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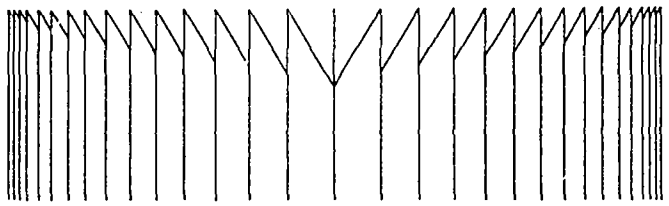
ABSTRACT

This book is a series of essays on the subject of miscue analysis, a diagnostic procedure rooted in the psycholinguistic view of reading. The focus of miscue analysis is on the broad field of reading comprehension rather than the isolated decoding of individual words and letters. The contents of this book include: "Introduction" by Sister Rosemary Winkeljohann; "Miscues: Windows on the Reading Process" by Kenneth S. Goodman; "Miscue Analysis and the Training of Junior and Senior High School English Teachers" by Jay B. Ludwig and James C. Stalker; "The Module and Miscue" by Jayne A. DeLawter; "Miscue Analysis for In-Service Reading Teachers" by Yetta M. Goodman; "Clinical Uses of Miscue Research" by William D. Page; "Building Instructional Materials" by Laura A. Smith and Margaret Lindberg; "Miscues of Non-Native Speakers of English" by Catherine Buck; "Using Miscue Analysis to Advise Content Area Teachers" by Ernie Nieratka; "Miscue Analysis in a Special Education Resource Room" by Suzanne Nieratka; and "Helping the Reader: From Miscue Analysis to Strategy Lessons" by Dorothy Watson, A bibliography is also included. (See ED 058 008, ED 039 101 and CS 000 667 for related documents.) (WR)

MISCUE ANALYSIS



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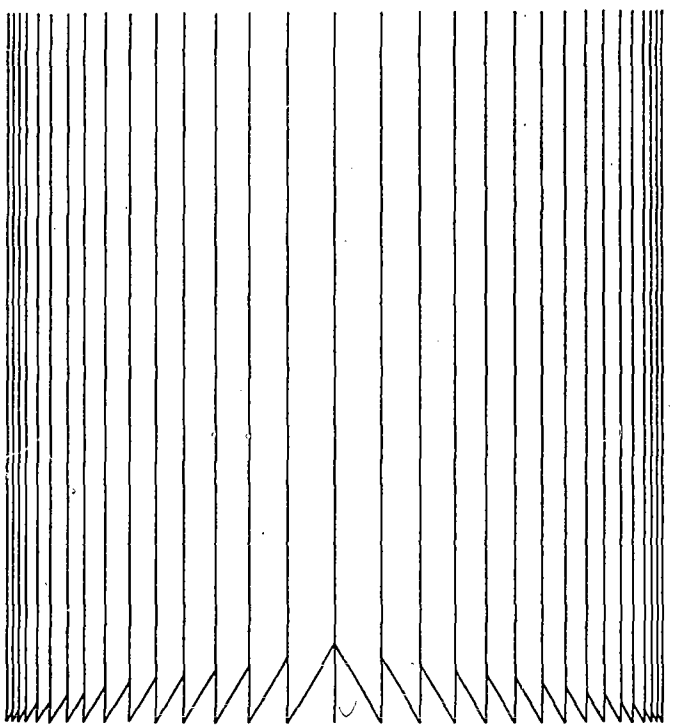

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Contents

Introduction

The educational development of teachers is effective only when it results in improved opportunities for students to learn. This usually means that teacher behavior needs to be changed, which in turn requires a change in teachers' perceptions of their functions and their roles. Without a reorientation to the teaching task, such reforms as curriculum revision, open-concept education, and individualized instruction become little more than educational fads that do not open new opportunities for student learning.

One essential change in the behavior of the teacher as he moves to open such new opportunities is his perception of himself as a diagnostician. With this role in mind, the ERIC/RCS Advisory Board suggested a publication that would deal with the reading teacher as diagnostician. At the same time, the National Council of Teachers of English co-sponsored a seminal section at the 1973 Convention of the International Reading Association. The topic focused on in both instances was one of the newer methods of diagnosis available to the reading teacher—*miscue analysis*. The Convention session was chaired by Dr. Kenneth S. Goodman, and subsequently ERIC/RCS commissioned him to edit a publication that would illustrate the applications of miscue analysis in classrooms and in professional preparation of teachers of reading.

The analysis of miscues in reading began in 1962 as a technique for studying closely what children do when they read. Reasoning that he could gain insight into the actual reading processes of a reader, Dr. Goodman developed a system for comparing *expected* oral reading responses with *observed* oral reading. The difference between the responses became the key to a new approach in teaching reading.

Five years of research in miscue analysis was funded by the United States Office of Education, Bureau of Research. Current research is funded by a grant from the National Institute of Education.

Using the technique which has come to be called miscue analysis, Dr. Yetta M. Goodman studied a group of six youngsters as they learned to read through a six-year period. Dr. Carolyn Burke served as associate director of this funded research project and focused on the use of grammatical structure by young readers. Together, Drs.

Yetta Goodman and Carolyn Burke developed the *Reading Miscue Inventory*, a concise and simple device for applying the analysis used in research thereby making it available to teachers and clinicians.

Through the funded research and a number of related doctoral studies, a new view of reading—how it is learned and why beginning readers have problems—has emerged. Miscue analysis is now a diagnostic procedure, rooted in the newer psycholinguistic view of reading. For that reason, it provides new insights for reading teachers and a new basis for developmental and remedial instruction. At the same time, those who apply miscue analysis to the actual oral reading of children gain for themselves a fundamental understanding of how the reading process actually works. They find themselves learning about reading from the inside out, as it were.

One of the elements that miscue analysis demonstrates is that, through their miscues, readers show their strengths—not only their weaknesses. Such a reorientation on the part of the teacher supports a positive view that enables beginning readers to build from their strengths. The teacher in the process is working with the learners, not at cross purposes with them.

From miscue analysis and the applications of its supporting theory, there emerges a whole new view of what is important in reading instruction. The focus shifts from the isolated decoding of individual words and letters to the broader field of comprehension. Accuracy for its own sake is thus seen to be of little importance in the broader perspective of general comprehension.

The ERIC system makes available—through the ERIC Document Reproduction Service—a wealth of information, including all federally-funded research reports since 1956. The reports of miscue research are in the ERIC system: "Theoretically Based Studies of Patterns of Miscues in Oral Reading Performance" (ED 039101), "A Study of Oral Reading Miscues That Result in Grammatical Re-Transformations" (ED 058008), and others. If the findings of specific educational research are to be rendered intelligible to teachers and applicable to teaching, considerable bodies of data must be reevaluated, focused, translated, and molded into an essentially different context. Rather than resting at a point of making research reports readily accessible, the ERIC Clearinghouses commission recognized authorities to produce state-of-the-art papers, bibliographies, and monographs in specific areas. This present publication is designed to be a bridge from the research behind miscue analysis to its practical application. In miscue analysis, one may say finally, we learn from the children about reading and we learn how to apply that new knowledge in helping them to learn to read easily and well.

Sister Rosemary Winkeljohann

Miscues: Windows on the Reading Process

Kenneth S. Goodman

Reading miscue research was undertaken for the express purpose of providing knowledge of the reading process and how it is used and acquired. In turn, this knowledge can form the basis for more effective reading instruction toward the achievement of the goal of universal literacy.

Some scholars see research as a quest for knowledge for the sake of knowledge. They see a sharp separation between research and the application of knowledge to the solution of real problems. This is a point of view which the authors of this work do not share.

We do not grudge the pure researcher his disinterest in the practical. In the course of our research we have frequently found uses for concepts that such pure research has produced. In interactions with linguists, psychologists, psycholinguists, and other academicians we have found it possible to raise issues and ask questions which stimulated them to conduct research and thereby provide further useful knowledge.

Now we are at a point in our research where we feel we know enough about how reading works that we can share with teachers and other practitioners some of our insights and their implications for reading instruction. Had our research not been reality oriented and rooted in our concern for the practical, this task of translating research into application might have been more difficult. Because we worked with real kids reading real books in real schools, the practical applications of the lessons we have learned and even the research procedures we used are more evident. Everything we know we have learned from kids. Our purpose here is to show our fellow teachers how they also may learn from kids.

Miscue analysis, which will be explained below in some detail, must be viewed as part of a pervasive re-ordering and restructuring of our understanding of reading. It is a tool which in research has contributed to development of a comprehensive theory and model of reading; in the classroom or clinic it can be used to reveal the strengths and weaknesses of pupils and the extent to which they are efficient and effective readers. But it is only useful to the extent that the user comes to view reading as the psycholinguistic process it is. Miscue analysis involves its user in examining the observed behavior of oral readers as an interaction between language and thought, as a process of constructive meaning from a graphic display. The reader's use of graphic, phonological, syntactic, and semantic information is considered.

Fortunately, one of the most powerful uses of miscue analysis is in teacher education. In the process of analyzing the miscues of a reader, the teacher or potential teacher must ask questions and consider issues he may never have thought about. Was the meaning acceptable after the miscue? Did the reader correct the miscue if it was not? If a word was substituted for another word, was it the same part of speech? How close was it to the sound and shape of the text word? Was the reader's dialect involved? Through these questions, instead of the teacher's counting errors, the quality of the miscues and their effect on meaning are the central concerns. Miscue analysis then is rooted in a psycholinguistic view of reading (one that sees thought and language interacting), but it is also a way of redirecting the focus of teachers so that they may see reading in this new perspective.

Several basic premises underlie the psycholinguistic view of reading. Reading is seen as language, in fact, it is one of the four language processes. In a literate society written language becomes a parallel to oral language. Just as *speaking* is productive oral language and *listening* is receptive aural language, so *writing* is the productive counterpart of speaking, while *reading* is the receptive process that corresponds to listening. The uses we make of oral and written language vary, but the purpose—communication—is the same. In reading, as in listening, the goal always is the comprehension of meaning.

Our research has been oriented to understanding how the reader gets meaning from language. It has helped us to see that the reader is a user of language; he is trying to get sense from what he reads. Reading instruction then must be concerned with helping the reader to become efficient and effective in this task.

Reading is a psycholinguistic process because it uses language, in written form, to get to the meaning. Psycholinguistics is the study of the interrelationships of thought and language.

When we try to understand how reading works, we must look

beyond the superficial behavior of readers. We must try to see what is happening that is causing that behavior. When we teach reading we are trying to build the competence which underlies the superficial behavior; we are not trying simply to change the behavior.

A miscue, which we define as an actual observed response in oral reading which does not match the expected response, is like a window on the reading process. Nothing the reader does in reading is accidental. Both his expected responses and his miscues are produced as he attempts to process the print and get to meaning. If we can understand how his miscues relate to the expected responses we can also begin to understand how he is using the reading process.

Here is a sentence from one story used in our research, and the miscues one pupil produced in reading it:

But I remember the camera moving close to the crib and Mr. Barnaby bending over and saying soothing things to Andrew—but not too loudly.

The reader omits a word and some word parts, inserts a word, substitutes other words, goes back at times to correct himself, and comes out with a meaningful sentence. We must be concerned with more than his superficial behavior. We must infer from it the process he has used and his competence with that process. He inserted "that" but corrected when he realized the pattern he had created was not acceptable syntax. He omitted "and" but did not correct because it was not a necessary element.

We start in miscue analysis with observed behavior, but we do not stop there. We are able, through analysis of the miscues, to see the process at work.

MISCUE ANALYSIS

Miscue analysis as a research tool began in 1963. I started with the goal of describing the reading process. The most basic task in doing this seemed to be to have subjects read, orally, a story they had never seen before, one which was somewhat difficult for them.

Even in the very earliest research attempts two things became clear. First, it was obvious that oral reading is not the accurate rendition of the text that it had been assumed to be. Readers, even good ones, make errors. Second, it was clear that linguistic insights, scientific views of language, were very much appropriate to describing reading behavior. The things the readers did were linguistic things—they were not random.

When a beginning reader substitutes "a" for "the" in a sentence like:

A
The little monkey had it.

the reader is substituting one noun marker for another. When a more advanced reader sees:

There were glaring spotlights.

and says:

There was a glaring spotlight.

that reader is processing language, he is not just saying the names of words.

In these early studies I naively looked for easily identified cause-effect relationships. For each miscue I looked for some *one* cue. In this I was operating as others had done in research on error analysis. The difference was that I was using scientific linguistics to categorize the phenomena. So when I found myself saying a miscue had a graphic cause, I found myself aware that there also were grammatical relationships involved; "lad" and "lady" look quite a bit alike but they are also both nouns and they have related meanings. Both are kinds of people. So if a reader sub-substitutes "lady" for "lad" which of these factors is the cause?

I was led then to development of an analytic taxonomy which considers the relationships between the expected response (ER) and the observed response (OR) from all possible angles. Each miscue is considered on all variables that are pertinent, and no attempt is made to establish a single cause-effect relationship. Reaching this point in understanding was dependent on coming to see that one had to look at the whole process and that the various kinds of information a reader used always interacted with each other.

This taxonomy was used then in studies of reader's miscues and modified continuously to deal with the phenomena we found in the actual reading of kids. The more we understood the more we were able to modify the miscue analysis so that in turn it could deal more completely with the miscues. A recent version of the taxonomy appeared in the *Reading Research Quarterly* (K. Goodman, 1969).

Miscue studies have now been completed on readers ranging from near beginners to proficient high school students. Miscue research studies have included black and white readers, urban and suburban, non-native speakers of English, pupils labeled perceptually handicapped and many others. Studies have been done of miscues in languages other than English. Studies have involved subjects reading basal texts, science, social studies, mathematics, fiction, and nonfiction.

One series of studies followed a small group of readers over several years of reading development (Y. Goodman, 1971).

In examining miscues some variables have emerged as being more significant than others or more indicative of proficiency than others. It is possible then to get powerful insights into a child's reading or into the reading process in general using a less complete miscue analysis than the taxonomy.

In working with teachers we have used a variety of less formal versions of miscue analysis. The *Reading Miscue Inventory* is a published program for use of miscue analysis in classroom and clinical settings (Y. Goodman and C. Burke, 1972). It concentrates on nine key variables and the patterns of miscues pupils produce. Many teachers are also applying miscue analysis to the use of traditional informal reading inventories for selecting stories from their current instructional materials to use in miscue analysis.

