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Abstract

Instead of relying on machine-scored tests, many teachers wisely assess children's reading themselves, in an individualized session with each child. Some version of what is popularly known as the informal reading inventory (IRI) is often used for such assessment. The IRI provides a handy but not necessarily reliable method for determining what level of reading material might be appropriate for a given child. Furthermore, it is even less likely to be valid in determining a child's reading strengths and weaknesses. Some recent versions of the informal reading inventory encourage teachers to underestimate children's reading strengths and even to prescribe "remedial" work for excellent readers. Also, the various phonics, sight word, and word analysis tests that sometimes accompany the IRI have limited relevance in determining how well a child can read.

A PSYCHOLINGUISTIC LOOK AT THE INFORMAL READING INVENTORY PART I: LOOKING AT THE QUALITY OF READERS' MISCUES: A RATIONALE AND AN EASY METHOD

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Instead of relying on machine-scored tests, many teachers wisely assess children's reading themselves, in an individualized session with each child. Some version of what is popularly known as the informal reading inventory (IRI) is often used for such assessment. The IRI provides a handy but not necessarily reliable method for determining what level of reading material might be appropriate for a given child. Furthermore, it is even less likely to be valid in determining a child's reading strengths and weaknesses. Some recent versions of the informal reading inventory encourage teachers to underestimate children's reading strengths and even to prescribe "remedial" work for excellent readers. Also, the various phonics, sight word, and word analysis tests that sometimes accompany the IRI have limited relevance in determining how well a child can read.

In the present article we will emphasize the importance of looking at the quality of a reader's miscues (errors), rather than the quantity. This means, in practice, that one must look at the miscues in context, determining how well they fit with the preceding and following grammar and meaning. After presenting a brief rationale for this position, we will offer an easy approach to analyzing a reader's miscues and determining what kinds of instructional approaches might be appropriate for that reader. Our rationale will be further developed in the next issue of *Reading Horizons*, where we will deal in depth with some of the potential weaknesses of the informal reading inventory.

I. *Quality Rather than Quantity*

One of the major problems with the IRI is that it can readily become a *quantitative* analysis of a child's errors instead of a *qualitative* analysis of the child's reading strategies. For example, the teacher is typically asked to compute the independent, instructional, and frustration reading levels for the child, using such criteria as these below. These criteria and the Reading Diagnosis Checklist discussed in our next article are from Frank May's *To Help Children Read* (1973), which in most respects is an excellent book.

May provides the following typical criteria (p. 122) for determining a child's reading level:

Reading Level	*Words Pronounced Without Error*	*Questions Answered Without Error*
Independent	about 98-100%	about 90-100%
Instructional	about 94-97%	about 70-89%
Frustration	usually below 94%	usually below 70%

Apparently assuming that "exact reading" equals "good reading," May suggests that if there is a conflict between the word recognition scores and the comprehension scores, it is usually best to rely on the word recognition scores, because they are generally more reliable.

To see how such a computation might work in actual practice, let us look at Anne's miscues below (technically, a miscue is an oral response which differs from what is cued by the text). The passage is from the beginning of *Little Circus Dog,* by Jene Barr. The © indicates that the miscue was corrected:

1 Now the band began to play. Then the lions
about
2 roared. Peter the pony ran around the ring. Bill
© let
3 the circus boy led Penny the elephant into the
Everyone
4 circus ring. Everybody forgot to eat popcorn. They

5 forgot to drink soda pop. They forgot to wave
A
6 balloons. The circus man made a bow.

7 Trixie ran into the middle of the ring. She sat
went
8 and waited. Carlo the clown ran up to Trixie.
on
9 Trixie jumped up and sat in his hand. Carlo put
the
10 Trixie on a box. Trixie stood on her hind legs.

11 Then she jumped onto Carlo's head. Trixie looked
Everyone
12 very funny sitting on Carlo's head. Everybody laughed.

Since this first grader pronounced only 92% of the words without error, her word recognition score would indicate that this selection is at her frustration level – that is, too difficult for her to read. But an examination of the actual miscues indicates that Anne preserved the essential meaning of the text; indeed, the selection was so easy for her that she recalled almost every detail

of the story. In order to determine what material is appropriate for a child, we must look at the *quality* of miscues rather than just the quantity.

