

"Learning to Fasten the Seat of My Union Suit without Looking around": The Synchrony of Literacy Development

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“Learning to Fasten the Seat of My Union Suit Without Looking Around”: The Synchrony of Literacy Development

In the novel, *To Kill a Mockingbird* (Lee, 1960), Scout likens learning to read to learning to “fasten the seat of my union suit without looking around.” In both cases, new movements are acquired slowly and deliberately until, with practice, the movements become automatic. Particular qualities emerge with proficiency; both the planning and execution happen easily, and usually without conscious reflection. This article is about the development of reading fluency and expression and the close connections among oral reading fluency, word recognition, and spelling.

The planning required for fluency and expression takes place at two levels. At the phrasal level, fluency includes reading rate and the general ease or facility to group the words. At the word level, fluency includes a facility to recognize words and orthographic (spelling) patterns quickly enough to read for sense and purpose. Phrasal and word level planning is especially evident in oral expression. The development of expression involves the appreciation of the musical qualities of language as evidenced by a reader’s phrasal intonation and in the placement of accent in reading unfamiliar polysyllabic words (Templeton & Bear, in press). In the development of fluency and expression, then,

two levels of verbal planning can be monitored: the phrase and the word.

Central to the development of fluency at the word level is the learner’s orthographic knowledge—what one knows about spelling patterns. In literacy research, the link between fluency and orthographic knowledge is a relatively new connection and this link suggests an integrated model of literacy development where there is a synchrony in development among reading, writing, and spelling (Bear & Barone, 1989; Henderson, 1990). While new to many teachers, this approach provides a robust and integrated picture of the development of fluency and expression.

In addition to the notion of an integrated model, another aspect should be considered to understand fluency: Most literacy learning is accomplished tacitly, without conscious reflection—like so many of the good things in life (Neisser, 1976). This perspective on learning guides our support of students as we use a developmental model to help determine those “teachable moments”; for example, when it makes sense to “scrimmage” some activities in dramatic reading to help students examine fluency and expression.

Most of us do not remember the details of how we became fluent readers because, in fact, we rarely drew conscious attention to our learning. The following passage from *To Kill a Mockingbird* offers a delightful overview of development, and it highlights this tacit dimension in learning to read.

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To set the stage, Scout has just been chastised by her novice first grade teacher who, in spite of Scout's protests, insists that Scout's father had taught her to read. The teacher then tells Scout to tell her father to stop teaching her: "It's best to begin reading with a fresh mind. . . . Your father does not know how to teach." Atticus may not have known how to teach, but Scout certainly did know how to learn.

I never deliberately learned to read, but somehow I had been wallowing illicitly in the daily papers. In the long hours of church—was it then I learned? I could not remember not being able to read hymns. Now that I was compelled to think about it, reading was something that just came to me, as learning to fasten the seat of my union suit without looking around, or achieving two bows from a snarl of shoelaces. I could not remember when the lines above Atticus's moving finger separated into words, but I had stared at them all the evenings in my memory, listening to the news of the day . . . anything Atticus happened to be reading when I crawled into his lap every night. Until I feared I would lose it, I never loved to read. One does not love breathing. (p. 24)

Until we fear we might lose them, the physical acts of reading and writing are assumed.¹ For mature, healthy readers, reading operates pretty much the same each time.

From neuropsychological and linguistic perspectives (e.g., Brown, 1981; Rayner & Pollatsek, 1989), reading involves much of the brain, and the rapidity of the activities in the brain indicates that reading and writing are automatic language processes. Language fits the other operations of the brain like a glove. In the neuropsychology of language, there is a "stable neural architecture" distinctly different from the processes of reflection and thinking (Fodor, 1983, p. 119).

The ability to read fluently at a phrasal level is taken for granted by mature readers, who do not hesitate before opening a book to wonder if the words will be too hard to read with ease, coordinating breath and articulation. Mature readers often forget about the learning process and how fluency and facility were acquired. The integrated model presented in this article makes it easier to understand the stages of literacy development that lead to fluent and expressive reading.

