

## SECTION 3

# Interpretation of Reading Scores

**S**ection 2 described how to administer a reading assessment battery that included informal tests of word recognition, contextual reading, and spelling. This section explains how to interpret scores on these assessment tasks with the dual goal of establishing a student's reading instructional level and identifying strengths and weaknesses in his or her reading performance. I begin by introducing the *case summary sheet*, a useful device for summarizing, on one page, a child's test performance. I then proceed to discuss four cases, each of which illustrates a different type of reading problem.

## I. THE CASE SUMMARY SHEET

The case summary sheet (see Table 3.1; also Part Two, Case Summary Sheet, p. 000) provides a record of the child's performance on the various diagnostic tasks—word recognition, contextual reading, and spelling. After the various tests have been administered (see Section 2), the examiner carefully transfers the child's scores to the appropriate cells of the summary sheet. With the scores from the various tests on one chart, we are now in

**TABLE 3.1. Case Summary Sheet 1 (*Thomas—Fourth Grade*)**

| Level        | Word recognition |         | Oral reading |                    |               | Silent reading     |               | Spelling |
|--------------|------------------|---------|--------------|--------------------|---------------|--------------------|---------------|----------|
|              | Flash            | Untimed | Accuracy     | Compre-<br>hension | Rate<br>(wpm) | Compre-<br>hension | Rate<br>(wpm) |          |
| Preprimer    | 100              | 100     |              |                    |               |                    |               |          |
| Primer       | 95               | 100     |              |                    |               |                    |               |          |
| First grade  | 85               | 95      |              |                    |               |                    |               | 90       |
| Second grade | 80               | 90      | 98           | 100                | 105           | 100                | 115           | 70       |
| Third grade  | 70               | 85      | 95           | 83                 | 96            | 75                 | 118           | 20       |
| Fourth grade | 30               | 65      | 88           | 67                 | 81            | 50                 | 87            |          |

*Note.* Meaning-change errors: *third grade*—2 of 8; *fourth grade*—8 of 23. From Morris (2014). Copyright 2014 by The Guilford Press. Reprinted by permission.

position to examine the child's performance across grade or difficulty levels and thereby determine the level at which he or she should be instructed in reading (and spelling).

To make sense of the summary sheet scores, we need to apply performance criteria; for example, at third grade, what is an adequate or instructional-level score for flash word recognition, for oral reading accuracy, for comprehension, and so on? These performance criteria, introduced in the previous section (see Appendix 2.1 [pp. 000–000]), are again summarized in Tables 3.2 and 3.3.

Before proceeding to an interpretation of the scores shown in Table 3.1, keep in mind that we can anticipate relationships among scores at a given grade or difficulty level. For example, a child's flash word recognition score at a given level should predict both his or her oral reading accuracy and reading rate at that level. A strong flash word recognition score at second grade (e.g., 80%) indicates a good sight vocabulary that should lead to accurate, fairly fluent reading of a second-grade passage. Conversely, a low flash word recognition score (e.g., 35%) would indicate that the child might struggle reading a second-grade passage because of a deficit in sight vocabulary. Other anticipated relationships among the diagnostic measures include flash word recognition versus spelling (both are rigorous measures of orthographic knowledge), and reading rate versus comprehension (automatic print processing allows the reader to focus attention on meaning). These hypothesized relationships between components of the reading process (word recognition, fluency, and comprehension) provide a starting point for interpreting or making sense of a child's performance on the diagnostic battery.

## II. ILLUSTRATIVE CASES

### Case 1: A Word Recognition Problem

I use Thomas's case (see Table 3.1) to introduce a *routine* for analyzing the scores on the case summary sheet. Beginning diagnosticians should find this routine helpful, although experienced practitioners may find their own idiosyncratic routines to be more efficient. In other words, there is more than one way to approach the analytic task. Keep in mind that the dual purpose of the summary sheet analysis is to (1) determine the student's reading instructional level and (2) identify strengths and weaknesses in his or her reading profile.