II. *Words and Parts of Words*

Another problem with the IRI is that it can easily lead a teacher to dwell upon words and parts of words, as if word recognition and word analysis were equivalent to *reading*. They are not, if we define "reading" as getting the meaning of a written text. There are several points to be made in this connection: 1) an ability to recognize or analyze words in isolation does not guarantee that a child will or can use this ability in reading connected text; 2) words are normally easier to recognize in context than in isolation; 3) if a child cannot recognize certain basic "sight" words in isolation, it does not necessarily follow that he/she cannot recognize these words in a familiar context, nor does it follow that these "sight" words can best be learned if they are presented in isolation.

Our current emphasis on phonics and recognition of sight words has produced many readers who can pronounce words but who fail to attend to the author's meaning. They have been subverted from the real purpose of reading, gathering meaning from print, to performing the mechanical task of recognizing and/or saying words. And, unfortunately, some readers cannot transfer these mechanical skills learned in isolation to processing connected text.

Since word analysis skills and certainly sight vocabulary are necessary in reading, it would be more efficient to develop these strategies through the use of connected text. In such a way, the often troublesome task of transferring these skills from isolated practice to actual reading could be avoided. Furthermore, words are actually easier to recognize in context than in isolation. To convince yourself of this, you might try the following experiment. Give yourself just half a second to look at the first set of words below, then write down as many of the words as possible. Next, do the same with the second set of words:

sign the read he slowly
tears has dress her two
he permit a me gave
the wound up she string

he read the sign slowly
her dress has two tears
he gave me a permit
she wound up the string

Doubtless you could recognize and recall more words from the second set, because you could use *syntactic context* (your implicit knowledge of how sentences are put together) and *semantic context* (your knowledge of how meanings go together, your knowledge of the real world). The same is true for children: they can deal with words easier in context than in isolation, unless teaching has prevented them from doing so. This is amply demonstrated in a study by Kenneth Goodman. In the context of a story, his

first grade group correctly read 62% of the words that they had missed in isolation; his second grade group correctly read 75% of the words they had missed in isolation; and his third grade group correctly read 82% of the words they had missed in isolation (Goodman 1965).

Observations and experiments indicate, then, that readers can identify words faster in context than in isolation, and that beginning readers can often identify in context words that they could not identify at all in isolation. Why should this be so? The reason is simply this: when we are predicting (however unconsciously) what will come next, we do not need to pay as much attention to the visual appearance of words in order to identify them accurately. We are able to reduce the number of probable alternatives by using our knowledge of English syntax and our understanding of the meaning being conveyed. To test these statements, you might try to read the following sentence:

Th-r- -nc- w-s - f-sh-rm-n wh- l-v-d w-th h-s w-f- -n - m-s-r-bl- l-ttl- h-v-l cl-s- t- th- s--.

Of course no one is likely to suggest that children be given such mutilated texts to read, but it should be quite clear that if readers are making predictions from context, they usually will not need to look at all the letters in a word in order to identify it correctly. In fact, if children pay attention to all of the letters in all of the words, both reading speed and comprehension will be greatly reduced. The proficient and efficient reader uses nonvisual information in order to reduce the amount of visual information needed in recognizing words.

Using context to identify words may seem like cheating, but how often outside of the classroom do we have to deal with words that have no context whatever? The octagonal red sign provides a context for the word "Stop," the cereal box and its picture provide a context for the word "Pebbles," and the soup can provides a context for the words "Chicken Noodle." Except for signs and labels such as these, we usually encounter words in phrase or sentence context. To isolate words and parts of words is to make the task of learning to read as difficult as possible for the child, as well as to distort the normal reading process.