Developing Fluency and Literacy

Adapting Henderson's (1990) work on episodes of development, five stages of reading are discussed as they relate to the development of fluency: pre-, beginning, transitional, intermediate, and specialized. This article focuses on the first three stages where oral reading fluency is a developmental concern.

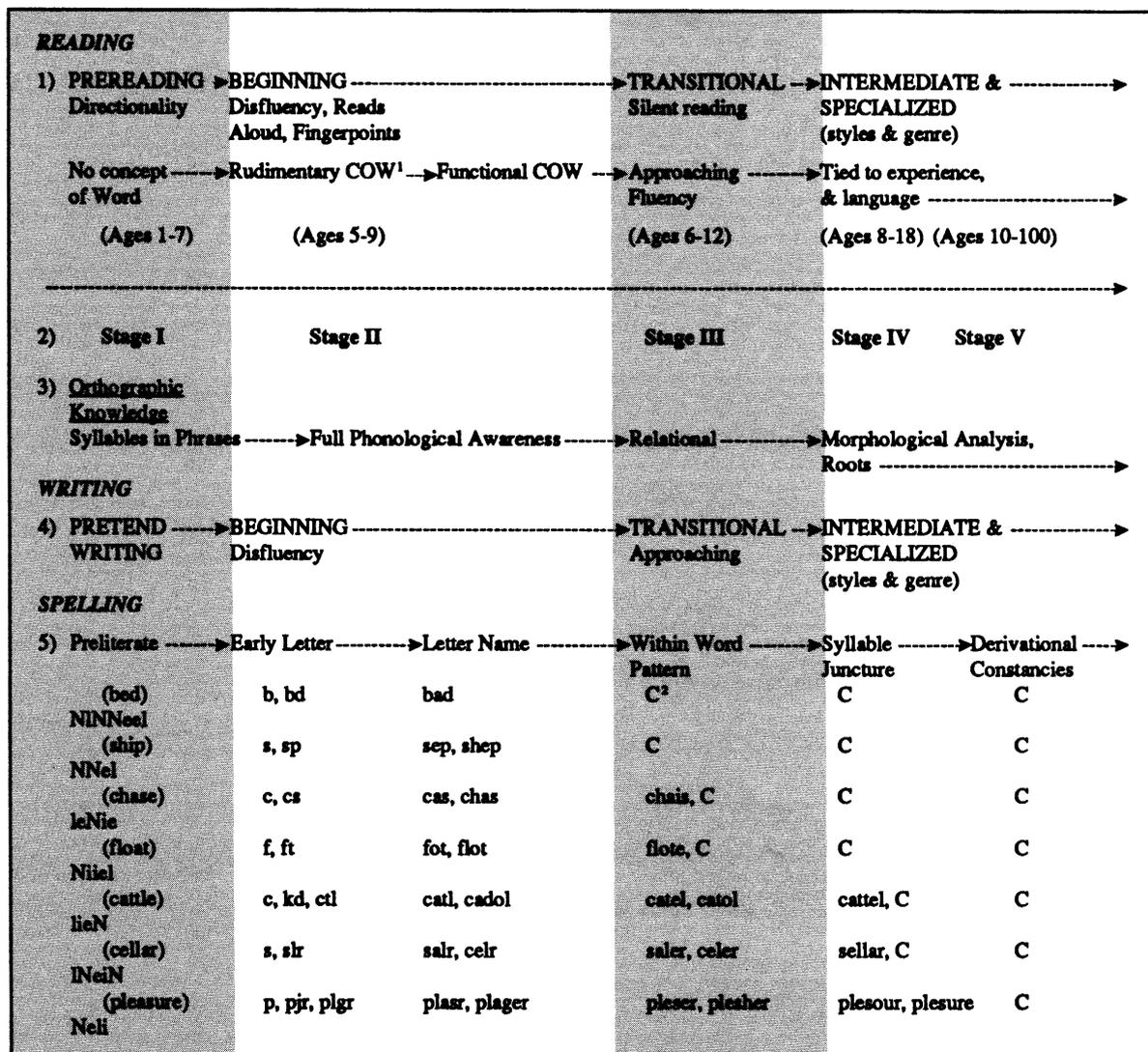
The benchmarks are presented in Figure 1. The stages are located centrally (line 2) with reading above and writing and spelling below. As is evident in matching the first and third lines, students' orthographic knowledge must be fairly well developed to achieve fluency, automaticity, and flexibility in reading and writing.