**TABLE 3.2. Performance Criteria (Percentages) for Flash Word Recognition, Oral Reading Accuracy, Comprehension, and Spelling**

|                     | Word recognition (flash) | Oral reading accuracy | Comprehension | Spelling  |
|---------------------|--------------------------|-----------------------|---------------|-----------|
| Independent level   | 90–100%                  | 98–100%               | 90–100%       | 90–100%   |
| Instructional level | 70–89%                   | 95–97%                | 75–89%        | 50–89%    |
| Frustration level   | Below 50%                | Below 90%             | Below 50%     | Below 40% |

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**TABLE 3.3. Average End-of-Year Reading Rate Ranges (Grades 1-8)**

| Grade   | Oral rates (wpm) | Silent rates (wpm) |
|---------|------------------|--------------------|
| First   | 50–85            | 50–90              |
| Second  | 80–120           | 100–145            |
| Third   | 90–135           | 120–170            |
| Fourth  | 100–145          | 135–185            |
| Fifth   | 105–155          | 145–200            |
| Sixth   | 115–160          | 155–210            |
| Seventh | 125–160          | 165–220            |
| Eighth  | 135–160          | 175–230            |

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### Step 1: Establish a Tentative Reading Frustration Level

The analysis begins with the oral reading accuracy column. Looking down this column, we identify the first score *below* 90%—in this case, 88% at fourth grade. We hypothesize that Thomas is frustrated at fourth grade because his oral reading accuracy falls below 90% at this level. To check this hypothesis, we move next to the flash word recognition column, where we find that Thomas's fourth-grade flash score of 30% also falls in the frustration range. A deficient sight vocabulary is predictive of poor reading fluency. Therefore, we move next to the oral and silent rate columns, where the child's reading rates (81 and 87 wpm, respectively) are, in fact, well below the instructional-level rate minimums for fourth grade (100 wpm for oral and 135 wpm for silent). At this point, we have convergent evidence (oral reading accuracy, flash word recognition, and reading rate) that, in terms of print processing, Thomas is frustrated at the fourth-grade level.

Regarding comprehension, Thomas's fourth-grade scores (67% oral; 50% silent) reveal near-frustration-level performance. Moreover, eight of his 23 oral reading errors on the fourth-grade passage changed the meaning of the text.

### Step 2: Move Back to Establish a Reading Instructional Level

With fourth grade established as a frustration level, we move back to third grade to determine whether this is Thomas's instructional level. (Note that third grade could also turn out to be a frustration level.) At third grade, we find an instructional-level oral reading accuracy score of 95% that is supported by instructional-level scores in flash word recognition (70%) and reading rate (96 wpm orally; 118 wpm silently). Oral and silent comprehension scores (83 and 75%, respectively) also fall within the instructional range. Third grade is clearly Thomas's reading instructional level, with across-the-board scores supporting this determination. A quick glance at the second-grade scores reveals that second grade is Thomas's independent reading level (e.g., 98% oral reading accuracy, 100% comprehension, and adequate reading rates).

### Step 3: Attempt to Confirm the Instructional and Frustration Levels by Looking for Performance Dropoff between the Two Levels

Often a child will skillfully read a few IRI passages before encountering a difficult passage that leads to distinctly poorer reading. In our present case, Thomas read well at the second- and third-grade levels but encountered considerable difficulty at fourth grade. Looking at the case summary sheet (Table 3.1), we find consistent “dropoff” between Thomas’s third-grade (instructional level) scores and his fourth-grade (frustration level) scores; for example, flash word recognition (from 70% to 30%), oral reading accuracy (from 95% to 88%), oral reading rate (from 96 wpm to 81 wpm), and silent reading comprehension (from 75% to 50%). These down-the-column differences—large and consistent in this case—strongly support the designation of third grade as Thomas’s instructional level and fourth grade as his frustration level.