In all miscue analyses, procedures are relatively uniform:

1. *An appropriate selection for the pupil is made.* This is a story or other reading selection which is somewhat difficult for the pupil. He reads the entire story, so it must not be longer than he can handle at a single sitting. It must be long enough to generate 25 or more miscues (50 or more in the case of research studies). More than one selection may need to be tried to find one that is appropriate. The selection should have the continuity of meaning that unified stories or articles provide.
2. *The material is prepared for taping.* The pupil reads directly from the book. The teacher or researcher needs to have a worksheet on which the story is retyped, preserving the lines of the story exactly as they are in the book. Each line on the worksheet is numbered with page and line of the story, so that miscues may be identified as to where they occur.
3. *The reader is audiotaped and the code sheet is marked.* The reader is asked to read the story. Before he begins, light conversation puts him at ease. He is told that he will not be graded for his reading and that he will be asked to retell the story after he has read.

   He is also told that no help will be given while he is reading. He is encouraged to do the best he can to handle any problems. He can use any strategies he knows, he can guess or skip a word and go on.

   As he reads, the teacher or researcher follows, marking the miscues on the typescript. Too much happens for everything to be noted as it occurs, so the entire reading, including retelling, is tape-recorded. Later the tape is replayed to complete the marking of the miscues on the worksheet. The worksheet becomes a permanent record of the session. It becomes the basis for the miscue analysis.

4. *The subject retells the story.* After he has read, the subject is asked to retell the story without interruption. Following the unaided retelling, the reader is asked open-ended questions to probe areas he omitted in his retelling. These questions do not use any specific information which the reader has not himself reported. The teacher or researcher does not steer the reader to conclusions. The reader's mispronunciations are retained in the questioning. A comprehension rating is based on an analysis of the retelling.
5. *The miscues are coded according to the analytic procedure used* ("Taxonomy," *Reading Miscue Inventory*, or other).
6. *The patterns of miscues are studied.* Because miscue analysis gets at the process and goes beyond the superficial, it produces information that can become the basis of specific instruction. If the reader shows insufficient concern for meaning, the teacher can devote attention to building this concern. If a specific problem occurs, such as confusion of *wh* and *th* words (with, that; when, then; where, there), strategy lessons can be designed to help the reader cope with the problem.

   In noting such a problem the teacher can carefully find its limits. The reader does not interchange other words starting with *w* or *t*. He does not mix words like *whistle* and *thistle*. Only these function words are confused. In this way the teacher can design a lesson which will help the reader use meaning and grammatical structure to detect when he has made a miscue of this type. The instruction will help the reader correct when he makes the miscue, and in the process such miscues will begin to disappear as the reader makes better predictions.

The ability to use the information gained from miscue analysis in working with learners is, as was said earlier, dependent on the teacher's moving to a view of reading and reading instruction consistent with views of reading as a meaning-getting, language process.

WHAT WE KNOW ABOUT READING

Reading instruction in the last four decades has been word oriented. Basal readers have been built on this word centered view. Controlled vocabulary, a system of carefully introducing new words starting with those in very frequent use, has been the central organizing strand in reading instruction.

Phonics vs. whole word arguments are concerned with the best way to teach words. Miscue research has led us away from a word focus to a comprehension focus. As we have looked at reading from a psycholinguistic perspective, we have come to see that the word is not the most significant unit in reading. Word bound reading

instruction must be reconsidered in light of what is now known about the reading process.

Three kinds of information are available to the reader. One kind, the graphic information, reaches the reader visually. The other two, syntactic and semantic information, are supplied by the reader as he begins to process the visual input. Since the reader's goal *is meaning*, he uses as much or as little of each of these kinds of information as is necessary to get to the meaning. He makes predictions of the grammatical structure, using the control over language structure he learned when he learned oral language. He supplies semantic concepts to get the meaning from the structure. In turn his sense of syntactic structure and meaning make it possible to predict the graphic input so he is highly selective, sampling the print to confirm his prediction. In reading, what the reader thinks he sees is partly what he sees, but largely what he expects to see. As readers become more efficient, they use less and less graphic input.

Readers test the predictions they make by asking themselves if what they are reading makes sense and sounds like language. They also check themselves when the graphic input they predict is not there. In all this it is meaning which makes the system go. As long as readers are trying to get sense from what they read, they use their language competence to get to meaning. The extent to which a reader can get meaning from written language depends on how much related meaning he brings to it. That is why it is easier to read something for which the reader has a strong conceptual background.

Readers develop sampling strategies to pick only the most useful and necessary graphic cues. They develop prediction strategies to get to the underlying grammatical structure and to anticipate what they are likely to find in the print. They develop confirmation strategies to check on the validity of their predictions. And they have correction strategies to use when their predictions do not work out and they need to reprocess the graphic, syntactic, and semantic cues to get to the meaning.

When a reader's miscues are analyzed, the most important single indication of the reader's proficiency is the semantic acceptability of his miscues before correction. The reader's preoccupation with meaning will show in his miscues, because they will tend to result in language which still makes sense.

Even when readers produce nonwords they tend to retain the grammatical endings and intonation of the real word which is replaced. If they cannot quite get the meaning, they preserve the grammatical structure.

Effective readers also tend to correct miscues which result in a loss of meaning. They do this selectively. They will often not even be aware they have made miscues if meaning is not changed.

The reader, when he experiences difficulty, first asks himself what would make sense, what would fit the grammatical structure, and only after that what would match the graphic cues that would fit into the twin contexts of meaning and syntax. This keeps the value of graphic information in proper perspective and does not cause the reader to use any more information than is necessary.

Readers who are inefficient may be too much concerned with word-for-word accuracy. This may show in their miscues in a variety of ways, such as:

1. High degree of graphic correspondence between expected and observed responses in word substitution even when meaning is lost.
2. Frequent correction of miscues that do not affect the meaning.
3. Multiple attempts at getting a word's pronunciation even when it makes little difference to the comprehension of the story (proper names or foreign words, for example).

When the conceptual load in a particular selection gets too heavy for the reader he may begin to treat it as grammatical nonsense, manipulating the grammatical structure without getting to meaning. This may be reflected by a relatively high percentage of grammatical acceptability of miscues and relatively low percentage of meaning acceptability. If the reader is getting to the meaning both should be relatively high.

In judging how proficiently a reader is using the reading process, a teacher might use a procedure something like this:

1. Count the reader's miscues.
2. Subtract all those which are shifts to the reader's own dialect; these are not really miscues since they are what we should expect the reader to say in response to the print.
3. Count all the miscues which result in acceptable meaning (even if changed) before correction.
4. Count all miscues which result in unacceptable meaning but which are successfully corrected.
5. Add the miscues in steps 3 and 4. The result is the total number of miscues semantically acceptable or corrected.

This last score, expressed as a percentage of all miscues, is what we have come to call the *comprehending* score. It is a measure of the reader's ability to keep his focus successfully on meaning. It is a measure of the *quality* of the reader's miscues. What is important is not how many miscues a reader makes but what their effect on meaning is.

EMERGENCE OF NEW METHODOLOGY FOR READING INSTRUCTION

With the new, revolutionary way of viewing reading and learning to read, a new methodology is gradually emerging. This is not a psycholinguistic method of teaching reading. Psycholinguistics is the foundation on which sound methodology must be built, but psycholinguistic knowledge does not automatically translate into a method of teaching reading.

Nor is miscue analysis a method of teaching reading. It is a technique for examining and evaluating the development of control of the reading process in learners. It can, in the hands of a knowledgeable teacher, provide the basis for useful instruction. But it does not lead to a total method.

Rather, as we come to better understand the process we are trying to teach when we teach reading, we can examine current practices and methodology—keeping some, rejecting some, reshaping some, and adding some totally new elements.

What changes most is the perspective. But that is a pervasive change because it leads to a new set of criteria for judging what is of value in reading instruction.

This new perspective is process-centered, language-centered, meaning-centered. It requires a new respect for language, a new respect for the learner, and a new respect for the reading teacher.

Language is seen, in this developing methodology, as much more than the bag of words we used to think it was. It is a structured, systematic code which can be used to represent meaning. It is rule-governed; in fact the most important thing a child learns in learning a language is not the sound system or the vocabulary but the set of rules by which the language is controlled. Human language is a unique communication system because control of a relatively small set of rules enables its users to say and understand utterances they have never heard before.

The role of language in human learning has not been fully appreciated until recently. Alone among living things man can use language, the symbolic system, to organize his thoughts. It is the medium of thought and learning as well as the vehicle for communication.

But language, though wondrously complex, is no mystery. The basic process in which it is used to convey meaning is understandable. Teaching reading is helping a language user to control the receptive written language process so that a message may be constructed by the reader which corresponds in high degree to that of the writer.

Language may be dissected and pulled apart into pieces to better understand its workings, but because it is a process, these pieces, sounds, words, phrases, cease to be language apart from whole language in use. Language is not encountered by the learner except as it is used when he learns to talk—yet he does learn to talk. Because we have not properly respected language, we have tended to think we facilitated learning to read by breaking written language into bite-size pieces for learners. Instead, we turned it from easy-to-learn language into hard-to-learn abstractions.

Language has another characteristic we are only now coming to understand. It changes constantly. Probably it must change or it could not serve the changing needs of its users. But over time variants of a single language move apart; dialects develop as groups of users who are out of touch with each other, or have different interests and views, move apart. Difference in language use develops between young and old as well, since change is less likely to affect the language learned by older users in an earlier era. We have tended not to understand the legitimacy of language difference and to think of difference as deficiency. In doing so we have confused many speakers of low status dialects as we sought to teach them to read. Furthermore, we have taught inappropriate generalizations for relating letters and spelling patterns to somebody else's sound system.

The *learner* of reading has a highly developed language competence which is his greatest resource in learning to read. In fact, the key to successful reading instruction is, as it has always been, in the learner. With a new respect for the learner, we can make learning to read and write an extension of the natural language learning the child has already accomplished without professional assistance.

The motivation for learning to read is intrinsic. Human language learning is driven by the need to communicate, to understand, and to be understood. If there are messages in written language which the readers care about, they will want to understand them.

All children have the ability to acquire language; all do learn except for the very small number who have extremely severe defects. In our quest for excuses for why we have not succeeded in teaching children to read, we have often sought to find deficiency in the learners.

We cannot use inability to learn language as such an excuse because all kids can learn it and almost all do. This universal human ability to learn language is not restricted to oral language. Deaf children born to deaf parents who use sign, a visual language form, will learn it as easily as children who can hear learn to talk. So also, all children can learn written language if they need it to function in a literate society. Schools must emphasize the functional need of children for written language.

If the written language children encounter right from the beginning is whole, real, natural, and relevant, they will be able to use their existing language competence as they learn to read. We will be working *with* them rather than at cross purposes to them. Because we have not appreciated the linguistic competence of beginning readers, we have fractured written language into abstract bits and pieces and made the learners find out how to put it back together to get the sense. It is a tribute to the language learning ability of children that many of them have learned to read in spite of the obstacles placed in their way.

The *teachers* in this new methodology have a new and very important role to play. The teachers must come to understand the reading process so well that they can guide the progress of the learners. The teachers must know the signs of progress and be able to provide appropriate materials and instruction to aid the child's growth in proficiency.

In this new role the teacher is not the source of all knowledge for the learner. Rather, the teacher is helping the child to expand on his own competence. The teacher's knowledge of reading and how it is learned facilitates learning. The teacher does not need to teach child about language. The child has a user's knowledge of language. Teaching him technical insights and terms will not help him learn to read. But the way he reacts to written language is based on his language competence. An informed teacher will be able to understand and interpret his reactions.

Instructional materials, if they are richly varied and well constructed, can make the teacher's job easier and help the teacher be more effective. But they cannot substitute for concerned, enlightened teachers.

Miscue analysis can be of great use to the teachers in this task because of the specific and general insights it provides about the learner's strengths and weaknesses. His miscues reflect his control and use of the reading process.

Because the basis of the diagnosis is not rooted in a model of the process, in many diagnostic procedures the teacher is frequently advised to administer a dose of phonics regardless of the pattern the child has shown. Miscue analysis shows the process at work and will reveal changes in how this process is used.

One problem that plagues teachers is judging how much progress pupils are making toward reading proficiency. When we judge the progress of infants in learning oral language, we do it very simply. If they can make themselves understood, they are learning to talk; and if they can respond to what is said to them, they are making progress in listening. We judge, in other words, by the learners' success with

the process as they use it. Reading also should be judged by the extent to which learners can understand an increasing range of written materials.

We let ourselves confuse published reading tests with the competence in reading they are trying to assess. The subskill tests, skill check lists, and word lists do not test the ability to understand written language. They test, in large part, ability to perform with the abstract bits and pieces of language.

Miscue analysis can bring us back to reality.

Preparing Elementary Teachers to Teach Reading

Carolyn Burke

Youth learn as they live and grow
And not just what the teachers know;
Not by what the teachers say
But by living day by day.
Things they learn must be real;
Things that they can live and feel.
Youth learn as they live and grow.
Will someone tell the teachers so?

Wendy Goodman
age 13

This poem, produced by an active participant in our educational system, indicates not only the abandonment of that old adage "Children should be seen and not heard," but also prophesies the direction which our educational endeavors must begin to take.

It is not, however, only with the students of our elementary and secondary schools that we have been guilty of teaching by dictum. With clockwork regularity, education majors—our future colleagues—are inducted into the profession through undergraduate course sequences which emphasize their passive ability to regurgitate spoon-fed selections of educational practice.

UNDERGRADUATE READING COURSES: PRESENT

Current undergraduate reading courses tend to be composed of three elements: an introduction to the use of currently available read-

ing materials and programs, an introduction to the use of currently available reading evaluation instruments, and practicum experiences within a school setting. In those more lush settings where the three basics are augmented, the embellishments tend to include an historic overview of reading practices, alternate recordkeeping, management and reading period organizational procedures, or the development of informal reading inventories.