Throughout this article, the term fluency is used to denote a behavior that has been internalized, like fastening the seat of a union suit. As can be seen in Figure 1, reading and writing fluency are not fully in place until Stages IV and V.

Stage I: "Pre-" Stages

The pre- stages are periods of readiness or emergent literacy. Children's writing and reading at this stage do not match what is on the page. The stage is characterized by an element of pretend, and from one hour to another, children's rereading of a text may vary. Children's prereading expression can be traced in their dramatic play in stations around the room as they act out stories they have heard. They quote favorite lines and imitate the intonation of the characters. There is mostly display here: The meaning of the actual words is not as important as the rhythm and expression. At the word level, children have a fascination with rhyming, with or without making sense, and their tacit awareness of minute sound differences is well developed (Read & Schreiber, 1981). In the library areas in preschool and kindergarten classes, children sit and talk themselves through pictures of familiar stories with book-like voices.

The element of pretend is also evident in the children's writing at Stage 1 (see Figure 1). Often, children's first writing is made of squiggles, circles, and figures resembling writing. The sample under "preliterate" spelling is slightly more advanced in that the letters in the child's name are simply rearranged to spell the words. Very gradually, almost in fits and starts, between naming letters and dividing the speech stream



1. COW = Concept of Word

2. C = Correct spelling

Figure 1. Synchrony among reading, spelling, and writing development (based on Henderson, 1990).

at the phonetic level, the learner's word knowledge advances, and the primary consonant sounds in words begin to appear in invented writing. Students who write consonants accurately are approaching Stage II.

Stage II: Beginning Stages

Stage II is what most of us think of when we think of the "miracle of reading." This stage usually takes place between the ages of 5 and 9. Scout's description of how she learned to

read is as accurate an account as one can find. The moment Scout saw "the lines above Atticus's moving finger separated into words," she progressed from prereading to beginning reading (Stage I to Stage II).

Concept of word. Morris (1980, 1981, in press) has operationalized this behavior in his research on "concept of word" (COW). To trace students' movement from prereading to beginning reading, Morris's concept of word task is an elegant measure. First, students learn a short

rhyme, ditty, or a one-sentence student dictation. Then they are asked to point to (track) the words of the same rhyme or dictation, matching what they see with what they say. If a student can point accurately, we say the student has concept of word. Compared to the previous stage, a significant loss in fluency occurs in both reading and writing behaviors. This is because of the trade-off of fluency for accuracy.

According to Morris (1981), students who do not point accurately do not have a concept of word. With a sense of directionality, students gradually begin to track individual words. Two-syllable words continue to throw students off in their tracking. For example, Morris's first concept of word study used a version of "Old Dan Tucker." The first line was "Sam, Sam, the baker man." Students who are thrown off track in their pointing when they come to "baker" do not have a concept of word.

Students who track accurately show evidence that they have learned something unique about written language. They have made the speech-print match: The speech stream is written in words. Until this time, the phonology has been examined at a syllabic and a breath group level—the level at which breathing corresponds to phrases six to seven syllables long. Students begin to realize, for example, that a phrase like "Once upon a time" can be divided into words, and that some of the words may be longer than one syllable.