Thus there are at least two problems with the various phonics, sight word, and word analysis tests that often accompany the Informal Reading Inventory: 1) they imply that an ability to recognize or analyze words in isolation is necessary for reading, which is not entirely true (indeed, an undue emphasis on words and parts of words can retard reading progress); 2) such tests imply that sight words and word analysis skills can best be taught in isolation, but this is not so either. The most efficient and effective way to teach sight words and word analysis skills is to have the child read materials that are meaningful in content and predictable in structure. The child should be taught to use context to predict what is coming next, then to confirm or correct the prediction—not only by looking at the word itself, but by continually asking himself/herself "Does that sound right?" and "Does that make sense?" An example may help. Suppose the child is reading a story about Jane's father fixing their T.V. antenna and comes to the word

house in the sentence *Jane's father was on the house.* If the child is relying on sight word recognition and/or phonics but not reading for meaning, he/she may read *horse* instead of *house*. A child who is reading for meaning may predict *roof* or *house*, and only a quick glance or a minimum of word analysis is then necessary to identify the word as *house*. This identification is confirmed by the fact that *house* does indeed sound right and make sense in this context.

But we may well question whether the word *house* is much better than *roof* in this instance, since Jane's father is obviously on the roof part of the house. This returns us, then, to the original point: that to determine a child's reading ability, we must look at the *quality* of his or her miscues rather than just at the quantity. In the context given, *roof* for *house* is a high quality miscue.

III. *Analyzing Miscues and Determining Instructional Approaches*

Out of the research of Kenneth Goodman and his associates, Yetta Goodman and Carolyn Burke have developed a thorough Reading Miscue Inventory for analyzing the quality of a reader's miscues (Goodman and Burke 1972). However, the procedure is too involved and time-consuming for most classroom teachers. Hence we would like to suggest a much shorter procedure, one developed by Laura Smith. In addition to its simplicity and brevity, this procedure has another advantage: it readily enables teachers to translate analysis into instruction.

"O"			"1"			"2"			"3"			"4"		
A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Y	Y	Y	Y	Y	N	Y	N	A	Y	N	N	N	N	N
Y	Y	A	Y	N	Y	N	Y	A	N	Y	N			
			N	Y	Y	N	N	A						
			N	N	Y									

A = Semantically acceptable
B = Syntactically acceptable
C = Correction
Key
Y = Yes
N = No
A = Attempted

Obtaining and Analyzing a Reading Sample

In using the following procedure for analysis, it is best to select a whole story which is new to the reader and appropriate for his/her level of

development. However, the longer, more advanced paragraphs from IRI can also be used successfully. The following steps describe the procedure for analyzing the reader's strengths and weaknesses.

1. First, tape the child reading an unfamiliar story and have him/her retell the story. He should be told before he begins to read that 1) he will be given no help during the reading; and 2) he will be asked to retell the story after the reading. It is often useful for the teacher to outline or summarize the story before the reading, in order to identify the significant information. The reader's unaided retelling should be followed by questions based on the information included in the retelling; that is, the teacher should attempt to draw additional information from the reader but should avoid giving the reader any "new" information. Skillful questioning will enable the teacher to better evaluate the reader's understanding. The teacher might ask such questions as: "Can you tell me more about (*person, place, event mentioned by the reader*)?", "Was (*event mentioned by the reader*) the first thing that happened in the story?", and "Did anything happen after (*event mentioned by the reader*)?" Such questions often enable the reader to expand on the information included in the unaided retelling.
2. In the first two columns of the Analysis Sheet (Figure 1), list all of the miscues the reader makes and the actual word(s) in the original text. Words or names which are miscued repeatedly should only be included on the first occurrence. The teacher should notice the strategies used by the reader on these multiple occurrences and later include this information in the Teacher Observation space on the Analysis Sheet.
3. Answer the following questions about each miscue in order to begin to evaluate the reader's use of language and of content and prior knowledge in his reading. Record the answers in Columns A, B, and C of the Analysis Sheet:

   A. Did the reader's change make sense? (Yes/No)

   (This question can be interpreted in either of two ways: 1) Did the reader's change make a sensible sentence, even though the sense of the original sentence may not have been preserved? or 2) Did the readers' change preserve the sense of the original sentence? Simply decide which way to evaluate the miscues, and be consistent.)