Those elements which seldom or never find their way into the program include examination of the theoretical language and thought models which underlie reading programs; the tools, procedures, and findings from applied linguistics research; or the reciprocating nature of evaluation and practice. Such pursuits are deemed, by nature, to be highly abstract and thus beyond the capabilities of the undergraduate education major.

When I questioned the basis on which one group of future elementary school teachers would judge the reading programs to which they were being exposed, I was advised by a colleague that they were not expected to judge—only to experience. My colleague and I are in agreement that the students do not have available to them sufficient experience or information to adequately judge reading materials and programs. We disagree over the notion that experiencing can be isolated from judging. Our students do judge the materials and ideas to which they are exposed; and when we fail to help them develop relevant criteria, they fall back upon such "common sense" notions as: Which procedures are easiest for me to understand and manage? Which programs are similar to the program under which I successfully became a reader? Which programs assume the greatest responsibility for planning and providing instructional materials?

Too often our present professional programs encourage future reading teachers to be passive users of other's creative endeavors. They learn to accept materials, procedures, programs without full personal examination of them. Because the students do not view themselves as being fully able to understand theory and research, a view their teachers share, they either cling blindly to the familiar ("I've taught a number of children to read using this material. I see no need to change now.") or jump promiscuously from one new program to another ("I believe in keeping up to date."). They accept or reject almost as an act of faith, not as an act of intellect.

Present undergraduate programs seem to be operating under the notion that the students need to reach some maturational level before they are capable of decision making. Mere experience in the classroom will not insure that our teachers will reappear in masters and specialists degree programs ready to cope with the theory and research they were previously judged too immature to handle. Maturity and age are not synonyms. Uncontrolled experience alone does not predictably

alter perception. The infamous fifty year gap between educational research and practice is mandated by the rigidity and passivity which is imparted by the professional training of our teachers.

UNDERGRADUATE READING COURSES: FUTURE

The key word, both for the undergraduate reading program which we want to create and for the reading teachers whom we want to produce, must be flexibility. There must be responsiveness to changing conditions, a willingness to bend and adapt as research information, social settings, and experience influence our perceptions. Flexibility suggests the controlled actions of the professional, not the wild reactions of the amateur.

Bruner, in his essay on "Education as a Social Invention,"[1] suggests that "A curriculum should involve the mastery of skills that in turn lead to the mastery of still more powerful ones, . . ." and then goes on to state that ". . . there is an appropriate version of any skill or knowledge that may be imparted at whatever age one wishes to begin teaching—however preparatory the version may be."

To achieve the desired flexibility for a pre-professional program, we must accept the notion that complex information and knowledge can be displayed concretely enough to be shared by the novice. We must focus upon current knowledge, concepts, and process.

Current knowledge. Time is of the essence in undergraduate professional training. This makes historical development an unaffordable luxury. A driver can learn to handle a car with an automatic transmission and can even comprehend the mechanics involved in its operation without first driving a stick shift. A home economist can know the varying uses of automatic washer and dryer combinations for permanent press and manmade fibers without ever having used a wringer washing machine. Likewise teachers in training can grasp current methods, theories, techniques, and even the premises of current debate without arriving at them via historic precedent.

Concepts. Yet another aspect of economy and efficiency which leads to flexibility involves approaching information and situations at the level of concept and generalization. This means learning to view things not only by their unique surface qualities but also by their recurrent deep structural qualities. Where it is possible to find underlying similarity between overtly different situations, we can hope to expand and apply already operational concepts and generalizations

1. Jerome Bruner, "Education as Social Invention," *Toward a Theory of Instruction* (New York: W. W. Norton & Company, Inc., 1966), p. 35.

from the one situation to the other. There is no need to approach each experience as new with a whole set of new facts and relationships to be learned. Though the initial learning task might be viewed as more complex, the information stored is more compact, more accessible to retrieval, and offers more generalized use. Even at points where a specific situation becomes outdated or useless, the concepts learned and held in relationship to it will remain applicable to other situations. Concepts and generalizations have longer lives than do facts.

Process. The notion that we are involved with an ongoing, evolving process is a functional one in relationship to both the future professionals we are instructing and to the act of reading. Reading is the comprehending behavior which occurs as a result of a language user's interaction with print. We must be concerned not with the reader after he has completed the task, but with the quality and kind of ways in which he interacts with the written language. Examination of the finished product—the successful reader—does not indicate the language and thought strategies which the reader applied. Useful instructional procedures will be those which highlight, for the novice reader, the comprehending strategies of the mature reader. These strategies are internal to the ongoing process.

By the same token, our undergraduates are involved in the learning process. Just as it is impossible to delay them from making judgments, it is undesirable to plan on turning them out as "finished products." We must allow them to function in real educational situations on the basis of their immediate qualifications. We do not want to turn them into disciples who will spread "the received word" but into questors who will develop sophistication as they continue to be involved in an examination of the reading process.

ADAPTING RESEARCH PROCEDURES

How do we develop these questors? . . . these professionals who will view the teacher as the holder of a two-edged sword—always endeavoring to know more about a process through the act of instructing others in it?

The recent series of studies coming out of the Reading Miscue Research Center meet the three requirements of concern with current knowledge, process orientation, and concept development. Even more important, the research procedures used in the studies are designed to instruct the researcher even as data is collected.

The following sections outline the ways in which I am trying to adapt the research procedures used in the miscue studies to an

instructional program in reading for the undergraduate teaching major.

The following sections should be read, keeping in mind the fact that we live immersed in language. Any study of language becomes a case of learning to "see the forest for the trees." We must learn to consciously overcome a natural inclination to subscribe to orderly but simplistic explanations of surface level language phenomena.

AUGMENTING THE SIX STEPS

Kenneth Goodman has outlined a six step process (see page 7) through which data for any miscue study is collected and analyzed. *In quick review the steps include:*

1. Selecting an appropriate reading selection for the pupil.
2. Preparing the material for taping.
3. Audio taping the pupil's uninterrupted reading of the selection and marking his miscues on a copy of the story material.
4. Audio taping the reader's uninterrupted retelling of the story and his responses to any further open ended questioning.
5. Coding the miscues according to the questions being asked.
6. Studying the patterns of reader strategy which are indicated by the miscues.

While these steps will remain the heart of the process, they will be augmented by others and rearranged as is necessary to the instructional setting.

Two teaching/learning premises underlie all of the following procedures and experiences: first, that students should study language as they learned it—from whole to part; and secondly, that they will truly conceptualize only that which they can be helped to rediscover or discover on their own.

Protocol materials will be one consistently used instructional procedure. By definition these materials must be microcosms of the reading process—portable segments that can be brought into the classroom for study. The size and selection of these microcosms might help to focus students' attention upon specific elements of the process which will never be isolated from their natural environment.

A FIRST READING ENCOUNTER

Each of us has invested a number of years learning to read within a school setting. Education majors have further registered their con-

fidence in their own reading achievement by apprenticing themselves to a calling which demands an unusual amount of reading on the part of its members. So it comes as a shock to them to discover that they cannot successfully anticipate the reading behavior of a child.

One of the first experiences which I try to provide involves listening to an audio tape of a child's uninterrupted reading of a story (step 3). (As procedures and experiences are discussed they will be related to the six research steps outlined earlier in this chapter.) For this first experience I usually pick a moderately successful reader between the ages of seven and ten. I want this to be a child who treats reading as a meaningful communication process, who demonstrates generally sound reading strategies, but who still exhibits some developmental limitations. The students are provided with a script of the story which the child is reading. All the miscues and regressions that the child produces are already marked on the script.

On the basis of the tape which they have just heard, my students are asked to informally comment on the quality of the reading, on specific processes and problems which they noted, and on things which surprised or confused them. They are further encouraged to document these statements with miscue evidence from the script. I also ask them to challenge each other's statements when they can point to contradictory evidence from the reading.

These sessions produce some typical comments and concerns. There is a general feeling that a direct relationship exists between the number of miscues made and the quality of the reading. There is a strong tendency to attribute poor phonic attack strategy as the cause for a miscue on any phonemically regular word. Some students express the feeling that the child made miscues because the selection was too difficult and probably discomforted him/her. Another widely held assumption is that any word missed is unknown to the reader.

Listening to the reading also typically produces some confusions for my students. The process which becomes most immediately visible and astounding is that of correction. They discover that the reader has the power to self-correct. Further, they discover that these corrections do not necessarily take place at the instance of the first miscue but might occur much further on in the text as the same lexical item repeatedly appears. They note that a reader can make three different attempts (guesses) at an item in as many text occurrences and read the item correctly at the fourth text occurrence.

There is one further confusion which I try to foster. Whenever it is suggested—on the basis of several miscues—that the reader is having phonic trouble with a particular letter(s)/sound relationship, I ask the students to search the text and circle all of the words which contain this spelling pattern and which were read correctly.

Frequently I end this first reading encounter by playing the child's uninterrupted retelling of the story (step 4) which he has just read. This data tends to cause the students further confusion. There is generally surprise at the coverage and depth of the reader's understanding (this contrast becomes even more startling for readers who exhibit severe problems). Information and vocabulary on which the reader miscued, and which had never been overtly corrected during the reading, are regularly used in the retelling. In some instances the reader further startles the students by actually discovering some of the uncorrected reading miscues through the very process of the retelling, producing such statements as, "Oh, that word must have been *guitar*. Now I get it."

This first encounter is meant to (1) raise to a conscious level the students' own views of the reading process—their personal models of reading and (2) to present them with data which conflict with some of their notions. It is meant to convince them that there is more to understanding the reading process than their reminiscing over their own learning experiences; that there are alternate available explanations of and views of reading.

MORE READING ENCOUNTERS

The students can begin to cope with the questions which have been raised during the first reading encounter by being immersed in successive encounters.

One very exciting and productive strategy is to arrange an oral reading session for the students themselves. When possible, I have had a private session with each student during which he reads a story or article aloud and is then asked to retell, in his own words, what he has read (steps 1-4). In this way the students have firsthand experience with a procedure which they will later use as a (1) research tool for data collection or (2) an instructional evaluation instrument.

This session has one very immediate effect. They learn that even proficient adult readers make miscues with some regularity. This information adds one more ounce of pressure to their already beseiged notion that good reading is errorless or nearly errorless. In fact, in some instances my students have been astounded to discover that the very person among them who made the most miscues also evidenced the most depth of understanding in the retelling.

They make the equally shocking discovery that they can successfully read past words for which they have no, or only a partially developed, concept and remain unaware of this situation unless asked

to define the word within the context of the material. Some of these lexical items, like *circa*, are related almost exclusively to reading situations, seldom or never appearing in speech. Others, like *convertible debentures*, are related to fields outside their interests. They are sometimes further discomforted to learn that the author had gone to the trouble of defining the unknown item within the text of the material and that they had failed to make use of these cues.

In short, they discover that there is a wide range of reading behavior among a group of educated proficient readers. The reading of individuals within this group could be benefited by learning to recognize and apply specific available reading strategies.

Still other reading encounters are needed to enhance and expand the lessons illustrated in the initial encounter. The reading of the first child must be followed by experiences with children's reading representing varying ages and reading proficiencies.

As the students' experiences with these reading encounters increase, they can begin categorizing and organizing the reading behaviors which they have witnessed. They need to develop a view of the processes, relationships, and systems which are basic to reading—the things which remain constant regardless of the reader's developmental level or proficiency. Such items are the presence of miscues, the use of self correction, the intuitive recognition and use of the grammatical structures of language.

As the students begin to consciously organize and alter their personal models of reading on the basis of these experiences, it is possible to begin presenting informal and simplified versions of reading models developed by educators, psychologists, and linguists. Such alternative views help preserve the flexibility that I previously discussed. Exposure to conflicting ideas encourages the students to critically evaluate both their own and others' positions. It reminds them that they are not searching for the one final answer.

DEVELOPING EVALUATIVE PROCEDURES

As the taped reading encounters progress, the students need to begin formalizing the questions which they use to evaluate uninterrupted reading. Through a series of class discussions, we develop a list of those questions which the students identify as significant. Each question is accompanied by an explanation of the information which it seeks and the relevance of that information to the reading process.

At this point, where the students have exhausted their present

knowledge, a short form of the *Reading Miscue Inventory*[2] is introduced. The following short form was developed by Yetta Goodman and Carolyn Burke with the assistance of Margaret Lindberg.

READING MISCUE INVENTORY—SHORT FORM

Words in Context

Questions 1, 2, and 3 are answered for each substitution miscue. Under the column headed *Text* list each text item that is involved in a substitution miscue. Next to it, under the column heading *Reader*, list the item which the reader substituted. Answer the following questions for each of these pairs of items.

1. Graphic Similarity: How much do the two words *look* alike?
2. Sound Similarity: How much do the two words *sound* alike?
3. Grammatical Function: Is the grammatical function of the reader's word the same as the grammatical function of the text word? (To help answer this question read the text sentence with the reader's miscue in it.)

Structure and Meaning

Questions 4, 5, 6, 7, and 8 are answered for each sentence containing miscues. Number each sentence in the text and place the numbers for sentences containing miscues under the column headed *Sentence Number*. Next to this, in the column headed *Number of Miscues*, indicate the number of miscues contained in each of the sentences.

4. Syntactic Acceptability: Is the sentence involving the miscues syntactically (grammar) acceptable?
5. Semantic Acceptability: Is the sentence involving the miscues semantically (meaning) acceptable?
6. Meaning Change: Is there a change in meaning involved in the sentence?
7. Correction and Semantic Acceptability: Do corrections by the reader make the sentence semantically acceptable?

With the Inventory—Short Form the students now re-approach the taped readings. They are able to derive comparative information on reader's varying use of grammatical and semantic structure, of letter/sound relationships, and of contextual meaning. As they build a backlog of readers whom they have coded, the students move from generalized to more delineated expectations concerning reader's use of language cueing systems.

2. *Reading Miscue Inventory*, a kit compiled by Yetta Goodman and Carolyn Burke, contains a manual, coding sheets, profile sheets, selections for reading, cassette tapes of children reading, typescripts for marking miscues, and precoded worksheets and profile sheets to accompany the cassettes (New York: Macmillan, 1972).

Where their first informal encounters produce a realization that readers tend to apply their intuitive knowledge of grammar, the use of the Inventory supplies them with the information that approximately 75% of the average reader's substitution miscues retain the grammatical function of the text item.