Note in line two of Figure 1 that concept of word (COW) is divided into *rudimentary* and *functional* COW. The major difference between the two hinges on the "immediate recognition of words in context" (Morris, 1980). Where the rudimentary stage depends on accuracy in tracking, the functional level considers the fluency and facility (cf. Walsh, Price, & Gillingham, 1988).

If a student can track the text accurately, the teacher asks the student to point to a few words in the middle of each line. Students with a rudimentary COW track accurately, but do not point immediately to words in context. They go back to the beginning of the text or at least the beginning of the line and track through until the spatial-temporal match is made and the word is found. Students with a rudimentary concept of word return to the beginning of a line to get a running start to find a particular word in context. On the other hand, students who both track and then find words in context immediately have a functional COW. The movement from rudi-

mentary to functional concept of word coincides with the movement from early letter name spelling (originally called prephonetic spelling) to a solid letter name stage.

In the invented spellings in Figure 1, it can be seen that the primary difference between early letter name and letter name spelling is the inclusion of the vowel in stressed syllables. Over the course of Stage II, students acquire a rather complete phonological awareness (Templeton & Thomas, 1984), and the vowel becomes the central feature considered in word recognition and spelling.

During the second part of Stage II, long vowels are represented with only one letter. These students embrace a linear approach or theory of the orthography where one letter represents each sound. For example, three letters are used to spell both *bed* and *bead*. Short vowels are spelled with the name of the long vowel closest in place of articulation (cf. Henderson, 1981; Read, 1975). In this case, *bed* may be spelled "bad." The final aspect of development at this stage is evident when students have acquired basic short vowel patterns, including the pre-consonantal nasals; that is, /m/ and /n/ in words like *bump* and *stand*.

Reading expression. In terms of reading expression at the word level, students in Stage II learn that vowels in English mark the music of language, and that these vowels hold syllables together. Generally speaking, at a tacit level, they learn that the vowels provide the musical scale for reading words with expression (Jones, 1976).

However, expressive phrasal reading is not often evident. Like the linear approach to spelling at this stage, students are fairly linear in oral reading. Three reading behaviors are characteristic of students at Stage II: (a) They read disfluently with little expression; (b) they tend to read aloud even when they read to themselves; (c) they finger-point as they read (Bear, 1989). In several studies, the early letter name and letter name stages of spelling were closely related to disfluent and unexpressive oral reading (cf. Bear, in press-b).

Like the linear strategy in spelling, students in Stage II adopt a linear approach in their oral reading, which makes it difficult to read phrasally with good expression. This disfluency is commonly called word-by-word reading. Technically, this is an inaccurate description, for even

disfluent readers read more than one word between each pause.

In one study (Bear & Cathey, 1989), 23 first through third graders practiced reading passages from a first-grade story. Over five sessions, the children listened to the story read by an adult and then practiced reading selected passages. Two raters reviewed each reading for fluency and expression, and listened for emphasis on particular words that were focused semantically by the text. In other words, the text indicated where the emphasis should go. In a simple example, the sentence, " 'Stop!' said the lion," uses punctuation to mark the emphasis. A more subtle example, in which the first word of a question might be emphasized, is " 'You help a lion?' said the lion."

Spelling-by-stage assessments for each child were made based on the results of a 25-word spelling inventory. The spelling-by-stage assessment predicted most oral reading measures. Students at all levels of development improved both in terms of fluency and expression, but with practice the relative improvements in fluency and expression were most pronounced during the letter name stage of spelling. Results like these support our diagnostic teaching observations. When students are in the letter name stage of spelling, one can anticipate that they will read disfluently with little expression.