### Step 4: Establish Spelling Instructional and Frustration Levels

With the reading levels determined, it is now time to establish an instructional (and frustration) level for spelling. Thomas’s spelling power scores show him to be independent at first grade (90%), instructional at second grade (60%), and frustrated at third grade (20%). A qualitative analysis of his spelling errors also supports a second-grade instructional level (see Figure 3.1). Notice that while each of his four second-grade errors are off by only one feature or letter (e.g., TRANE, QUEN, SHOPING, STUF), several of his third-grade errors are off by two or more features, an indication of frustration level (e.g., SKREM—*scream*; COT—*caught*; THERSTE—*thirsty*).

An important point warrants mention here. We do *not* use spelling scores in determining functional reading levels. Although word recognition and spelling are strongly correlated in a normal population of schoolchildren, struggling readers often spell more

**FIGURE 3.1.** Thomas’s spelling of the first-, second-, and third-grade lists.

| First grade (90%) |             | Second grade (60%) |                | Third grade (20%) |                 |
|-------------------|-------------|--------------------|----------------|-------------------|-----------------|
| 1. trap           | ✓           | 1. train           | <i>trane</i>   | 1. scream         | <i>skrem</i>    |
| 2. bed            | ✓           | 2. thick           | ✓              | 2. noise          | <i>noyes</i>    |
| 3. wish           | ✓           | 3. chase           | ✓              | 3. stepping       | <i>steping</i>  |
| 4. sister         | ✓           | 4. dress           | ✓              | 4. sount          | <i>cont</i>     |
| 5. drop           | ✓           | 5. queen           | <i>quen</i>    | 5. careful        | <i>carfull</i>  |
| 6. bump           | <i>bomp</i> | 6. cloud           | ✓              | 6. chasing        | <i>chaseing</i> |
| 7. drive          | ✓           | 7. short           | ✓              | 7. batter         | ✓               |
| 8. plane          | ✓           | 8. shopping        | <i>shoping</i> | 8. caught         | <i>cot</i>      |
| 9. ship           | ✓           | 9. cool            | ✓              | 9. thirsty        | <i>therste</i>  |
| 10. bike          | ✓           | 10. stuff          | <i>stuf</i>    | 10. knock         | ✓               |

poorly than they read. Note, in the present case, that Thomas's spelling (instructional at second) lags approximately 1 year behind his word recognition (instructional at third).

Before moving on, let us briefly review the four-step routine for analyzing the case summary sheet scores:

- *Step 1: Establish a reading frustration level.* Locate the first score below 90% (frustration level) in the oral reading accuracy column. Look for further support, first in the flash word recognition column, then in the rate columns, and finally in the comprehension columns.
- *Step 2: Establish a reading-instructional level.* Moving one level back on the cover sheet, check for instructional-level scores in the following columns: oral reading accuracy, flash word recognition, oral and silent rates, oral and silent comprehension. If scores are not clearly instructional level, move up (or back) still another level.
- *Step 3: Confirm reading-level settings* by looking down the columns for any dropoffs in performance (e.g., word recognition, rate, comprehension) between instructional level and frustration level.
- *Step 4: Establish spelling instructional and frustration levels* by applying performance criteria to the spelling scores.

Application of the four-step process led to the following interpretation of Thomas's scores. A fourth grader, Thomas appears to have a third-grade reading instructional level. A deficit in automatic word recognition at fourth grade led to inaccurate, halting reading, which may have impeded his ability to comprehend at this level. Thomas spells at the second-grade level.

|          | Instructional level | Frustration level |
|----------|---------------------|-------------------|
| Reading  | 3                   | 4                 |
| Spelling | 2                   | 3                 |

## Case 2: A Comprehension Problem

Amanda, a fourth grader, was referred because of a possible reading comprehension problem. Tested near the end of the school year, her scores are shown in Table 3.4. Again, let us follow the four-step routine in analyzing her case summary sheet.