Where their first informal encounters produce a realization that all readers tend to make use of graphophonic cues in approaching unfamiliar items, the Inventory allows them to distinguish between these two interrelated systems and to note that graphic cues are more heavily used by the average reader than are phonic cues.

The *Reading Miscue Inventory,* like most other aspects of this undergraduate program, does double duty. At its introduction the Inventory is a tool for helping the students investigate the reading process. Shortly, the students begin to apply it as an evaluation instrument in analyzing the reading development and needs of individual children. All that changes is the user's perspective. The first uses initiate the development of that fund of language knowledge which becomes the basis for later evaluations of specific reading behaviors.

These foregoing seven questions with their accompanying coding sheets and reader profile accomplish three purposes:

1. They demonstrate one plausible and economical organizational procedure for collecting, analyzing, and preserving reading information.
2. Several of the questions represent information which the students have called for on their own list. Yet the way questions are asked and the choices which are measured are new to them.
3. Some of the questions seek information which the students have been vaguely aware was available but for which they have either failed to see the relevance or have been unable to organize.

There is no better demonstration of Bruner's point—that an "appropriate version" of any knowledge can be shared—than the creation and use of the various *Reading Miscue Inventory* forms.

The progenitor of all such forms is, of course, the "Goodman Taxonomy of Reading Miscues."[3] As has been described in the first chapter, this is a highly complex and sophisticated research instrument calling for considerable background on the part of the user. Evolving from this instrument was the *Reading Miscue Inventory.* Its intended users are inservice classroom teachers and reading specialists. The Inventory distills the eighteen questions, involving from four to fifteen possible responses each, of the Taxonomy down to nine questions involving three choices each. The short form of the Inventory, involv-

3. For this, see Kenneth S. Goodman, "Analysis of Oral Reading Miscues: Applied Psycholinguistics," *Reading Research Quarterly* 1 (Fall 1969): 9-29.

ing only seven questions, is currently being developed with the needs and background of the preservice teacher in mind. Of course, even the informal questions which the students are first encouraged to devise are a primary version of the Inventories and of the Taxonomy.

Certainly, as these instruments become more informal and more simplified they lose some of their power and sharpness. What they do not lose are their basic concepts and focus. The first informal questions are distillations of the more exhaustive inquiries of the Inventories and the Taxonomy. The insights into language developed at the informal stages make possible the understandings and uses of the more formal procedures. They even create, within the learner, the need for them. The need to know is one addiction which the educational system can afford to support.

TAPING READERS

Both this section and the one following discuss activities which are appropriate to the undergraduate's needs and experiences, but both involve working with a live reader. A school-related practicum where the students work in one-to-one situations with readers of varying ages is most helpful. If each student can have a taping experience with one child at an age level which interests him/her, the combined experiences of the class members will create a broad picture of the developmental reading process.

Where this is not possible the students can be encouraged to entice a young relative or neighbor's child into reading for them. Finally, a last ditch stand can always be taken by having the students read for each other in private sessions. These last two suggestions involve some loss of developmental data but will still meet the three basic objectives for this experience. The students will:

1. be active observers of a specific instance of reading in progress;
2. have direct responsibility for providing appropriate reading material for a specific reader (steps 1 and 2); and
3. experience the demands and limitations of an open-ended questioning technique (step 4).

An active observer to the reading process is one who has a general concern for evaluating both the intent of the reader and the strategies which he applies. He/she might even have organized the specific reading situation in order to focus the observations to be made. However, during the actual reading the observer remains a neutral onlooker only. The reading process is not interrupted by teaching, the supplying of information, or by any vocal or facial ex-

pressions reflecting the reader's progress. The situation must reflect only and entirely the resources of the reader. To become an active observer involves developing faith in the independence, flexibility and language experience of children. We cannot measure the full extent of children's language resources unless we allow children the opportunity to use them.

It is the development of the "feel" for a child's language and experience background and his reading potential which is used in selecting appropriate reading materials. This task, which at first seems so simple, is fraught with problems. The first shock is to discover that most of our notions concerning complexity and readability are so vague and generalized as to leave us helpless when examining a piece of reading material. We find out just how much we have relied on those graded numbers stamped on the spines of basal readers.

Then we must deal with the fact that we are purposely selecting material which will cause the reader some difficulty. We want the reader to miscue. We want the material to contain unexpected and unknown elements so that we can evaluate the reader's available strategies. Initially a student will tend to hold back at this point because such material would seem to put the reader in a stress situation. Only direct experience will completely convince future teachers that it is the unattainable instructional demands for perfect or near perfect readings that distress readers and not the inexactness of their reading.

The final factor affecting material selection involves estimating the reader's ability. Predictions derived from observing instructional reading situations usually turn out to underestimate the reader. The single significant factor creating this discrepancy is the uninterrupted nature of the evaluation reading task. That very procedure which at first glance would seem to put pressure on the reader actually allows for the use of strategies which are either not available or severely limited during disrupted reading. One strategy involves the opportunity to correct (1) on the basis of unacceptable or partially acceptable sentence structure, (2) on the basis of unacceptable or partially acceptable sentence meaning, or (3) after multiple occurrences of a word or phrase within a text. Another strategy allows for the meaning of an unknown item to be built gradually as contextual cues mount up.

The miscue research has established two kinds of meaning gaining which need to be measured. First is the general intent and purpose with which a reader attacks print. The usual pattern of reading strategies which a reader applies indicates whether he reads for meaning or attacks the process merely as one of recoding print to sound. This general intent we call comprehending. The comprehend-

ing score for a reader can be determined by relating the correction, structural acceptability, and meaning acceptability questions for each miscue. The second measure involves the specific information which the reader possesses after reading a selection. This we call the comprehension score. The comprehension score is determined by examining the reader's retelling of the story and his responses to open-ended questions.

For the same basic reasons that the reading is uninterrupted, the reader is initially encouraged to retell the story in his own words—without prompting or questions. This retelling represents those organizational patterns (events, characters, etc.) which the reader selects as important.

Because the reader is going to be evaluated on a breakdown of the story which includes characters, setting, theme, plot, and events, open-ended questions are asked covering any aspects not handled in the retelling. These questions must use only information already supplied by the reader so as not to be leading. While some students can prepare such questions if given time to think, reread, and organize on paper, they find that it takes much mental agility to do so on the basis of rapid mental calculations during a taping session.

COMPARING EVALUATIVE PROCEDURES

The experiences connected with taping a reader—selecting material, being an active observer, using open-ended questioning techniques—create a general respect for the language abilities and independence of all readers. The opportunity to compare alternate evaluative procedures can supply more specific evidence concerning the relationship between the reader's behavior and the reading situation.

Many presently used teaching procedures and materials as well as many published evaluation instruments involve the use of short segments of written material and interject instruction into the reading process.

John reads the paragraph out loud. If he has trouble with a word, his teacher will remind him of specific word recognition strategies which he has available for use. The ongoing reading will stop while she and John work at the word. The word handled, John will complete the paragraph. Jean reads the paragraph out loud. If she has trouble with a word, her teacher will quickly supply it and the reading will continue. Both children take a standardized reading test in which the comprehension subtest is composed of a series of short,

two-to-four-sentence paragraphs followed by multiple choice questions.

Our students need to become aware that what we learn about a reader is influenced by the task we set him. Hopefully, they will go on from here to consider that what a reader learns is also influenced by the task we set him.

There is one very simple testing procedure which can demonstrate this relationship. It involves a procedure used by Kenneth Goodman in one of his earliest miscue studies.[4]

A story is selected for reading, and the vocabulary from the story is made into a word list. The reader is asked to first read the words on the list and then to read and retell the story. With predictable consistency, the reader successfully reads items within the context of the story which were missed on the word list. Usually there is also a higher percentage of omissions on the list items than on miscued items in context, as well as a greater use of graphophonic cues. This is yet another documentation that context allows for a use of strategies not available in isolated words.

STUDYING PATTERNS OF READING STRATEGIES

Accompanying the questions on both the short and long forms of the *Reading Miscue Inventory* is a profile sheet. This sheet simply functions to help the evaluator organize and interpret the reading information which has already been collected (see page 62). Using the short form, the profile sheet consists of the following series of questions.

MISCUE PROFILE SHEET—SHORT FORM

1. Questions 1 & 2 of the inventory are concerned with the reader's use of phonic strategies.

   How much use of phonic strategies did the reader make?

   Did the reader seem to make more use of letter shapes (graphics) or of the sounds associated with the letters?

2. When the reader made a substitution miscue did she/he tend to retain the grammatical function of the text item (Question 3)?

   How do you feel about this?

3. How successful was the reader in producing sentences which were syntactically acceptable (Question 4)?

4. Kenneth S. Goodman, "A Linguistic Study of Cues and Miscues in Reading," *Elementary English* 42 (1965): 639-643.

How successful was the reader in producing sentences which were semantically acceptable (Question 5)?

What relationship is there between these two questions?

4. What effect did the reader's miscues have upon the meaning of the text (Question 6)?
5. Under what circumstances did the reader tend to correct (Question 7)?

   How successful was she/he?
6. After having examined and evaluated this sample of reading what is your general evaluation of this person's reading ability?
7. What specific reading strategy would you consider for this person's next lesson?

The last question brings the students one jump beyond the six research steps previously outlined. This seventh step involves beginning to select and develop reading strategy lessons which reflect both the student's general knowledge of how the reading process operates and the needs of specific readers.

Many of the procedures which the students have been using to examine and evaluate language will lend themselves to reading instruction. They might begin to see the need for a reading program which makes use of, yet separates, independent reading assignments from reading strategy instruction. They might begin to encourage reader corrections by teaching the reader to ask invariably if what has been read makes sense. Dorothy Watson deals most specifically with the intent, function, and creation of reading strategy procedures later in this work.

A PARTING SHOT

That undergraduate reading curriculum which frees our future colleagues to investigate and conceptualize will make them flexible. I have in no way outlined a total undergraduate program in reading to accomplish this feat, nor have I fully documented the contributions which miscue research has made and can make to it. I do hope that I have offered some provocative and enticing samples. To paraphrase my poetic friend: "Teachers learn as they live and grow, And not just what others know. . . ."

Miscue Analysis and the Training of Junior and Senior High School English Teachers

Jay B. Ludwig and James C. Stalker

In 1969 the Michigan State University Department of English initiated a senior course in reading for prospective high school English teachers. The course—English 408—is designed to give students an understanding of the reading process and its relation to the other language arts in a form that will be immediately useful to them in the junior and senior high school classes they will soon teach. The need for such a class seems obvious. English teachers are, and should be, responsible for the literacy of all their students, if only because reading is clearly as important a language art as writing, which most English teachers have, in some fashion, been trained to teach. Schools of education have not, in the main, considered reading an appropriate subject for high school English teachers except for the few who return from the schools to graduate school for training as reading consultants. Reading has, in addition, recently become an important concern in public, governmental, and professional discussion of education—and not for the first time. To cite only one instance, the California State Assembly recently passed the Ryan Act, which requires that all candidates for both elementary and secondary certification have at least one pre-service course in reading.

Insofar as any one subject area in the public schools could be judged responsible for the literacy of the nation's students, English would and should be held accountable. But the most important reason for assuming the responsibility of teaching future classroom English teachers about reading is that literacy in the broadest, most humanistic sense is one of the basic and longstanding goals of English as a profession. The profession has from its very beginnings attempted to establish programs which would not only refine sensibilities through

the study of literature and train students in the techniques of good writing, but which would also help all students meet the demands of daily life for an alert, knowledgeable, and literate consideration of issues pertaining to personal and social concerns.

In exposing future English teachers to a knowledgeable and humanistic perspective on reading, English 408 devotes a great deal of attention to the insights into reading provided by miscue analysis—particularly as used in Y. M. Goodman's and C. L. Burke's *Reading Miscue Inventory* (1972). Reading is the chief subject of the course, but reading is approached in the context of other language arts. Miscue analysis seems particularly appropriate because of its fruitful dependence on the very best recent work in linguistics and psycholinguistics. Language is something we and our students are committed to—not only because a knowledge of language is greatly useful in the teaching and learning of writing, but also because our broader interests lie in language as one crucial symbol system within the whole range of symbolic forms out of which literature grows. Language is, in other words, the foundation for all the particular interests of English—reading and literature as well as writing and grammar. In addition, our interest in stressing interrelationships, on seeing English as a unified subject, also makes miscue analysis attractive to us. By its implicit support for what we would call cognitive concepts of human development—again growing out of the anti-behaviorism of the generative-transformational analysis of language, miscue analysis offers a model of reading which stresses the interdependency of the competencies proficient readers bring to reading and the interdependency of language systems: oral and written, receptive and productive. But it also complements—if only by its emphasis on the knowledge and creativity which reading errors often show—the rich, active, multiform, and highly individual capacity for experience which all students bring to the classroom. From its beginning, English 408 has been eclectic. We have studied and made judgments about reading research on the basis of our experience as teachers and observers in junior and senior high schools as well as in the university. Miscue analysis has become central to the course because it offers our students a perspective on reading which extends and deepens their understanding of all the language arts.

English 408 consists of three components, all of which contribute about equally to the course: (1) classroom work on miscue analysis, the psycholinguistics of reading, and developmental reading programs; (2) field experience in local junior and senior high schools as well as, occasionally, in elementary schools and community colleges; (3) workshops in specialized areas in reading and the language arts. In the classroom, our basic goals are to help our students become as knowledgeable as possible about reading as a language activity and

to recognize the implications such knowledge has for their day-to-day work as English teachers in the public schools. Typically, our students will have taken at least one course in applied linguistics, or English education, or both.