Students at this beginning level read aloud for support. Of course, even mature readers read aloud when a text is difficult to read and/or understand. The question, however, is, Why do beginning readers read aloud when they read to themselves? To answer simply, reading aloud "buys" processing time. When beginning readers start to read, they fixate for slightly more than $\frac{1}{4}$ second, and while saying the first word aloud, buy some processing time to move to the next fixation and begin to apply their theory of orthography to the next word or syllable (Bear, 1989). The reading rate is the same even when beginning readers read silently. It is not until the next stage, the transitional stage, that silent reading rates are faster than oral rates.

As line four of Figure 1 indicates, students' writing at this stage is also disfluent. In a study of 41 first-through-third graders (Bear, in press-a), copying speed was predicted by knowing a student's spelling development. Again, as in oral reading, we found that letter name spellers were

slower writers and copiers than children at the more advanced spelling stages. Fluent writing is constrained by orthographic knowledge and this is a developmental constraint. Once students have more practice, develop a more complete sight vocabulary, and forge a richer "theory" of English orthography (Gill, in press), they write more fluently.

Stage III: Transitional Stage

During the transitional period, students approach fluency in reading and writing. Students begin to read in phrases with good intonation and to write whole words without hesitation and in "larger units" (Bear, in press-a; Huey, 1908/1968). During this period, a new level of abstraction is added to their personal theories of orthography. Students begin to think relationally (Templeton, in press) and there is a cognitive shift from a letter-by-letter, one letter/one sound expectation to a more abstract analysis of orthographic structures.

In addition, students' sight vocabulary is sufficiently large to compare features of unknown words with features of known words. For example, in spelling an unknown word or even a nonsense word (like *lape*), the student can relate the orthographic features of known words (perhaps *late* or even *mat*) and realize that a silent e is a reasonable choice. (See the invented spellings in Figure 1 for other examples.)

The transitional nature of this stage has been observed in both teaching and research (cf. Zutell & Rasinski, 1989). In one study with 40 first graders, within-word pattern spelling was only modestly related to reading fluency, and clearly was not related to disfluent oral reading (Bear, in press-b). In another study, children who were within-word pattern spellers (a) read more fluently and with much better expression than letter name spellers, (b) were more sophisticated in their reading expression as evidenced by the syllable lengthening at the end of phrases, and (c) read words in semantic focus with greater emphasis (Bear & Cathey, 1989).

Children's written responses to what they have read during this transitional stage include analyses and generalizations. The cognitive shift in analyzing the orthography, discussed above, is reflected here in students' comparing their ideas with what happened in the text to make their analyses (Barone, 1989). Students we have

studied at this transitional stage begin to write with greater fluency. In a copying activity, students at this stage copied more rapidly than letter name spellers (Bear, in press-b).

In instruction for students at this stage, support reading materials and activities are gradually replaced with simple chapter books and more independent reading activities. The reason for this shift is pragmatic: It is easier to find materials for these students to read fluently and expressively.

Unfortunately, many readers who receive remedial assistance fixate at this stage of development. As a result, they continually try to read materials in their regular classes that are too difficult and with which they cannot experience fluency. Beginning in third grade, many poor readers seem to experience such profound frustration that they lose their “will and self-reliance” when it comes to literacy (Henderson, 1981). By monitoring reading fluency and expression, teachers can help ensure that students have opportunities to read fluently enough to make sense of the text.

Stages IV and V: Intermediate and Specialized Stages

Oral reading fluency is well developed by the fourth and fifth stages and, as long as the text is about a familiar topic, the intermediate and specialized readers read with at least fair expression. During this period, expression and fluency depend upon the reader’s understanding of what is written, and we can get an idea as to whether or not a text is comprehensible by listening to someone read (Brown & Miron, 1971). In the previous stages, comprehension and understanding were not questioned, and disfluency was more related to orthographic knowledge, not comprehension. During these later stages, oral reading fluency and expression, spelling, and writing are closely tied to experience, thought, and language.