### Step 1

Looking down the oral reading accuracy column, we find no score below 90%. At fifth grade, the last level at which oral reading accuracy was measured, Amanda's score of 92% is low in the gray area (90–94%). Her fifth-grade flash word recognition score (50%) is also low, leading, as expected, to fifth-grade reading rates (95 wpm, oral and 90 wpm,

**TABLE 3.4. Case Summary Sheet 5 (Amanda-Fourth Grade)**

| Level        | Word recognition |         | Oral reading |                    |               | Silent reading     |               | Spelling |
|--------------|------------------|---------|--------------|--------------------|---------------|--------------------|---------------|----------|
|              | Flash            | Untimed | Accuracy     | Compre-<br>hension | Rate<br>(wpm) | Compre-<br>hension | Rate<br>(wpm) |          |
| Preprimer    | 100              | 100     |              |                    |               |                    |               |          |
| Primer       | 100              | 100     |              |                    |               |                    |               |          |
| First        | 95               | 100     |              |                    |               |                    |               | 100      |
| Second grade | 90               | 95      |              |                    |               |                    |               | 80       |
| Third grade  | 90               | 100     | 97           | 67                 | 121           | 58                 | 117           | 80       |
| Fourth grade | 75               | 100     | 95           | 58                 | 115           | 50                 | 109           | 70       |
| Fifth grade  | 50               | 90      | 92           | 50                 | 95            | 42                 | 90            | 30       |

Note. Meaning-change errors: *fourth grade*-2 of 9; *fifth grade*-5 of 17. From Morris (2014). Copyright 2014 by The Guilford Press. Reprinted by permission.

silent) that are below the instructional-level minimums. Finally, Amanda's fifth-grade oral and silent comprehension scores (50% and 42%, respectively) are at frustration level.

## Step 2

Moving back to fourth grade, we find instructional-level scores, particularly in the print-processing area. At fourth grade, Amanda's scores for flash word recognition (75%), oral reading accuracy (95%), and oral reading rate (115 wpm) are all within the instructional-level range. Her silent reading rate (109 wpm) is a bit low, but the chief concern at fourth grade is that Amanda's comprehension scores remain near frustration level (58%, oral and 50%, silent). Here we have a child who can print process (read the text) at her grade level (fourth), but who has difficulty understanding what she reads. (Notice that Amanda's comprehension is not strong even at third grade where her print processing is fairly fluent.)

## Step 3

In looking at performance dropoff between grade (or difficulty) levels, it is clear that Amanda's print-processing skill declines significantly between fourth and fifth grade. Flash word recognition decreases from 75% to 50%, oral reading accuracy decreases from 95% to 92%, and both oral and silent reading rates decrease by approximately 20 wpm.

## Step 4

Setting functional spelling levels is no problem in Amanda's case. Her spelling power scores indicate a fourth-grade instructional level (70%) and a fifth-grade frustration level (30%). These levels are borne out by a qualitative analysis of Amanda's fourth- and fifth-grade spelling errors (see Figure 3.2). Notice that her three fourth-grade errors are each off by only one letter (e.g., SCURY, CABBEGE, SUDEN). On the other hand, five of her seven fifth-grade errors are serious; that is, each deviates from the correct spelling by two or more features (e.g., EXSPLOSEN—*explosion*; MESHUR—*measure*; OFERD—*offered*).

**FIGURE 3.2.** Amanda's spelling of the fourth-grade and fifth-grade lists.

| <i>Fourth grade (70%)</i> |         | <i>Fifth grade (30%)</i> |           |
|---------------------------|---------|--------------------------|-----------|
| 1. plastic                | ✓       | 1. explosion             | explosen  |
| 2. cable                  | ✓       | 2. compare               | ✓         |
| 3. cozy                   | ✓       | 3. settlement            | sedlement |
| 4. scurry                 | scurry  | 4. measure               | mesher    |
| 5. preparing              | ✓       | 5. suffering             | ✓         |
| 6. stared                 | ✓       | 6. needle                | neadle    |
| 7. slammed                | ✓       | 7. preserve              | presurv   |
| 8. cabbage                | cabbeye | 8. honorable             | onerable  |
| 9. gravel                 | ✓       | 9. offered               | oferd     |
| 10. sudden                | suden   | 10. normal               | ✓         |

Amanda's profile is typical of a child with a reading comprehension problem. In setting an instructional level for her, we must keep in mind that she can process text fairly fluently at her grade level (fourth). And if a child can "read" the text, a teacher can help with comprehension by preteaching vocabulary, building background knowledge, and guiding the reading with relevant questions. Therefore, it may be possible to teach Amanda at the fourth-grade level despite her weakness in comprehension. (Note that if she could not read fluently at fourth grade, teacher support with comprehension would not solve the underlying print-processing problem.)