The course begins with an overview of the process of reading, usually accomplished through study of works such as: F. Smith's *Understanding Reading* (1971); K. Goodman and O. Niles' *Reading: Process and Program* (1970); and Hodges and Rudorf's *Language and Learning to Read: What Teachers Should Know about Language* (1972). The important topics in this section of the course include: language acquisition and development, the systemic nature of language, concepts from communication theory relevant to reading, and pertinent information about perceptual and neurological components of the reading process. This first section of the course serves to emphasize to our students how wonderfully complex reading is and how much it depends on the language capacity we have developed, simply by virtue of our ability to speak and understand oral language. It also prepares our students for an examination of the *Reading Miscue Inventory*. Classroom work on the *RMI* is preparation, in turn, for the field experience; one function of this is to test and particularize the concepts of reading discussed in the works mentioned earlier. Discussions of the *RMI* and the psycholinguistics of reading go on throughout the course, but they are particularly emphasized in the first part. In the latter part, emphasis is on ways in which our future teachers can directly and indirectly help strengthen their students as readers. Here we discuss the reading strategy lessons in the *RMI*, both as practical materials for direct help in reading and as models of the way in which direct help can best draw on the strengths which even the poorest readers have. In addition, the class examines possible variations on programs which stress the importance of learning to read by reading as well as teaching strategies which use what we have come to call a language-experience approach These programs, or strategies, relate reading to writing and both to personal experiences of the students themselves. For example, note one described in Fader and McNeill's *Hooked on Books: Program and Proof* (1968). In this section of the course, works such as Moffett's *A Student-Centered Language Arts Curriculum, Grades K-13* (1968) or James E. Miller's *Word, Self, Reality* (1972) provide useful ways of helping students become more sensitive to language—both as readers and as writers.

The field experience component of the course is tutorial. Our students spend one half-day a week in one school for the whole quarter. They tutor at most three or four students, though they come in contact with many more. The aims of the field experience are (1) to familiarize our students with the *RMI* by using it to investigate at

least one youngster's reading strengths and weaknesses, (2) to show them what is involved in helping the students they tutor improve their reading, and (3) to provide an opportunity for them to see how one school is handling the teaching of reading. Because it stresses individual interaction between our students and the three or four junior or senior high students assigned to them, the field experience program is flexible enough to allow our students to be helpful to the young readers they tutor. At the same time, our students learn from the young readers.

What our students almost always learn from their field experience is that the problem readers assigned to them are not as hopeless as test scores would suggest, and reading, for each of these problem readers, is tied very closely to the attitudes he has developed toward reading, toward school, and toward himself. In the process of making these discoveries, our students are also experimenting with ideas about reading strategies discussed in class: by choosing books for their students, by reading and discussing books with them, and by working on the reading in each of the courses their students are taking. Typically our students come away from their field experience with an increased sensitivity to and knowledge about the problems of teaching reading in junior and senior high. They are often chastened by the complexity of what they find, by the subtle dynamics which lie behind the very notions of motivation and skill as those terms apply to reading. Through use of the *RMI* they are also impressed by the immense variety of problems occasioned by the intricacies of spoken and written language. They directly observe their students' language and their experiences in confronting the printed language of their schoolbooks and other books that our student-teachers bring in for the youngsters. This field experience has proved to be of substantial practical value to our students, but it is also important because it shows them just how subtle and complex the teaching of reading really is.

The workshops that take place throughout the quarter are designed to extend our students' understanding of reading beyond those contexts provided by classroom work and by the field experience. These workshops are led by regular MSU staff as well as by consultants from outside the university. They are held, with occasional exceptions, once a week for an hour. Topics are often specialized. One workshop deals with the history of reading and reading instruction; beginning with the rise of a mass reading public in the nineteenth century, it surveys the history of reading research and teaching methodology to the present time. Other workshops deal with subjects such as dialect interference in reading, Black English, and the problems of helping bilingual and bicultural readers. The workshops also provide opportunities for our students to further the kinds

of learning which take place in the field experience. Elementary school teachers who use the language-experience approach to initial reading have spoken at the workshops, as have reading consultants experienced in helping teachers deal with reading in their classes. Our students have also benefitted from the knowledge of Professor Yetta Goodman, co-author of the *RMI* and a teacher with considerable experience in public schools. The workshops serve to extend our students' conceptions of reading by presenting ideas which we do not have time to develop in the classroom or in the field experience. By isolating these workshop sessions from regular class time, we keep their content from competing with the ideas which are dealt with in class. At the same time, the importance of the topics discussed in the workshops is underlined by presenting them in a different, and special, format.

As the preceding description suggests, the principle upon which this course is built is that reading is a language-processing activity which takes place in order for the reader to gain meaning from the text. Meaning must be derived from the context and experience of the reader as well as from the text. We lead our students to expect that reading, or any language processing, should inevitably arouse a response in the reader. In helping our students gain these insights into reading, we encounter a number of difficulties and frustrations. Most important among them are the students' lack of sophistication about language and their preconceived notions as to the form teaching reading should take. The introductory course in language study which they have previously taken introduces students to linguistic concepts, but does not necessarily bridge the gap between concepts and application. That bridge must be built in this course, and miscue analysis becomes the abutment upon which we build.

Most students come to the course with only experiential knowledge of reading—they are readers who sometimes remember vaguely how they learned to read, or remember not at all. They recall ubiquitous reading groups or the round-robin process fairly consistently, they remember "planning ahead" during the reading period. Probably we all recollect counting those ahead of us and their corresponding paragraphs, so that we could silently practice "our" paragraph ahead of time. After all, we wanted to put on a good performance for the teacher. From such common experience, the students have learned a common model: reading is good oral performance, one in which we produce a minimum of errors and, ideally, read with "feeling." The oral performance model, of course, requires concentration on the accurate reproduction in sound of the print in the text.

Students come to class expecting to learn an appropriate methodology for teaching oral production—with the corollary notion that

reading is first an oral skill and secondly and somewhat mysteriously, a silent skill. Furthermore, they often assume that teaching reading at the secondary level is essentially like teaching initial reading. Initial reading methods simply did not "take," and we need to repeat them—perhaps with more sophistication in the form of disguising them.

Rather than directly attacking their notions, we offer our students a countermodel based initially on miscue analysis. Approximately the first three weeks or so of classroom time is devoted to explanation and discussion of miscue analysis and psycholinguistic theory, their mutual basic concepts and relationships. We practice coding miscues gleaned from previous student analysis, from examples in the *Reading Miscue Inventory,* and from readings done by students in the class. This last source is particularly effective because our students learn that they, as proficient readers, also miscue while reading; hence, the fact of miscueing is a constant for all readers. Kinds and qualities of miscues vary for differing levels of proficiency. Coding practice focuses the student's attention on the multi-system structure of language and the reader's varying reliance on the syntactic, semantic, and graphemic systems contained in the text. Miscue analysis teaches students to approach the diagnosis of reading as if it were unified language processing. It gives us ample opportunity to introduce and elaborate on the psycholinguistic research pertinent to the teaching and learning of reading.

We view the explanation of the psycholinguistic theory necessary for adequate understanding of the reading process as a very important aspect of the course. We feel that students with a solid theoretical base can generate good pragmatic teaching strategies for unpredictable and varied contexts. However, we are also aware that presentation of theory without application could be wasted simply because the theory may directly contradict other methods of teaching reading the students may have learned by themselves, in other courses, or in different contexts. Discussion and consideration of miscue analysis speaks to these problems in that it suggests a viable approach to teaching reading other than by using sound-letter correspondence or whole word methods; quite naturally this raises the question: What justification is there for assuming that concentration on sound-letter correspondence is not adequate?

At the secondary level, these problems are particularly acute, since most students in remedial reading classes have been exposed repeatedly to various sound-letter methods but are still classed as nonreaders, disabled readers, or remedial readers. It becomes clear through class discussion, and through field experience which will be discussed later, that reading for secondary students must be consid-

ered from a new perspective. The principles inherent in miscue analysis, made overt and substantiated by reference to psycholinguistic theory, bring this new perspective to the classroom.

Psycholinguistic theory establishes a new perspective. Students learn that language is unified internally and operates in some cognitive context which provides the impetus for its use. This cognitive context recognizes in part the experiences of the reader as a functioning individual and as a member of various cultural subgroups; hence, the language the reader reads is part of a larger unity—one which encompasses the reader's personal and cultural life, past, present, and future. Once we have established that the reader is processing print language for meaning and have determined the particular strengths and weaknesses he exhibits in his language processing, we must incorporate a consideration of the reader's conceptual and experiential growth as a necessary corollary to his language growth. A course which concentrates on the language processes of the reader without concerning itself with the wider context of language as cultural artifact and conceptual tool would be an incomplete course. In the middle third of the course, we turn to sources such as Fader and McNeill's *Hooked on Books* and consider the experience of the reader and his response to his reading.

We utilize various modes in the classroom to increase the students' awareness of reading as related to both language and experience. One popular method is to select a novel such as W. Miller's *The Cool World* (1959) or Burgess's *A Clockwork Orange* (1963) for students to read and discuss in class. We must turn to novels such as these to find language and experience sufficiently tangential to our students' experiences. Since they are English literature majors, they have incorporated the language and experience of traditional novels into their lives. They can process the language of *Cool World* or *Clockwork Orange*, but usually with some initial difficulty.

Cool World offers a real language different enough from their own that they must learn to cope on the basis of the language they come to the novel with. Whereas *Clockwork Orange* offers the same challenge, it presents a new language devised by Burgess. Both novels offer cognitively different cultures and experience bases. As with the languages, students find that they can cope on the basis of their own past experiences—usually with some initial difficulty. In effect, both novels are harder to "read" than the novels they encounter in their literature courses because both the language and experiential base are tangential to those of their own.

Progression through their experiences with the two novels is something like the following. They find that they can "read" these novels with limited understanding, in the sense of obtaining some meaning. Both novels are strange, odd, and funny. Class discussion of the

novels becomes a growth process. Students trade ideas and insights, coming to a fuller understanding of the novels. On returning to the novels, one finds them easier reading. Both books become interesting, exciting, or—at the least—comprehensible. In more technical terms, class discussion gives students an opportunity to reorganize and develop their original, personal conceptualizations of the novels through comparison with those of other students. They use the experience and language of other students to develop and expand their own experience in regard to the novel under discussion. In this classroom interchange, they learn that language processing and conceptual processing are at the very least interdependent; that competence in one facet leads to and enhances competence in the other facet. After developing fuller cognitive structures, they can "read" the novels with increased understanding.

For the sake of organization, we have been speaking as if the classroom were the central point of learning. In fact, principles learned in the classroom find support and reality in the junior and senior high school classrooms to which our students go for the field experience component of the course. Just as we find miscue analysis an eminently practical and effective device for teaching our students about the systematic nature of language processing, they find it a useful tool for understanding the students they tutor in the field experience. The articulation of the miscue analysis/psycholinguistic mode with the language experience/response to reading mode would be incomplete and ineffective were it not for the knowledge and experience the students gain in the field experience. The weekly encounters with junior and senior high school students sharply focus the problems discussed in class and realistically raise questions of applicability to secondary reading problems in implementation of practical and useful programs for the readers.

Although the progression in class is usually from miscue analysis and psycholinguistic theory to experience and response to reading, we find that the field experience provides a counterbalancing sequence. The college student's first field requirement is to assess a junior high school student's reading ability on the basis of the *Reading Miscue Inventory*. However, the first step in giving the *RMI* is the selection of a suitable piece for the student to read. To do so, our students must probe the reader's background to determine who he is and what kind of conceptual and experiential background he brings to the reading process. They must spend time talking with the reader, and usually this process will take from two to three weeks. In this time, the student is focusing on the reader as an individual. An inappropriate selection will overload the conceptual capacities of the reader so badly that his language processing will be impaired; hence, the miscue analysis will reveal little true data about the read-

er's strengths. The analysis of the miscues in the reading selection complements in-class discussion of miscue analysis through the direct experience of examining how a particular reader processes language. The theoretical concerns of psycholinguistics become the practical concerns of how a given reader has manipulated his language while reading. This intensive analysis of at least one student's reading clarifies our students' knowledge of the integrity of the reading process; therefore, the theoretical construct of the classroom comes alive in the field experience.

Although used as an educational tool for students to gain insight into the reading process, the *RMI* is a diagnostic instrument which aids in determining the strengths and weaknesses of the reader. Our students find that it serves both purposes. After their initial reaction of "So that's what reading is all about," they turn to the question "What do I do to help this reader develop his strengths?" They know something of his interests and experiences and something of his strengths and weakness in language processing. They want to help the reader develop strategies leading to proficient reading.

The integration of field experience with classroom work focusing on language experience and miscue analysis comes to fruition in the strategies developed for the reader who has been our student's central concern for a number of weeks and rounds out the final third of the term. These strategies must always grow out of the knowledge obtained about the reader. If he is strong in grammatical relationships, but weak in comprehension, the strategies must build on his grammatical strengths to lead to comprehension strengths. Furthermore, the strategy must offer practice in reading—even though that reading may be controlled for a particular language structure or system. The reading strategy devised or selected must provide language and experiential context appropriate to the reader. At the secondary level, this last admonition is of vital importance. Too often we offer problem secondary readers experientially inappropriate material (often made more difficult by being presented in language inappropriate for their developmental level) because we assume that readers who read badly think immaturely. Our students look at commercially prepared materials and programs in the light of their knowledge of miscue analysis, psycholinguistic theory, and appropriateness for the experience of the reader. They use what they can and devise what they need. We discuss specific problems in class, discuss the material found and devised, and try it with readers in the field.

As English 408 continues to evolve, its basic identity is settled. Psycholinguistics, miscue analysis, and the assumptions about human development shared will continue to be at the heart of the course. These elements provide immediate practical knowledge for our students to use in their teaching while simultaneously offering avenues

for them to refocus and deepen their understanding of the work in language and literature which has occupied them as university students of English. The ideas these students work with in the course show them underlying principles operating in their development as users of language and establish the connections between that process of development and the developmental patterns field experience has lead students to note and value in readers similar to those they will teach.

The course will undergo changes—but not ones that will affect the basic principles on which it is now built. The changes we foresee will consist, as far as can be predicted, of applying those basic principles more thoroughly and more broadly. One direction the course seems likely to take is already clear. Students in English 408 now feel keenly the difficulty of coming to terms with the ideas and experiences of the course in only nine weeks. They want more field experience, and they want a chance to develop reading programs that extend the applications of basic principles beyond the limitations of a weekly tutorial.