At the word level, expression during Stages IV and V is tied closely to vocabulary development and orthographic knowledge. Students at these latter stages spell most single syllable words correctly and they begin to examine the morphology—the meaning system of word relations. While students are cognitively able to understand the meaning of affixes during the previous stage of development, during these stages students acquire the orthographic principles

that govern the way syllables in English are combined (Templeton, 1989).

As Henderson (1990) observed, we learn about words throughout our lives, but by Stage V the learner knows enough about the orthography to read at a fairly steady and rapid pace. The synchrony across literacy behaviors continues for Stages IV and V. Although reading and spelling achievement for a few middle and high school students begin to diverge, for most, reading, writing, and spelling development are interrelated.

Measuring Fluency and Expression

At the Center for Learning and Literacy at the University of Nevada, Reno, reading teachers have been taught to examine reading errors or miscues, including substitutions, omissions, repetitions, and corrections. Although in recent years reading rate has been considered a secondary consideration by some, in our work reading rate has been an important measure. It is easy to obtain and reliable. In several studies of beginning and transitional readers, we have found that oral reading rate is closely related to spelling development and, more generally, to literacy maturity (Bear, in press-b).

We have also learned that to get a sense of students’ ability to read fluently and expressively, it is important to have them read at a comfortable level. An error rate greater than 7 words per 100 seems unacceptable. Finding comfortable material is not so easy with beginning readers; therefore, we have used repeated readings of dictations and pattern stories to examine fluency and expression.

Measuring and noting fluency and expression have traditionally been minor considerations in informal reading inventories. Most of the time, examiners are instructed to mark inappropriate expression and prosody; for example, omitting a period or reading a question without an appropriate intonation contour. At the literacy center, we have looked for more positive ways of marking expression; we want to know what our students do well. However, the linguistic features that are thought to comprise fluency and expression are difficult to study individually. Cutler and Isard (1980) have likened prosody or fluency and expression to a good sauce; there “is a blend of different ingredients, none of which can be separately identified in the final product” (p. 245).

Our understanding of fluency and expression is quite incomplete. For example, acceptable reading rates are only now being delimited by task and development (Carver, 1985), and recent research on expression suggests that questions do not always have a rising intonation contour, and not all declarative sentences end with a falling contour (Deese, 1984; Katz, 1989).

In spite of these difficulties, teachers are good at “earballing” students’ oral reading, and we have developed general and specific ways of marking oral reading (see Bear, in press-b). These have included (a) general measures of fluency and expression, and (b) marking specific prosodic features: all pauses, emphasis, syllable lengthening, and change of voice for a quotation.

Trying It Out

At the beginning of this article, I suggested that if this model of literacy development was to have any explanatory adequacy, one should be able to take a behavior in one area and predict behaviors in another area. We have developed the following routine to show teachers the synchrony of development. First, we ask them to bring invented spellings from their students to our meeting. Spelling errors from writing are good to use, but in making comparisons across students, it is often easier to use a uniform list. In addition, students appear to concentrate on their spelling a bit more on a spelling test than they do in free writing. The spelling inventory in Figure 2 is appropriate for kindergarten through sixth grade (cf. Bear & Barone, 1989; Morris & Perney, 1984; Schlagal, 1989).

**QUALITATIVE SPELLING INVENTORY
SPELLING-BY-STAGE ASSESSMENT**

This is a short spelling inventory to help learn about your students. The results of the spelling inventories will have implications for reading, writing, vocabulary, and spelling instruction.

Instructions: Let students know that you are administering this inventory to learn how students spell. Let them know that this is not a test, but that they can help by doing their best. Say the word clearly once, use the word in a sentence, and then say the word a second time.

Possible script: “I am going to ask you to spell some words. Spell them the best you can. Some of the words will be easy to spell, some will be more difficult. When you do not know how to spell a word, spell it the best you can; write down all the sounds you feel and hear.”

(For personal use, teachers are encouraged to administer the spelling inventory in small groups and to stop when the students miss three out of five words.)