   B. Did the change create an acceptable English structure? (Yes/No)

   C. Did the reader correct or try to correct the change? (Yes/No/Attempted)
4. Tabulate the patterns in Columns A, B, and C, using the following chart, and record the appropriate number in Column D on the Analysis Sheet. These patterns will later be used to plan instructional strategies for the reader:
5. Evaluate the reader's retelling and record Teacher Observations, such as strategies used on multiple occurrences of unknown words, dialect-related miscues, the degree to which the miscue and the text word were related graphically, the reader's apparent confidence and comfort, and

Name ______________ Date______________ Name of Story ______________

Text	Child	Did it Make Sense? (A)	Was it an Acceptable English Structure? (B)	Was it Corrected? (C)	Evaluation (d)
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					

Teacher Observations:

observations related to the reader's oral language. The amount and kinds of information a reader includes in the retelling will vary, and the teacher may need to question the reader to get a valid picture of what the reader has gotten from the story (see step 1 above). However, the reader's overall understanding of the action and the characters is more important than his/her knowledge of details.

Evaluating the Reading and Planning Instructional Strategies

The numbers in Column D can now be used to plan appropriate instructional strategies for the reader.

Evaluation "0"

If a miscue has been tabulated as an "0," this means that the miscue was semantically and syntactically acceptable, but that the reader nevertheless corrected or attempted to correct the miscue.

Any reader who has a large number (at least ⅓) of his/her miscues tabulated "0" is probably too concerned with reading every word correctly. If the reader makes the corrections rapidly and does not seem concerned about them, then there is no reason for the teacher to be concerned. But if such correction is making the child's reading less efficient, interfering with his understanding, or causing him to feel frustrated, the teacher should help him to see that exact reading is not necessary.

The following activities should help these readers see that exactness is not necessary to successful reading: (1) Give the reader a paragraph with a few blanks, misprints, or nonsense words. His task is to supply an acceptable word or phrase which is consistent with the grammar and the ideas developed in the paragraph. (2) Give the reader a paragraph with a number of underlined words. His task is to substitute a word or phrase for each of the underlined words without interfering with the author's meaning or the grammar of the paragraph. This exercise will be more difficult if the reader has a limited vocabulary. These same exercises done as a group or whole class, orally, can help the participants expand their vocabularies, since the words available to any member of the group now are available to all. These experiences will also help the readers realize that a great variety of choices can all be "correct."

Evaluation "1"

If a miscue has been tabulated as a "1," this means that 1) the miscue was semantically and syntactically acceptable, and (therefore?) not corrected; or 2) the miscue was unacceptable semantically and/or syntactically, but was corrected. Most of a good reader's miscues will fall into these categories.

Any reader who has a large number (at least ⅓) of his/her miscues tabulated "1" merely needs some chances to read and discuss what he has read. He seems to be aware that reading has to make sense and sound right. Any plan which allows time to read and discuss the reading would be useful. Discussion can be with peers (in pairs or small groups), or with an adult

(teacher, aide, parent), either on a one-to-one basis or with a very small group of students per adult.

Evaluation "2"

If a miscue has been tabulated as a "2," this means that the miscue was unacceptable semantically and/or syntactically, but that the reader attempted to correct the miscue.

Any reader who has a large number (at least ⅓) of his/her miscues tabulated "2" appears to be aware that reading has to make sense and sound right, but he or she is not yet able to make the necessary corrections.

The following activities should help the reader improve his ability to correct: (1) Read to him while he follows along in the text. (2) Have him listen to tapes or records of stories while he follows along in the text. (3) Have him do activity (2) in *Evaluation "1"* above, to expand his vocabulary. If the language structure of the material being read is unfamiliar or unusual, as it often is in folktales, poetry, etc., the problem may be the material and not the reader. Try taping the reader again, using a story written in a more familiar style. But since readers do need to be able to read a variety of materials (stories, poetry, newspapers, content area texts, directions, and so forth), expand the reader's exposure to and awareness of various styles in writing by reading aloud to him. Starting to read a long selection aloud, perhaps with the reader(s) following along in the text or on an overhead projector, will expose the reader to the author's style and make it more predictable in print. This procedure will also help the reader become familiar with the characters' names, the setting, and enough of the plot so that the reader will want to find out more by reading for himself. These strategies work equally well in a group and thus do not necessarily segregate the reader who is encountering difficulty with the unfamiliar style or vocabulary.