Other frustrations suggest possibilities for enlarging the course content. In their tutoring, our students often encounter problems related to the style and organization of content-area textbooks. Miscue analysis is especially useful in dealing with these problems because it can show—with authority and in careful detail—how the language of content-area textbooks produces unnecessary problems for readers. Similarly, our students' experiences in using the *RMI* in tutoring has generated questions about the reading and teaching of literature, questions that would probably modify or extend our sense of how literature should be taught. For instance, in what ways can this study be furthered by sensitizing students to *hearing* literature? What effect will these developments have on the English program? We believe the questions our students raise and the frustrations they feel are signs of the vigor of English 408. They suggest that the course has not pretended that an activity as complex as reading can be laid in state on a simplistic and inhumane set of theories; rather, they suggest that the course has provided a point of view that is challenging enough to make the formulation of such questions both possible and welcome.

Organizing a Seventh Grade Reading Class Based on Psycholinguistic Insights

Vicki Gates

Once a teacher has the psycholinguistic insights produced by miscue analysis, the problem of organizing a reading class based on these insights arises. Discussed herein is a seventh grade remedial class, but the basic principles would apply to any reading class.

First of all, it is almost essential to completely individualize the class. Since each student comes to the class with different strengths, weaknesses, needs, and interests, we are fooling ourselves if we think we can truly help each one with anything less than an individualized classroom situation.

Recognizing that (1) children need to be allowed to read as much as possible and (2) interest, relevance, and the freedom of choice play an important part in learning to read, it becomes obvious that one of the best ways of individualizing a reading class is to provide a wealth of reading material. Collecting a library of paperback books is an excellent way of doing this. If school funds are not available for this, the teacher can begin frequenting garage sales, flea markets, and used book stores. Students and parents are also a good resource. It is important to keep the following in mind: (1) collect books which reflect both the interests and reading abilities of your students; (2) maintain a variety of types of reading materials (i.e., literature, "how-to" books, scientific materials, historical materials, etc.) so that students can deal with the different kinds of written language.

The next thing to do, probably the most difficult, is to discard the notion that the teacher has to *teach* all the time. Assuming the role of a facilitator of learning rather than a teacher is important. I turn the kids loose with the books, letting them choose those in which they are interested and they can read. This leaves me free to work with small groups or individual students as their needs arise and/or become apparent.

The next objective is to build language awareness and competence. There are many ways this can be accomplished: records, tapes, movies, discussions, newspapers, panels, reading to the class, etc. I have used tapes in the following manner. I have recorded books and short stories. Students then take the written material and follow along as they listen with earphones. I either have them stop listening about three-fourths of the way through and finish on their own, or they can use the tape for the entire selection. Probably the overriding consideration here would be the difficulty of the material. Records can be used in a similar manner although I use them mainly for developing oral familiarity with written language by having them merely listen. Inherent in this, of course, is their feedback to me of what they have read and/or heard.

Movies provide an excellent way to build conceptual background, spark discussions, and offer a common base for follow-up reading activities. I have found it very helpful to my students to elicit from their subject-matter teachers those concepts needed for reading the material required in those classes. This would be one criteria for selecting movies—other criteria are interest and relevancy.

Reading news articles of interest to the students is another method of building language awareness. Not only does this familiarize students with the type of written language used in such materials, but it also provides an opportunity for development of their oral language through discussions. These discussions often lead to self-motivated reading by students who wish to know more about the subject at hand.

Oral language skills can also be developed through panel discussions. Once students are instructed on the mechanics of such discussions, they can organize their own, based on books they have read in class.

The foregoing activities can be organized in many different ways. Following is a description of one mode of organization which has worked well for me:

Two rooms side by side are involved, since I am team teaching. (However, I have used essentially the same type of organization in one room.) This layout combines freedom of choice and flexibility with certain requirements. Students are initially impressed with the idea that they are to read as much as they can, and they will be allowed to choose the books they read. Certain motivational aids can be used to go along with this, such as charts—depending on the age level you are dealing with.

The students are also informed of my requirements for the quarter: (1) two different books (for example, one "how-to" book in which they have to read and follow directions, one science book such as a book on volcanoes or snakes) to insure that students deal with

a variety of written language; after this, they are to read as much as they can from any category they choose; (2) one panel discussion; (3) a project on each book they read; and (4) two "Take a Chance" cards.

These projects encompass written as well as oral modes of expression. Project ideas are printed on index cards (one per card) and the student draws his assignment at random; the variety and the element of chance aid in the enjoyment of such assignments. A card might read, "Pretend you're the author of the book you read and describe the part of the book which was the most fun to write," or "Dramatize your favorite incident in the book." I have approximately 150 cards for students to choose from.

Usually, I have students discuss the required books with me. This way, I can appropriately fit their feedback on the book to the type of material they read. The project for a "how-to" book is obvious and fun to do: students are to carry out the instructions of the book or pamphlet. We have had cooking demonstrations (complete with "goodies" to munch on), demonstrations on washing a dog, grooming a horse, applying make-up, and a variety of craft projects. All of this, of course, helps to remove reading from the abstract level with which so many students have trouble dealing.

The "Take a Chance" cards mentioned above are for language development. One card may instruct the student to write a story about a picture pasted on the card or to describe in detail directions to his house from the school, etc. Such cards are arranged for random drawing.

Students travel at will between two rooms and determine, in most cases, how they will best use their time. In one room there are over 400 paperback books; here students choose their books and read quietly. Another room is called the "Activity Room." In this room there are tape recorders and record players complete with earphones. These are at stations with a place for students to sign up for their use. Students also use this room for projects, work on "Take a Chance" cards, and panel preparation and presentation.

The Activity Room is also used for individual work with the teacher and small-group work. In determining ways in which a student can be helped, I rely on personal observations of his reading strategies from private consultations, results on the *Reading Miscue Inventory,* or both. Once a teacher has become familiar with miscue analysis, it becomes much easier to detect a student's strengths and weaknesses as he reads. From these observations can be planned either strategy groups (for students with common strengths and weaknesses) or individual work with a student. I keep a folder on each student in which is listed all books he has read, all tapes and records

he has listened to, projects, written work, *RMI* results and my recommendations, plus other significant notations.

Groups also meet in the Activity Room for concept development—ideas for which have been obtained, as mentioned previously, from subject-matter teachers and from personal observation of the needs of the students.

In addition to all of this, a time is set aside at least once a week for movies with appropriate follow-up activities and/or reading to the class. Not only do the students love to be read to, but the opportunity for them to listen to written language (as with the records and tapes) has a definite positive effect on their motivation and ability to read it.

The key to insuring that this type of program will work is an ongoing relationship with each student and a built-in system of flexibility. In a program of "structured spontaneity" such as this, the needs of the students can be dealt with as they are identified through formal or informal analysis of their miscues. At the same time, the students—in many cases for the first time—are involved with the actual reading process. The end result is gratifying for both student and teacher.

The Module and the Miscue

Jayne A. DeLawter

Modularized programs are becoming more and more common in educational institutions as attempts are made to rethink and modify traditional instructional patterns. Miscue analysis is also gathering support as scholars across the country study the reading process. It is important to consider how miscue analysis lends itself to this trend toward modularization.

An example of miscue analysis in a modularized program can be found at Governors State, a new upper division and graduate level university in Park Forest South, Illinois. Miscue analysis provides the basis of the language-reading component in Governors State's competency-based teacher education program. Three of the five modules in this component build on concepts acquired through miscue analysis.

According to the Governors State University *Educational Planning Guidelines*, a module is a performance-based unit of instruction which extends over an eight-week period. Modules typically are self-contained—they are designed around a particular idea or set of concepts. Some modules occur in a specified sequence; for others, order is not a necessary consideration.

The language-reading component in the Governors State University teacher education program consists of five modules. It is important that four of the modules be taken in order, since each one establishes concepts necessary for those that follow. The module in children's literature can be taken at any time. Miscue analysis was chosen as the basis of the language-reading component because it affords students the opportunity to learn about the reading process at the same time they discover an individual reader's reading strategies.

Before they begin miscue analysis, however, students need to establish basic concepts about language and thinking. This is the primary task of the first module. In it students examine their own personal beliefs about language as they are confronted by new information about language acquisition, cognitive development, language variation, etc. Students also collect and analyze actual language data.

In the second module, miscue analysis becomes the vehicle for student learning. Concepts acquired in the first module concerning the interrelationship of language and thinking are extended from oral language to written language. Students learn the *Reading Miscue Inventory* (Y. Goodman and C. Burke, 1972) coding procedures and analyze the oral reading of two children in order to assess their strengths and weaknesses. Because students typically assume that they know what reading is (i.e., phonics, grouping, etc.), it is crucial that they reflect on their own reading practices and assumptions. In order to meet the module's objectives, students must substantiate their assertions about the nature of reading.

The third module has two basic thrusts. Students tape children's oral reading and use miscue analysis information to plan strategy lessons for their readers. Each student also evaluates a commercially-produced reading program, using as criteria the knowledge about the reading process gained through miscue analysis.

In the last module in this sequence, students plan and develop a language-centered curriculum. At this time they draw from all the earlier modules as well as from a module—the fifth—in children's literature in order to generate a set of activities and environments which support and expand children's use of language.

A sixth module, a language arts practicum, has been projected. It is hoped that students will move beyond the collection of data in field situations to experiences in which their grounding in miscue analysis will give them alternative ways of using books with children. Their task in this module would be to plan and facilitate interaction of children and books in school settings.

This conjunction of modularized programs and miscue analysis helps to illuminate characteristics of both. Our experience at Governors State has been to discover that the employment of miscue analysis gives clues as to ways of meeting some of the goals of this particular modularized system. At the same time, we have gotten a clearer notion of some of the modularized program's limitations and have seen the need to adapt or alter some of its goals. Our understanding of miscue analysis and techniques for teaching it, meanwhile, are also affected by its being placed in the modularized framework.

As an example of the first of these processes, our employment of miscue analysis helps us find a way to pursue Governors State's goal, "interrelating conceptual knowledge and its social and human consequences." Typically, this end is sought in a fragmented way by teaching a body of knowledge, then consciously—and somewhat artificially—looking for ways to relate it to other material. Our work with miscue analysis forces us to view this interrelating more as a dialogic process. Students acquire knowledge about the reading process in order to analyze children's reading. In the course of the analysis, though, they find themselves learning much more about the reading process, which in turn alters their analyzing. There is no break between the "learning" and the "application"; both are constantly present.

Guidelines lists "individualization" and "student pacing" as other characteristics of the Governors State modular system. These goals, while healthy, need to be pursued much more carefully and selectively than is often the case. Our experience with miscue analysis suggests that intensive and more frequent meetings at the beginning of the module would be helpful in order to get students into the *Reading Miscue Inventory* procedures. If the technical problems of marking and coding are handled early, later class meetings can be more profitably spent on interpretation of miscue data. Instead of a typical pattern of class meetings once or twice a week, then, we would prefer to see frequent early meetings with less frequent regular class sessions and more independent work later on.

The practice of encouraging students to proceed more slowly, if their personal sense of pace so dictates, is not helpful with regard to miscue analysis and is often a definite hindrance. Students tend to get overwhelmed by what seems to them a complicated coding procedure. The more time they spend reflecting before they have been sufficiently exposed to the system, the more likely they are to become discouraged. Without disregarding individualization, it seems preferable here to urge students to move rapidly through the *RMI* coding procedures at least once—rather than permitting them to set their own pace. In this way, they are more likely to get far enough into the system to establish momentum and to have a better chance of recognizing a continuity between early steps in coding and later interpretation and planning.

Miscue analysis also should not be viewed as totally self-instructional. Experience with miscue analysis in a modularized program indicates clearly that interaction focused on actual data collected is critical for maximum student growth. Students need to be able to discuss their questions about specific miscues. Time must be provided for this interaction and for feedback from the faculty. Miscue analysis is not a solitary activity. It is not a "teacherless" module of instruction.

Early orientation to miscue analysis seems possible in relatively large groups, but later interaction is facilitated by small groups dealing with actual data.

Miscue analysis meets the Governors State mandate for interdisciplinary modules. Since miscue analysis is based on the view of reading as a psycholinguistic guessing game, students must deal with concepts from branches of psychology (developmental, cognitive) and linguistics (psycholinguistics, sociolinguistics).

Ways of teaching miscue analysis may be altered by being cast in a modularized system. According to the *Guidelines*, modules at Governors State are designed to be "performance-based with an emphasis on mastery." Students learn to analyze miscues by using practice tapes and must reach 90 percent agreement with the master copy before they can proceed to the next stage. In the second stage, students collect and analyze the oral reading of a second child. This analysis is checked with a partner who has done the analysis independently.

This performance-based procedure is helpful, we have found, for it restricts students from proceeding from the first to the second steps before they have actually mastered the coding process. Since analysis of children's reading strategies is not reliable if coding is inconsistent, mastery of the coding system is essential. Without some sort of performance-based check, students would be more likely to proceed too early on the assumption that their general understanding of the system is sufficient.

Because modules are often seen as freestanding and self-contained, the use of miscue analysis in a modularized program presents a risk. The risk is that miscue analysis may be isolated as a separate module —an independent eight-week experience—rather than viewed as part of a total sequence in reading and language. For example, if miscue analysis were seen as one of many isolated diagnostic techniques from which students were to select, the effectiveness of miscue analysis would be severely limited. The *Reading Miscue Inventory* clearly is not just another diagnostic instrument. To use it in that way would be to miss its unique dual function, its process orientation, and its maximum value as a vehicle for learning about the reading process.

In any program using miscue analysis, certain conditions are needed to maximize student learning. We have identified several general needs at Governors State:

Need for practice tapes. Students should have access to tapes of children indigenous to the area. They then can practice the marking system with oral reading that is similar to that which they are likely to encounter while doing their actual taping.

Need for computer assistance. Students need to have a method for fast and efficient checking of their coding prior to the interpretation phase of miscue analysis. Computer assistance in determining the

accuracy of coding would be useful and would not replace inquiry into the qualitative dimensions of the miscue analysis.

Need for "model" teachers and classrooms. Students often express interest in observing an ongoing classroom reading program based on the data gained from miscue analysis. At this point in time, there are very few places where they can witness such a program firsthand. As graduate students who teach in nearby schools are introduced to miscue analysis, this situation will improve; however, graduate students wish to see ongoing examples also.

To summarize, we have found that miscue analysis lends itself well to a modularized program. It not only serves as a substantial basis for the language-reading component of our teacher education program, but it also contributes to the achievement of stated goals of Governors State's modularized program.