Two smaller points warrant mention. First, observe that Amanda's flash word recognition and spelling scores are equally strong through fourth grade. These scores indicate her sound knowledge of grade-level spelling patterns. Second, notice that her silent reading rates are lower than her oral rates—opposite from the pattern we would expect. It could be that Amanda just needs more practice with silent reading. Or it could be that she slows down when reading silently because of difficulties with comprehension. In any case, a good instructional program would focus on improving her silent reading comprehension and her silent reading rate.

|          | Instructional level | Frustration level |
|----------|---------------------|-------------------|
| Reading  | 4                   | 5                 |
| Spelling | 4                   | 5                 |

### Case 3: A Fluency Problem

Courtney, another fourth grader, is experiencing difficulty in the area of reading fluency or rate. Her case summary sheet is shown in Table 3.5. At her grade level (fourth), Courtney's scores indicate a significant weakness in print processing. While her oral reading

accuracy (92%) is in the gray area, her flash word recognition (45%) and reading rates (71 wpm, oral; 65 wpm, silent) are at frustration level. Surprisingly, Courtney’s comprehension scores at fourth grade are fine (92%, oral; 83%, silent).

When we move from fourth grade back to third grade, Courtney’s print-processing scores show improvement: oral reading accuracy increasing from 92% to 97%, flash word recognition from 45% to 75%, and oral reading rate from 71 wpm to 80 wpm. It is true that Courtney’s third-grade reading rates fall below the third-grade minimums of 90 wpm (oral) and 120 wpm (silent), indicating a problem with reading fluency. Nonetheless, her slow reading of the third-grade passages does not seem to affect her comprehension (100%).

In Courtney’s case, there is a divide between the print processing and comprehension parts of reading. It is most clear at fourth grade where the child is weak across the board in print processing (oral reading accuracy, sight vocabulary, and rate), but is able to answer comprehension questions. The print processing/comprehension divide is still present at third grade, although a little more difficult to discern. That is, all of Courtney’s third-grade scores (see Table 3.5) meet instructional-level criteria, with the exception of reading rate. She reads third-grade material accurately and with good comprehension, but does so at a slow, halting pace. In fact, a case can be made that Courtney is frustrated in third grade because of her very slow reading rates.

If the diagnostic decision is to teach Courtney using third-grade materials, the teacher or tutor will need to provide support in the area of fluency. Techniques such as repeated readings, taped readings, and Reader’s Theater are called for (see Morris, 2014; Rasinski, 2003). Courtney should not be taught at the fourth-grade level. Here, her word knowledge runs out (see low flash word recognition and spelling scores), adversely affecting her oral reading accuracy as well as her rate.

|          | Instructional level | Frustration level |
|----------|---------------------|-------------------|
| Reading  | 3                   | 4                 |
| Spelling | 3                   | 4                 |

**TABLE 3.5. Case Summary Sheet 5: Courtney (Fluency Problem-Early); Grade Level 4; Reading Level 3**

| Level        | Word recognition |         | Oral reading |                    |               | Silent reading     |               | Spelling |
|--------------|------------------|---------|--------------|--------------------|---------------|--------------------|---------------|----------|
|              | Flash            | Untimed | Accuracy     | Compre-<br>hension | Rate<br>(wpm) | Compre-<br>hension | Rate<br>(wpm) |          |
| Preprimer    | 100              | -       |              |                    |               |                    |               |          |
| Primer       | 100              | -       |              |                    |               |                    |               |          |
| First grade  | 90               | 100     |              |                    |               |                    |               | 100      |
| Second grade | 85               | 95      | 98           | 100                | 75            | 100                | 65            | 80       |
| Third grade  | 70               | 90      | 97           | 100                | 70            | 100                | 58            | 60       |
| Fourth grade | 45               | 75      | 92           | 92                 | 63            | 83                 | 52            | 30       |

Note. Meaning-change errors: *third grade*-1 of 4; *fourth grade*-3 of 11. From Morris (2014). Copyright 2014 by The Guilford Press. Reprinted by permission.