Evaluation "1" and "2"

Good readers typically make miscues that are semantically and syntactically acceptable and hence not corrected (a YYN pattern, tabulated as a "1" according to the chart).

However, any reader who has a large number (at least ½) of his/her miscues tabulated "1" (other than YYN) and "2" (combined) may be encountering difficulties in predicting. This is often related to lack of experience with the author's style or the topic being discussed. The teacher may need to provide further background information or exposure to that style of writing in an oral setting, by reading to the children and/or providing in-class activities which will introduce the unfamiliar topic in a non-reading situation (experiments, films, and so forth).

Evaluation "3"

If a miscue has been tabulated as a "3," this means that the miscue was semantically or syntactically unacceptable, but that the reader made no attempt to correct the miscue.

Any reader who has a large number (at least ⅓) of his/her miscues

tabulated "3" appears *not* to be aware that reading has to make sense and has to sound right. Note, however, that some readers who exhibit this pattern may simply be correcting to themselves. They will usually do well in their retelling and probably have *no real reading problem.*

By looking at the patterns in Columns A and B, the teacher can determine whether the difficulty is related to meaning (many N's in Column A) or to structure (many N's in Column B), or both.

The following activities should help readers understand that reading must "make sense" and "sound right" (sound like English): (1) Have the child write experience stories (Mary Anne Hall's *Teaching Reading Through Experience* provides helpful ideas for teachers). (2) Have the child read to a listener who asks "Does that sound right?" or "Does that make sense?" when the reader miscues in ways that do not "sound right" (syntax not acceptable) or do not "make sense" (meaning not acceptable). The listener could also help the reader make the necessary corrections if the reader is encountering great difficulty. (3) Read to the child while he follows along in the text.

Evaluation "4"

If a miscue has been tabulated as a "4," this means that the miscue was semantically *and* syntactically acceptable, but that the reader made no attempt to correct the miscue.

Any reader who has a large number (at least ⅓) of his/her miscues tabulated "4" does not know what reading is (unless the material was simply too difficult). Often readers who exhibit this pattern are unaware that the context and their own knowledge of language and the topic can give them clues to "the next word." They often expend their efforts matching letters and sounds or trying to remember words they have been taught as sight words. These readers have learned that the task in reading is merely to "say the words on the page." Often this was not the teacher's intent, but the emphasis during the teaching was such that this is the lesson perceived by the child.

The activities suggested above for readers with many "3's" are appropriate for these readers. However, activity (2) is probably less useful than the others, because the reader's first need is to develop his ability to predict, using prior knowledge and what he has read so far. If the material was simply too difficult, it would be better to retape the reader on less difficult material to get a better view of the strategies he uses while reading and the kinds of information he is able to use (semantic, syntactic, grapho-phonic, etc.).

Evaluation "3" and "4"

Any reader who has a large number (at least ½) of his/her miscues evaluated as "3" and "4" (combined) is encountering the problems described above in both *Evaluation "3"* and *Evaluation "4."* He does not understand what he is reading for, nor does he know that his knowledge of language and the topic can help him as he reads. He does not realize that

what he is reading must "make sense" and "sound right." The activities suggested in both *Evaluation "3"* and *Evaluation "4"* are appropriate for him. Mary Anne Hall's book mentioned above will be especially helpful to the teacher planning for such a reader.

IV. *Conclusion*

If reading instruction is to be based upon a solid understanding of a reader's strengths and weaknesses, it is not enough to merely look at the quantity of miscues the reader makes on a series of graded paragraphs. Rather, we must look at the *quality* of the miscues, examining each miscue in context to see whether it preserves acceptable grammar and appropriate meaning. Only then will the teacher be able to determine appropriate instructional strategies as well as suitable instructional materials.

Our suggested procedure for analyzing miscues is, of course, only one of the possible methods for examining the quality of a reader's miscues. However, it is a considerable improvement over some of the recent versions of the informal reading inventory, which focus the teacher's attention mainly on words and parts of words, without regard to whether or not the miscue preserves grammar and meaning. In the next issue of *Reading Horizons,* then, we will return to this topic, examining the kinds of inferences that may be inappropriately drawn from an informal reading inventory.

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