Miscue Analysis for In-Service Reading Teachers

Yetta M. Goodman

When a group of elementary school teachers with many good years of service were asked recently to state the greatest problems they face in the teaching of reading, the most common answers included: (1) "reversals"; (2) "they don't sound their endings"; (3) "word attack skills"; and (4) "they regress too much."

After years of research using insights from psycholinguistics and linguistics, a large body of knowledge about the relationship among language, the learning process, and the reading process has become available. Research has proved that the concerns cited above are not, in fact, the most significant in developing reading proficiency in students. Rather, teachers need to change the focus of their concerns in reading instruction. They must move from the less significant emphasis on traditional problems to an emphasis on helping the reader *focus* on gaining *meaning* from the reading act. Reading instruction must be *comprehension-centered.* Furthermore, this focus on gaining meaning must be the central concern of teachers and students from the very beginning of reading instruction.

With a view of reading which has permeated American education —that reading is a careful, exact process—teachers have diligently taught children such skills as sounding out, reading carefully, attacking words until they "sound" right, and looking up all new words in the dictionary. Learning to use context clues within the reading setting, building concepts and ideas through reading, and integrating meaning as one reads are strategies which generally have been left for readers to develop on their own. The significance of prior experiences to reading has been given lip-service but not fully understood. Often students have been told to open a science book to page 253, to

read the chapter, and to do the answers at the end without concern for the experiences and background knowledge a reader *must* have prior to the reading experience in order to successfully understand. Generally, any student found to have "problems" in reading has been cycled back again through an emphasis on bits and pieces of language analysis which no doubt were the cause of his "problems" to begin with.

Teachers sincerely want to help children learn to read. Changes in methods and materials are not the solution to the problems of reading instruction. Rather, teachers must know as much about reading as possible so they can build a new view of the reading process which will become the basis for changing the way they teach reading. No method or material can do this for any teacher. Only a teacher's professional sense (as opposed to common sense) reflecting a sound foundation in child language development and psycholinguistic principles can help her make the necessary judgments about the materials or methods which will be most profitable at any given moment.

Miscue analysis has provided many researchers with new insights into the reading process. It can do the same for teachers and at the same time provide the teacher with the kind of significant information about an individual student's reading that has never before been available.

IN-SERVICE TRAINING IN MISCUE ANALYSIS

The description of an in-service training program in miscue analysis in this chapter is based on a three-year project which was undertaken in a suburban school district in the Southwest of the United States. Approximately thirty teachers and a hundred and fifty children were involved. The project started with ten teachers in the first year and added ten teachers each additional year. About fifty fourth-graders were involved in the first year of the project; approximately the same number of fourth graders were added in each of the following years. Children already in the project were followed for the entire three-year period. The consultants used to train the teachers had done research in miscue analysis and had been working as teacher educators for a number of years.

The focus of the project was teacher training. The major assumption was that if the teachers adequately understood what is now known about reading, this would be reflected in the reading proficiency of their students. The students in the program were all of normal intelligence, starting the fourth grade at least 1.5 years below grade level in reading (using a standardized test score). This is not

an attempt to describe or report the project. The project is not yet complete; but, since it has proven successful to date, the model of the in-service training program for teachers in the project will be used as the basis for describing various aspects of a successful in-service training program in miscue analysis.

Miscue analysis should not be undertaken casually. Methods used to evaluate miscues and the concepts involved are often new or unfamiliar. As a consequence, in-service teachers and reading specialists profit most from a carefully planned and executed in-service training program in order to acquire facility in using the analytical procedures.

The in-service training program should have the following components: (1) three to five days for introduction of concepts and procedures; (2) intermittent follow-up workshops; (3) observation and demonstrations with the individual teacher in the classroom; and (4) individual conferences with teachers.

The Introductory Workshop

During the initial training period which should be from three to five days long, teachers explore the major concepts needed to understand the reading process and are introduced to the procedures of miscue analysis. The following areas are examined:

1. Differences between reading and listening (receptive language) and writing and speaking (productive language)—all active language processes.
2. Integration of all the language processes—how each supports and aids the development of the others.
3. Significance of linguistic and cultural differences for the reading process.
4. Experiences students must have prior to reading about new or unfamiliar concepts, ideas, cultures, etc.
5. Strategies readers use—how the quality of miscues reveals the proficiency of the reader.
6. Needs for the language that students read to be in its natural form—isolated into bits and pieces of language units (out of context) which are abstract for the learner, therefore much harder to learn.

Teachers should be involved in learning these concepts through a variety of experiences. A successful initial experience can have the workshop participants read an initial paragraph or two of a novel or a newspaper or magazine article once through and then have them write down everything they remember having read. By comparing each other's responses, the teachers can see that proficient readers are concerned with the meaning of a passage rather than concentrating

on exact surface reproduction. Then, through use of prototype tapes of children reading, the teachers can mark the miscues children make as they read and compare the kinds of things the children do to the kinds of processing the adults did when reading the initial paragraphs. Through the guidance of the consultant, the teachers should begin to analyze the miscues not only as they relate to the graphic print, but how these miscues reveal a reader's concern for grammatical and semantic information as well. Having the teachers interpret the same passages and comparing the differences of interpretation among themselves can give the teachers insights into the wide range of understandings people can gain from the same information. Comparing and contrasting the phonological, grammatical, and meaning systems of their own language and their culture to the language and culture of the other teachers in the workshop can help the workshop participants begin to understand how different life experiences influence understandings as well as language patterns and dialects.

Through the use of the tapes of children reading, the teachers can begin miscue analysis and learn the procedures necessary to assure adequate taping samples. The student reads orally a complete story from beginning to end without any assistance from the teacher except to encourage the reader to guess, omit or try the best he can to work out his own problems. It is important to observe readers operating on their own, since the majority of time a person spends reading, he is engaged in an independent activity. A good deal is learned about the strategies readers use when the student is encouraged to proceed as if he were reading independently. Oral reading is used only to get at the reading process; the process of silent reading is not observable. Having the student read a whole story, and not helping him when he reads, is an attempt at getting as close to the silent reading situation as possible. However, it must always be kept in mind that the analysis is being done on oral reading and inferences about the silent reading process must be made.

At the end of the reading, the student is asked to retell the story he has read. Since it is important that the student tell only the information which he has gained from his own reading, it is important that the teacher not reveal aspects of the story through the questions asked. Another aspect of the training program focuses on asking open-ended questions, for example: "Tell me about the story," "Who else was in the story?" or "Where did the story take place?" After going through the procedures of collecting data for miscue analysis, the questions used to examine the aspects of language which cue miscues are explained and the miscues are coded. This initial experience—i.e., using tapes of prototype readers—can help the teacher gain significant information about language and its implications for reading instruction. When the teacher applies the same procedure to one of the chil-

dren in her classroom, she will gain insight into a particular student's reading proficiency.

At the initial workshop, questions are raised by the teachers which suggest that they are already beginning to understand the significance of the new experiences and concepts of miscue analysis for classroom instruction. A number of such questions might include:

1. Does this mean that we should not be emphasizing oral reading?
2. Does this mean that we should not correct the children when they make mistakes in the class?
3. How will the other children in the class react when you do not correct mistakes?
4. When a child comes up to you and asks "What is that word?" do you tell him? What other alternatives are there?
5. What about skills? When do you teach skills?

The Reading Miscue Inventory (Y. Goodman and C. Burke, 1972) was developed during the three years of the teacher training project mentioned earlier. It is a useful tool in such a workshop. It suggests the kinds of linguistic questions which a teacher should ask about each miscue. The *RMI* provides instructions and directions for how to carry out miscue analysis and carefully outlines how the teacher can develop a reading profile for an individual reader. The *RMI* even has some suggestions for reading strategy lessons which the teacher can adapt for use with students. There are prototype tapes, readings for taping, and practice materials in a kit which may also prove useful.

The Intermittent Follow-up Workshops

All learners—even adults—need the opportunity to think through what they are learning, to try to apply their new understandings in real life situations, to explore their ramifications, and to discuss and examine their new learnings once again. Follow-up workshops should provide for this type of continuous rethinking and reexamination; even if all the concepts and procedures are presented in the initial workshop, many of them will need to be explored in greater depth.

By the time the first follow-up workshop takes place the teachers should have done complete analyses including retellings of at least two readers. Generally, the first consecutive twenty-five miscues which a reader makes during a single reading are usually sufficient to produce a pattern of the kinds of reading strategies the reader uses. These patterns can help teachers find answers to the following questions:

1. Does the reader rely on the sound-letter similarity to the exclusion of concern with gaining meaning?

2. Are the miscues which the reader corrects the ones which he should have corrected?
3. Does the reader translate somewhat consistently certain words or phrases into his own dialect?
4. Does the student habitually associate the same words with each other? Are the associations disruptive to meaning?
5. Does the student indicate through his miscues that he does not understand certain concepts or ideas which are presented by the author?
6. Is the reader able to understand certain concepts and ideas even if he mispronounces words or phrases related to the concepts?
7. To what extent does the reader succeed in interrelating the graphophonic with the semantic and syntactic cueing system as he reads?

The assessment of one or two students' readings should help the teacher gain insight into the language strengths the reader has and the areas in which a particular student needs assistance. At this point, the teachers begin to realize that the emphasis on meaning in a comprehension-centered reading program is often at odds with their previous concern with exactness in oral reading and emphasis on sounding-out skills. Understanding the incompatibility of isolated skills teaching with proficient reading strategies, which can only be developed through reading context, is an important concept for the teachers to fully accept. Realizing how language changes—depending on the context of one's linguistic environment—is a way for teachers to understand this concept. For example, when the statement "go west" is uttered, the *t* at the end of west is articulated. However, when "He lives on the westside" is spoken, the *t* at the end of west is inaudible. In the sentence, "Can you put it in the trash can?" the two words spelled c-a-n are pronounced differently, are different parts of speech, and are really two different words except for their similar spelling. Readers are unconcerned about these rules. As they read, they are involved in using the grammatical and semantic system of their language to help them get at meaning. As the Duchess moralizes in *Alice in Wonderland:* "Take care of the sense and the sounds will take care of themselves" (Carroll, 1970, p. 121). Readers use strategies which depend on the contextual setting involving the integration of the graphic, grammatical, and meaning systems. If during reading instruction the emphasis is on isolated skills and students are encouraged to apply them whenever they appear regardless of their reality in language, the instructional program may interfere with the reading process—rather than supporting the beginning student's usual eagerness to learn to read.

Another method, perhaps helpful at this point, is to indicate that a reader's knowledge of grammar and his concern for gaining meaning

is what signals to the reader that there is a misprint. A good example is the sentence: "The king and queen marched regally up the long staircase and into the place." Those of you who read "place" in the last sentence (since you were anticipating a misprint most of you probably did) went back to reread the sentence to make sure what was meant; you decided that either there was a misprint or something unusual was happening in the story. Others of you may have read "palace" and were not even aware that the word at the end of the sentence was spelled p-l-a-c-e.

Miscue analyses of some of their own students will cause the teachers to rethink some of the linguistic concepts introduced in the initial workshop. Teachers will have discovered that their readers make use of graphophonic cueing systems to some degree when they read. They are often surprised to note that when a miscue looks very much like the text word, it is not as sophisticated or high a quality miscue as a miscue which has little or no graphic or phonemic similarity to the text word.

Text: Inside the mountain *where* the stonecutter was working.
Reader: Inside the mountain *were* the stonecutter was working.
Text: "Is there going to be a party?" *exclaimed* Pat.
Reader: "Is there going to be a party?" *asked* Pat.

Teachers do not expect to discover that readers often produce syntactically acceptable sentences to a greater degree than semantically acceptable ones. A substitution miscue is often the same part of speech as the text word it replaces. Teachers are often amazed that grammar plays such a significant role during reading.

Text: Her wings were *folded quietly* at her sides.
Reader: Her wings were *floated quickly* at her sides.

Teachers become aware that a reader's miscues provide a great deal of information about the degree to which a student is understanding the written material than might be available if no miscues at all were made.

Text: He . . . went out to the hall and I followed.
. . . Ganderbai *watching* Harry's face all the time in a *curious intense* manner.
Reader: He went out to the hall and I followed *him.*
Ganderbai *watched* Harry's face all the time in a *serious tense* manner.

Teachers also may become aware that dialect miscues usually cause no change in the meaning of the text. Teachers often say that

it seems as if the reader is translating the language of the author into language most familiar and understandable to the reader.

Text: *Sven's* pet was *everybody's* pet.
Reader: *Steve* pet was *everybody* pet.
Text: He was sitting *comfortably* and *happily*.
Reader: He was sitting *comfortable* and *happy*.

As teachers examine the kinds of miscues readers make, they usually become aware that some miscues are more sophisticated than others; it makes sense to help students make better miscues than worry about eliminating miscues altogether. Teachers then can begin to explore the use of reading strategy lessons. Reading strategy lessons are carefully written materials which highlight particular problems a student might be having. Strategy lessons are written in such a way that the reader has to guess and substitute meaningful language to fit into the context of the written material. At least two paragraphs are written or selected for the reader which have language context and interesting content, but they are carefully controlled so that there is minimal language ambiguity and light concept load.

Reading strategy lessons can be written for groups who have similar problems or for a particular reader with a particular problem. Many readers, for example, have not learned that when a reader encounters a name which is too hard to pronounce, it is best to skip it or substitute another name rather than spend time sounding out something which does not add to the understanding of the text. A strategy lesson for a small group who are constantly sounding out names would be a short story using a name (which even the teacher cannot pronounce) that the teacher selects from the phone book. The teacher and the children can explore various strategies that the readers might select when they come to such names in their reading. During the follow-up workshops, teachers can share different strategy lessons with each other as well as become critical about strategy lessons based on their growing knowledge about reading and language. Also, the teachers can begin to develop criteria for writing or selecting good strategy lessons. Criteria might include the need for context to provide added information to help the reader understand certain words or concepts. Teachers can begin to explore the kinds of linguistic structures that are too difficult and ambiguous for readers, which should be avoided in the developing or selection of reading strategy lessons.

The various profiles of readers can also be discussed as more of the readers are taped during the year. These discussions will provide continuing insight into the reading process as well as specific help for the teacher in providing an instructional program for an individual, as well as for a small group, or the whole class.