Before examining the spelling inventories, rank order your students in terms of their achievement and overall reading ability. Then score the inventories for the number correct. See Bear & Barone (1989) to learn how to make the spelling-by-stage assessment. See if the match between the reading score is similar to the rank order of spelling score.

<u>1st Five Words</u>	<u>2nd Five Words</u>	<u>3rd Five Words</u>												
1. bed	6. train	11. preparing												
2. ship	7. closet	12. popping												
3. drive	8. chase	13. cattle												
4. bump	9. float	14. caught												
5. when	10. beaches	15. inspection												
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="vertical-align: top; width: 50%;"><u>4th Five Words</u></td> <td style="vertical-align: top; width: 50%;"><u>5th Five Words</u></td> </tr> <tr> <td>16. puncture</td> <td>21. confident</td> </tr> <tr> <td>17. cellar</td> <td>22. civilize</td> </tr> <tr> <td>18. pleasure</td> <td>23. flexible</td> </tr> <tr> <td>19. squirrel</td> <td>24. opposition</td> </tr> <tr> <td>20. fortunate</td> <td>25. emphasize</td> </tr> </table>			<u>4th Five Words</u>	<u>5th Five Words</u>	16. puncture	21. confident	17. cellar	22. civilize	18. pleasure	23. flexible	19. squirrel	24. opposition	20. fortunate	25. emphasize
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16. puncture	21. confident													
17. cellar	22. civilize													
18. pleasure	23. flexible													
19. squirrel	24. opposition													
20. fortunate	25. emphasize													

Figure 2. A spelling inventory.

We ask the teachers to rank their students in various ways. Usually, we ask teachers to rank order students in terms of general reading ability. There is usually a good match between spelling, reading achievement scores, teachers' general ratings, and term grades in subject/content areas. At the primary levels we use this information to group students for word study activities and some directed reading-thinking activities.

We also ask the teachers to listen to their students read orally for a paragraph or two and to use a 10-point fluency and expression scale. If they have been trained to mark oral reading, we ask them to make notations on a copy of the text. The students who read most disfluently and unexpressively are also the students who tend to be in the lowest stages of spelling development. While they may have wonderful ideas, their writing is the most underdeveloped in terms of length, sophistication, and correctness.

Students' oral reading fluency and expression also give an indication of general linguistic competence relative to a text. A lack of expression when there is good fluency is an affective indication that may mean the student is not thinking or understanding, and prior knowledge or interest has not been activated sufficiently.

Conclusion: Time to Think

The model of literacy development presented in this article recognizes the role of tacit knowledge in reading and writing. We have of course been concerned here with this model as it incorporates and explains fluency. Henderson's (1990) integrated, developmental model informs instruction by developing expectations in our diagnostic teaching, as well as providing a frame for accountability for parents and administrators.

When one sees that learning to read and write are integrated, developmental processes, then the battles over methods become absurd (e.g., whole-word, synthetic phonics, or even basal versus whole language) (Henderson, in press). We must make sufficient time for reading and writing and time to think and talk about ideas. We do not need to have students thinking about *how* to read. Most of our time in remedial programs at the Center for Learning and Literacy involves four basic activities with all

students: reading with, reading to, writing, and word study.

Returning once again to *To Kill a Mockingbird*, Scout's brother observed, "If you want to learn about cows, you go milk one, see?" (p. 24). In Henderson's 1977 article in this journal, he discussed horseback riding to make a similar point. If you want to learn how to ride, you have to spend plenty of time in the saddle riding. The same is true for literacy: If you want to learn to read, you have to spend plenty of time reading. This developmental model of fluency and expression helps to gauge students' progress while they spend, we hope, more and more time in the saddle reading.

Note

1. Those of you who have lost reading or language momentarily through some trauma have a sense of what it is like. The literature on brain damage and language functioning (i.e., the journal, *Brain and Language*) is a good source for learning about language development, language processing, and disabilities.

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