### Case 4: Assessing Reading Progress over Time

Reading, a complex, multifaceted skill, does not change overnight or even appreciably over a few weeks or months. However, reading skill does—or at least should—change over the course of a school year, and an informal reading inventory can be used to assess the amount and nature of the change.

Brett was a middle-grade student whom we evaluated and taught in our university reading clinic. Table 3.6 shows results from IRIs administered to Brett at the beginning and end of a 2-year period. In sixth grade (pretest), he was reading, at best, at the second-grade level, and even there his oral reading was inaccurate (90%) and very slow (55 wpm) (see top half of table). In the parent interview, Brett's mother stated that he got off to a very slow start in reading in first grade and was referred for special education services in second grade. Over the next 5 school years, Brett received a variety of reading help, in and outside of school, but his reading skill did not improve appreciably. The mother was particularly concerned that special education services for Brett in seventh grade would not include direct reading instruction, but instead would focus on his “accommodation” to the middle school curriculum.

Mrs. Ervin, an experienced first-grade teacher, tutored Brett in our 4-week summer reading clinic. She did an outstanding job, and it was apparent after just 14 lessons that the child had made progress. At the mother's request, Mrs. Ervin continued to tutor Brett twice per week during the following school year (seventh grade). His lessons included guided reading in second- and third-grade material, word study, and fluency drills. At home, he practiced reading stories that his tutor put on audiotape (see Morris, Ervin, & Conrad, 1996, for a fuller description of this case). Brett returned to our reading clinic

**TABLE 3.6. Pretest-Posttest Results for Brett over a 2-Year Period**

| Level                                 | Word recognition |         | Oral reading |                    |               | Silent reading     |               | Spelling |
|---------------------------------------|------------------|---------|--------------|--------------------|---------------|--------------------|---------------|----------|
|                                       | Flash            | Untimed | Accuracy     | Compre-<br>hension | Rate<br>(wpm) | Compre-<br>hension | Rate<br>(wpm) |          |
| Pretest scores (end of sixth grade)   |                  |         |              |                    |               |                    |               |          |
| Preprimer                             | 100              | 100     |              |                    |               |                    |               |          |
| Primer                                | 90               | 100     |              |                    |               |                    |               |          |
| First grade                           | 70               | 90      | 94           | 80                 | 69            | 80                 | 72            | 70       |
| Second grade                          | 70               | 85      | 90           | 80                 | 55            | 60                 | 63            | 40       |
| Third grade                           | 30               | 60      | 84           | 58                 | 51            | 50                 | 65            | 20       |
| Posttest scores (end of eighth grade) |                  |         |              |                    |               |                    |               |          |
| Preprimer                             | 100              | 100     |              |                    |               |                    |               |          |
| Primer                                | 100              | 100     |              |                    |               |                    |               |          |
| First grade                           | 90               | 100     |              |                    |               |                    |               | 90       |
| Second grade                          | 90               | 95      |              |                    |               |                    |               | 70       |
| Third grade                           | 55               | 100     | 98           | 100                | 110           | 92                 | 116           | 70       |
| Fourth grade                          | 30               | 70      | 99           | 92                 | 104           | 100                | 112           | 50       |
| Fifth grade                           |                  |         | 94           | 100                | 55            | 100                | 89            | -        |

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the next summer and then was tutored once per week during his eighth-grade year. Thus, over two school years and two summers, he received 78 hours of one-to-one tutoring from well-trained reading teachers.

The results in Table 3.6 show that, from pretest to posttest, Brett made 2 years of gain in reading—second to fourth grade. On the posttest, he read the fourth-grade passage with near-perfect accuracy (99%), good comprehension, and at an adequate rate. Brett's lone low reading score at the fourth-grade level was flash word recognition (30%), indicating a continuing problem with word-level automaticity. It is true that leaving eighth grade, Brett still read at only the fourth-grade level. However, there is another way to think about this student's progress. At the end of sixth grade, Brett read, at best, at the second-grade level; at the end of eighth grade, he read at the fourth-grade level. In other words, Brett, with a tutor's help, made as much reading progress in seventh and eighth grades as he had made in his previous 6 years in school.

