment or measurement so that data can be triangulated.

NCLB SUBGROUP DISAGGREGATIONS

CEI revised its score report in 2005-06 to reflect the subgroups defined in *No Child Left Behind (NCLB)*. This new feature enables schools to see disaggregations on the score report that are parallel to those required in *NCLB*. It is important to remember on this report, just as in analyzing state test results, that one student's performance may be counted multiple times. For instance, a student may be Hispanic, LEP, and in Special Education. His or her score will, then, be reflected four times on the report — in each of those three subgroups and in the aggregate average.

IMPORTANCE OF GROUP SIZE IN INTERPRETING AVERAGES

Another important caveat in interpreting your scores is to remember that the smaller the group size, the less meaning there is in average scores for that subgroup. Educators are reminded that *NCLB* requires states to define statistically significant group sizes for the purposes of making determinations about school improvement. Those minimum group sizes range from about 25 to 50, depending on the state. CEI provides subgroup average scores, even if there are only one or two students in the group, but these averages should not be used to determine the program's effectiveness or ineffectiveness with that type of student. CEI suggests, rather, that the school compare its subgroup average with the average for that subgroup in all of CEI's labs — to determine if your school's lab is as effective as labs in general for that type of student. For instance, if your school's LEP students gained 3.7 months over a year, and the average gain for LEP students in all CEI labs is 2.8, then you can proclaim victory — at least tentatively, until you have enough data to make generalizations — since your school outperformed other schools in general.



IMPORTANCE OF LENGTH OF TIME IN THE ELS LAB

CEI recommends that students identified for *ELS* labs be scheduled into those labs four to five days per week for about 45 minutes per day. Schools that do that get the best results — sometimes two or three times the gain of average labs. It is important to remember that *ELS* is a therapeutic intervention, and just like other forms of therapy, if it is not done regularly, the student must continually start over, and the expected gains just will not happen. Another thing that CEI staff have noted is that sometimes labs do not run the entire school year. Many of them tend not to start until October, and they do not operate after the state tests are given in the spring. These students, therefore, cannot be said to have a full year (nine months of instruction). In fact, they may have only six or seven months. If this situation is the case, then it will affect how test scores are interpreted. A student experiencing the *ELS* lab for only six months and who gains seven months has done something remarkable (since most struggling students gain only about six months for a year of regular classroom instruction).

CEI sometimes hears complaints that an *ELS* student did not gain a full year, but when the student's participation is analyzed, he or she did not get a full year of instruction. The score report provides pre- and post-test scores and then the grade equivalent gain for each student; there is no indication of the total length of time the student spent on the program. However, if fewer than six months elapsed between the date of the student's pre-test and post-test, that student's information appears in italics.

All these situations must be considered in analyzing a school's results and in making decisions about how to improve the following year.

MISSING SCORES

Sometimes a student will have a pre-test score and then move before the end of the school year, so there is no post-test score. The score report will show, then, zero change, and if that zero is included in the calculations of average gains for the school, it will skew the results downward. The software produces an error report providing information regarding students with missing scores. A school can get better data if the records are cleaned up before submitting the scores for graphical analysis. In other words, teachers should either enter missing scores or eliminate students who are missing a post-test score in order to get a more accurate picture of the results. The report will not include the scores of students with incomplete data.

ELEMENTARY VS. SECONDARY SCHOOLS

Sometimes a secondary school gets concerned when they see significantly smaller gains in Instructional Reading than in Reading Comprehension. It is important to look at the age and prior experiences of students in the score analysis. Many, if not all, secondary students in *ELS* labs can decode already, so their pre-test scores may be near a maximum score. They, however, are not at all fluent and need *ELS* to develop automaticity and fluency in retrieval, which, in turn, leads to improved reading comprehension. Typically, then, secondary schools can expect significantly higher gains in reading comprehension than in instructional reading. Elementary schools, on the other hand, especially if their labs are accessible to primary-grade students, may see their highest gains initially in Instructional Reading.

THE IMPORTANCE OF COMPARISONS

Looking at any kind of assessment data without access to comparison data makes judgments about the meaning of the data difficult, if not impossible. Schools are encouraged to keep records of the performance of individual, class, and school-wide performance in the *ELS* labs over time so that a current year's results can be compared to the past. It is also important to compare schools in a district, if possible, especially if they are serving similar students. CEI staff have seen one school in a district consistently get four years of gain in one year, while other schools in that same district sometimes get fewer than one year and the others hover around two years. CEI encourages districts to study what is going on in the more successful implementations and to imitate those practices throughout the district for stronger results. Another way to compare is to compare the subgroup results with CEI's historical records of subgroup performance (available on the website under the "results" button). Elementary schools can also compare their results with elementary schools in general that have *ELS* labs, middle schools with middle school results, and so on.

USES OF SCORE REPORTS

The primary use of score reports is, of course, program improvement. That is why analysis of results is so important. Understanding what the scores mean is one task, and another is understanding what they do not mean. A person distant from the actual experience of the *ELS* lab could not ever do a quality interpretation of the results, for the score report does not tell what the educators in the school know about the participating students — their backgrounds, their previous performance, their family support systems, their attendance, their mobility, their health, their discipline and motivation, and on and on and on. Schools also use the scores to build district and community support for their *ELS* programs. Superintendents, principals, and other instructional leaders need to have data (and analysis) in order to make decisions about the future. Parents need to have data to know if their children are benefiting from their time in the lab. The students themselves exhibit a great deal of pride, not only in their own achievement, but also in the lab's achievements when the gains are explained to them. Good data analysis should lead not only to an improved lab the following year, but perhaps to better labs throughout a district as well. Schools are strongly encouraged to share with CEI their findings on how they continuously improved their achievement results so that labs everywhere can improve. The *SHARE* staff eagerly seek evidence of good lab implementations for case studies.