In interpreting a child's performance on an informal reading inventory, not all case summary sheets will be as clear-cut as the ones discussed in this section. In some cases, individual scores may "straddle" the instructional–frustration ranges; for example, a flash word recognition score of 60% (instructional-level minimum of 70%), or a fourth-grade oral rate of 94 wpm (instructional-level minimum = 100 wpm). In other cases, a child's scores may be inconsistent within a grade level or across grade levels, making interpretation more difficult. Nonetheless, the four cases we have considered provide a useful framework or starting point for the diagnostician. They show how IRI results can be used to identify a student's reading instructional level, along with specific areas of strength and weakness. Such a diagnosis is essential in setting up an effective instructional plan.

### III. QUESTIONS AND ANSWERS

What follows, in question/answer format, are issues that arise when interpreting student performance on the informal reading inventory.

#### Word Recognition

1. *How firm is the 70% correct minimum in the word recognition/timed column?*

For word recognition/timed, 70% is a reasonable cutoff for instructional level. Stauffer et al. (1978) recommended 75% as a cutoff, and a recent study by Morris et al. (2011) reported that students (grades 2–6), who scored at the 30th percentile on the word recognition/timed task, attained a score between 70 and 75%.

2. *What do you do when the two automaticity scores, word recognition/timed and oral reading rate, are not in agreement?*

To put it simply, reading rate (a contextual measure) "trumps" word recognition/timed (an isolated measure). That is, if the two scores disagree—and usually they do not—then we give more emphasis to the rate score in setting the child's instructional level. This does

not mean that a difference between word recognition/timed and rate lacks diagnostic significance. For example, a child who exhibits a weak sight vocabulary but reads at an acceptable pace may be overrelying on context cues. Such a student will benefit from word recognition (or spelling) instruction. In contrast, another child, who has a good sight vocabulary but reads text very slowly, will require extensive reading practice along with specific drill on fluency.

## Oral Reading

### 1. How do you interpret an oral reading accuracy score that is in the “gray area” (90–94%)?

Until recently, the standard answer was that if oral reading accuracy is in the gray area, then the examiner needs to consider other print processing scores at the same level (e.g., word recognition/timed, oral reading rate, number of meaning-change errors) in order to make a judgment. For example, if a child’s oral reading accuracy on a fifth-grade passage is 91% (low in the gray area), but he or she has a decent reading rate and few meaning-change errors, then fifth grade is the instructional level. Although this analysis seems reasonable, a recent study has led me to question it.

Morris et al. (2011) reported average oral reading accuracy scores for children in grades 2–6 (see Table 3.7). Note in the table that the average oral reading accuracy score was 95% at second grade and 96% at third through sixth grade. Also note that the spread of scores (or standard deviation) around the average was fairly small at each grade level, and got smaller across the grade levels. For example, a fifth-grade child, performing at the 30th percentile (or 0.5 standard deviation below the mean), was still reading with 94.5% accuracy. The data in Table 3.7 support Betts’s old, instructional-level cutoff of 95%. The data also have led me to look skeptically at oral reading accuracy scores of 92% or below; 93 to 94% may be the true gray area.

2. Are the oral reading rate minimums firm at each grade (e.g., second = 80 wpm; third = 90 wpm; and so on) or can they be adjusted downward?

**TABLE 3.7. Average Oral Reading Accuracy Scores across Grades 2–6**

| Grade  | Oral reading accuracy (%) |                    |
|--------|---------------------------|--------------------|
|        | Mean                      | Standard deviation |
| Second | 95                        | 4.8                |
| Third  | 96                        | 3.9                |
| Fourth | 96                        | 3.6                |
| Fifth  | 96                        | 3.0                |
| Sixth  | 96                        | 2.7                |

In most cases, the rate minimums should be honored. They do *not* represent average reading rates, but instead are a conservative estimate of how fast a child should be reading in the spring if he or she is to be judged instructional at a given grade (or difficulty) level. These rate minimums are derived from children's performance in the Morris et al. (2011) study and are in approximate alignment with the end-of-year rate norms (25th percentile) reported by Hasbrouck and Tindal (2006). It bears repeating, however, that we need more, carefully conducted studies in the area of children's grade-level reading rates.

*3. In interpreting oral reading performance, why is so little attention given to an analysis of oral reading errors?*

I have two responses to this question. First, as a vehicle for identifying patterns of orthographic error (e.g. consonant blends, vowel pairs, multisyllabic words), oral reading is, in some ways, inferior to word-list reading. That is, in oral reading, a child's word recognition attempt can be influenced (or "muddied") by the surrounding sentence or passage context. In reading isolated words on a list, however, there is no contextual influence, and thus we gain a "cleaner" picture of the child's word knowledge. Second, in the interpretative process we do consider oral reading errors that change the meaning of the text. It is true that these meaning-change errors are not examined individually, but their number (low to high) is considered when setting the child's instructional and frustration levels.

## Comprehension

*1. Given the multiplicity of factors that contribute to a child's comprehension of a short passage (e.g., prior knowledge, vocabulary, verbal reasoning ability, interest, genre, print-processing skill), how much confidence can I have in the passage comprehension scores?*

The short answer is: not as much confidence as you can have in the print-processing scores (e.g., word recognition/timed, oral reading accuracy, reading rate). The reading passages have several notable traits. They are carefully graded in difficulty, narrative in structure, and contain content that is grade-level appropriate. The comprehension questions that accompany each passage are passage dependent, and although they tap important information in the text, they do not generally require higher-order thinking. These passage and question characteristics do delimit the type of comprehension that is being measured. Regarding interpretation, comprehension scores that differ by 25% or more are often educationally significant. For example, a drop from 83% correct at third grade to 50% correct at fourth grade deserves attention; a drop from 83% to 67% (really only one question) may not. The examiner should look for change in comprehension performance across the grade levels (e.g., from second grade to third grade to fourth grade), and also between oral and silent reading at the same grade level. Some children comprehend better in one mode than the other.

## Spelling

1. *Why is the instructional level cutoff for spelling (50% correct) so low? For example, the cutoff for word recognition/timed is 70%.*

Children who score 50% or higher on a spelling pretest in September tend to master the grade-level spelling curriculum over the course of the school year. On the other hand, children who score 30% or below on the same pretest do not show the same level of mastery. Indeed, they are often frustrated by the grade-level spelling curriculum (see Morris, Blanton, Blanton, & Perney, 1995b).

2. *How do I interpret a spelling score that is in the gray area (i.e., 40% on our assessment)?*

When interpreting a power score of 40%, the examiner should note the *quality* of the spelling errors. In the example, below, two third-grade children each misspelled six of the 10 words on the third-grade list, achieving a gray area score of 40% correct.

| Spelling word | Child A | Child B |
|---------------|---------|---------|
| scream        | SCREEM  | SCEME   |
| noise         | NOSIE   | NOES    |
| stepping      | STEPING | STAPING |
| batter        | BATER   | BADER   |
| caught        | CAUGT   | COT     |
| thirsty       | THURSTY | THRSTIE |

Note that while Child A's spelling errors are generally one letter (or feature) off, Child B's errors consistently miss the mark by more than one letter. Even with the identical power scores (40%), the teacher may choose to place Child A in a third-grade spelling group and Child B in a second-grade group.

3. *What happens when there is no clear spelling instructional level? That is, the child is independent at one level (fourth grade), but frustrated at the next level (fifth grade).*

This happens occasionally. Consider the following set of spelling power scores:

Third grade = 90%

Fourth grade = 80%

Fifth grade = 20%

Although the fifth-grade score of 20% indicates frustration, the high fourth-grade score (80%) precludes instruction at that level. This child should receive spelling instruction at the fifth-grade level.