Continuously during these follow-up workshops, the teachers should grapple with the questions of the main focus and goal of reading. As the teachers articulate the notion of a comprehension-centered reading program, the need for additional changes in reading instruction becomes greater. These workshops often begin to focus on types of reading programs which concentrate on meaning. Teachers often begin to explore greater uses of silent reading, the language experience approach, and individualized (personalized and self-selecting as opposed to self-pacing and programmed) reading programs. Questions begin to be raised by the teachers which indicate that teachers want information so they can proceed with changes in classroom organization, record keeping, and criteria for helping students select reading material. Teachers begin to discuss criteria for selecting basals as well as texts in other areas of the curriculum which would be in keeping with an emphasis on comprehending what is being read.

Since the teacher will not be using group activity for round-robin oral reading or for work on isolated skills, the workshop should include explorations of kinds of comprehending activities which would be most profitable during small group interactions in the classroom. These activities should help students come to grips with interpreting, understanding, and integrating meaning as they read.

Working with the Teacher in the Classroom

After a positive rapport has developed between the consultant and the teachers, teachers are usually open to having the consultant come into the classroom to offer constructive criticism and advice. The consultant can observe the teacher helping children make more efficient use of reading strategies and offer suggestions to support the teacher's growing ability. The consultant can demonstrate the use of effective reading strategies to the teacher—through work with individual readers or small groups. Often the consultant can provide the teacher with insights into particular children after reading with them in a one-to-one setting.

Students will be doing a great deal more silent reading. Strategy lessons and techniques are only used during instructional time. When students are reading, independence is encouraged by the teacher. Teachers and children often need help in developing criteria for the selection of materials.

Teachers can be helped to realize the kinds of nonreading activities and experiences which children should have prior to reading—especially in the areas of science, social studies, math, and other content fields where few students can rely on existing background and

experience. The classroom teacher may need help in setting up a variety of interest centers around the room so that the children are constantly faced with reasons for reading in a wide variety of materials and content areas.

Individual Conferences with Teachers

Teachers are often more open to discussing problems of organization, curriculum, and instruction in a one-to-one setting provided rapport is established between the teacher and the consultant. Often at a similar time as the classroom visitation, the teacher and the consultant should be able to have an opportunity for such a conference away from the classroom. In the teacher training project model used to develop this paper, a substitute usually traveled with the consultant to provide for flexibility in terms of classroom visitations and one-to-one conferencing; administrators were often willing to serve as substitutes. A substitute provides opportunities for the teacher to observe the consultant in a one-to-one situation with readers—as well as time for a quiet conference. This time should give the teacher opportunity to ask any questions. The teacher and the consultant should have the time to examine students' records and profiles to see if there are additional experiences or strategy lessons which any particular student might benefit from. These conferences give the consultant the opportunity to informally evaluate the program—as well as to gain ideas for other follow-up workshops.

Working closely and intensely with teachers in in-service training programs develops a cadre of enthusiastic disseminators. Consultants or workshop leaders should always keep in mind that as they are training teachers, these people in turn can become teacher trainers. During follow-up workshops, the teachers should be encouraged to present successful strategy lessons or any other aspect of reading instruction that would benefit the other workshop participants. Teachers should be encouraged to demonstrate for others their successful techniques in conferencing with children or teaching strategy lessons. When new teachers are added to the program, previously involved teachers can present aspects of the workshop—as well as be used to help new teachers understand the formal miscue analysis.

The process of learning about miscue analysis and its implications for classroom instruction is time consuming and hard work. A complete reading miscue inventory on a reader takes a competently-trained teacher at least half-an-hour. It is not expected that a formal miscue inventory will be done on every child in each teacher's classroom every semester; however, once teachers have completed a number of miscue analyses and have understood the implications for in-

struction, teachers will begin to use informal miscue procedures. Whenever teachers read with students, they will be evaluating miscues by asking: Does this miscue make sense in the sentence? Does it change the meaning of the text to any significant degree? When teachers have students who are not easy to assess in an informal setting, a formal *RMI* will provide necessary information to help plan constructive instructional programs for individual students. Until the teacher has proceeded through the more formal miscue analysis and training, the informal miscue inventories will have little meaning. It is hoped that as greater numbers are involved in applying the insights from miscue analysis, more informal miscue inventories will be developed and put to use.

Ms. Linda Brown, one of the teachers from the workshop, wrote the following evaluation of the miscue analysis workshop:

> Miscue analysis has helped me become aware of the complex thought processes which occur during reading. I am now able to deal individually with each child in my classroom as never before. For example, I have a male student in my room who is an "average" student, but who simply cannot read. Prior to my insights about reading as a language process, I would have used what limited knowledge I had acquired in college and tried a variety of procedures, mostly by trial and error.
>
> Using the *Reading Miscue Inventory*, however, I have much insight into those reading strategies that Rouland is using and his degree of proficiency in using those strategies.
>
> After interpreting the Profile I made on Rouland, based on an analysis of his reading, I found a dependency on the graphic-sound cueing systems, to the exclusion of the grammatical and meaning cueing systems. Rouland needs to understand that reading is supposed to sound like oral language, and he needs to understand that he makes sophisticated use of grammatical information when he speaks and can apply this same knowledge to his reading.
>
> In working with Rouland, I have made lessons for him which can prove to him that he has the ability to anticipate an author's grammatical structure. This has been done through constructing partial sentences which can be completed by a number of words. I have also taken Rouland's own stories and deleted all nouns or all verbs and have had him replace these with his own new words. This forces him to read for *meaning*. I have also had him restructure a given sentence and then paragraph, while meaning is retained. He is learning it is not the individual placement of words which is so important, but the overall meaning he is striving for. I use much of his own writing for material because of his need to see his most common English sentence structures in print; also, the content of his own materials are within his interest, background, and experience, and the conceptual load is not too great.

In helping Rouland to *predict* future events in a story for the purpose of reading for meaning, I have taken paragraphs from newspaper articles. He is given only the first few paragraphs and must complete or end the article using the information given. He then enjoys comparing his article to the actual news item, confirming his predictions.

Because reading for meaning is an essential goal with Rouland, anything I can find which forces him to look for meaning, I use. Frequently I make up interesting passages containing a significant noun or verb which is repeated a minimum of six times. The word selected is replaced with a non-word. Rouland then must use the meaning system or context to predict an appropriate real word.

Much encouragement is given to Rouland to constantly ask himself if what he is reading is making sense and if it sounds like language. Children need to select material on the basis of their own criteria of interest and ease, and feel confident that if the material is not making sense they may reject it after reading several pages or paragraphs to determine whether or not they start to gain meaning from further context clues.

When a teacher knows exactly what strategies a child employs during reading and can evaluate the quality of those strategies, the lessons a teacher can create are endless.

Analysis of Billy*

Not only have teachers shown greater understanding of the reading process through a workshop in miscue analysis, but students have shown that they improve their reading proficiency as their teachers become more knowledgeable.

Billy is typical of the students with severe reading problems, whose teachers were involved in the in-service training program in miscue analysis, used as a prototype for the development of this chapter. Billy left the third grade with a total reading score of 1.8. Billy's records revealed a decreasing rate of growth—since his growth in each successive year was less than his growth during the preceding year.

On his *RMI* Profile Sheet in September, 1970, prior to the beginning of his teacher's involvement in a miscue analysis in-service workshop, Billy revealed almost total reliance on sounding out. Of all substitution miscues 73% showed high similarity to the text. Examples include "ridy" for "ready," "kitten" for "kitchen," and "three" for "there." Few of his miscues showed a concern for meaning, and a large majority of his miscues resulted in sentences that were neither grammatically nor semantically acceptable.

During the first year of the project, Billy's teacher encouraged Billy to guess what a word or phrase might be and to substitute words

* This section written with the assistance of Barry Sherman.

or phrases for those he did not know. At the end of the school year, Billy's score on the standardized test (the same form used the previous year) rose 1.8 years. In the paragraph meaning section of the test, his score increased by 2.3 years. The support from his teacher gave Billy the confidence he needed for doing better on standardized tests. At the same time, his *RMI* Profile revealed a change in Billy's reading strategies. Although he was still producing miscues which resulted in severe loss in meaning, his miscues resulted in sentences which were most often grammatically acceptable even though they changed the meaning of the text.

Text: He stopped to think.
Billy: He stood to think.
Text: "But I don't know why."
Billy: "But I don't know who."

However, Billy's Profile the following September, 1971, when he read a more difficult selection, revealed that Billy still had a long way to go in becoming an effective reader (see Figure 1). Summertime was a regressive factor since Billy had not learned to use reading as a leisure time activity.

He again showed a heavy reliance on graphic cues since 75% of his miscues showed high graphic similarity. Eighty percent of Billy's miscues showed loss of comprehension while 84% resulted in grammatically unacceptable sentences. Billy's new teacher, trained in miscue analysis, continued to help Billy focus on meaning. He was encouraged to ask himself whether what he was reading made sense. When it didn't, he and the teacher would talk about how he could gain meaning from his reading. He was encouraged to put aside anything he could not make sense of. He was helped to select books which were interesting to him and within his ability to read with meaning. The teacher discovered what Billy liked to read and found books and magazines in which he was interested. She also provided experiences in the curriculum which would heighten his interest in a number of new areas. Strategy lessons were written or selected for Billy based on his miscue analysis. For example, Billy had a consistent habitual association and read "thought" whenever he saw the word "through." A number of lessons, such as the following, were written—whereby Billy could discover how "thought" and "through" operate in a language context—so he could make use of the grammatical and meaning systems as well as the print.

Strategy Lesson 1

Billy sat looking out of his window. He was thinking. He thought about the party he went to Saturday night. He thought about the good time everybody had. The go-carts were fun. The engine in

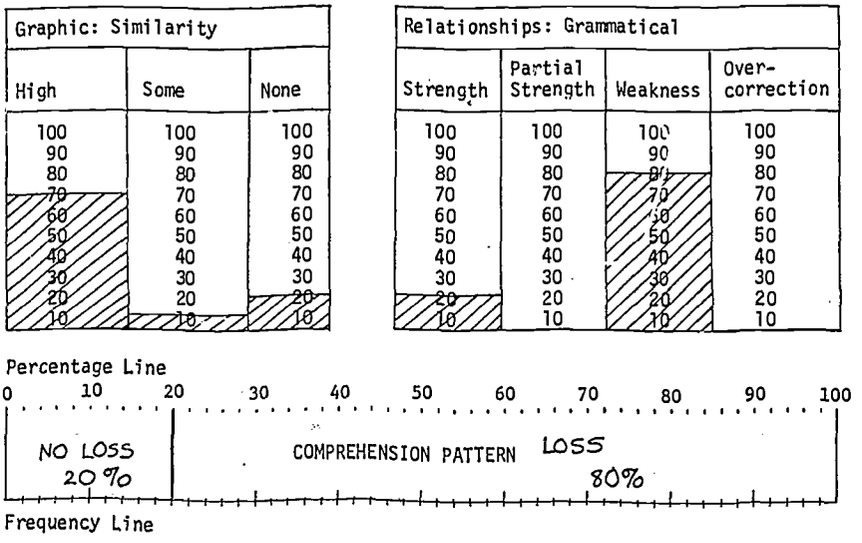


Figure 1. Billy's Profile, September, 1971

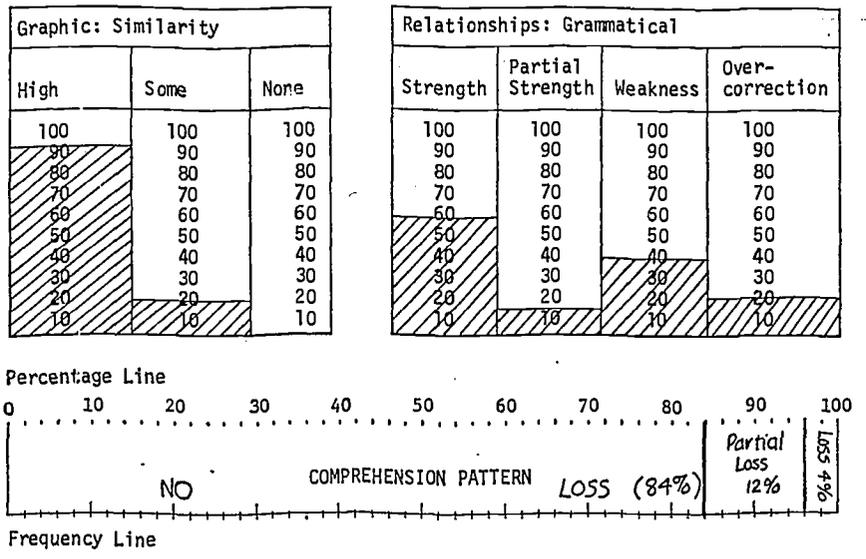


Figure 2. Billy's Profile, September, 1972

his go-cart stopped. He thought it had stopped because someone got dirt in it. "I'll have to send Zachary a thank-you note for the good party," thought Billy.

Strategy Lesson 2

Billy ran into the house through the front door as fast as he could. He threw his coat on the couch as he went through the living room. His mother had asked him not to do that anymore but he was too scared to worry about what she would say. As he ran through the hall he saw the door to his bedroom was closed. Who would have closed it?

At the end of the 1971-1972 school year, Billy's *RMI* Profile Sheet indicated a real change in his effective use of reading strategies. He showed less reliance on graphic information, with a consequent move toward integrating his use of the grammatical and meaning systems. His grammatical relationship pattern changed sharply with 72% of Billy's miscues in the strength column. Fifty-two percent of his miscues produced no loss of comprehension, while only 20% of his miscues produced loss of comprehension.

Comparing the same text section read in September, 1971, with June, 1972, shows Billy's change in strategies (see Figures 1 and 2).

Text: Her wings were folded quietly at her sides.
S'71: Here rings were folded at her sides.
J'72: Her wings were flapping quietly at her sides.

The most significant gain, however, was the following September. Billy's profile of his reading a more difficult selection than the previous June indicated that he retained his developing proficiency in use of reading strategies over the summer.

Billy's concern with graphic cues indicated that, without any direct teaching of phonics for two years, the miscues Billy produced still looked very much like the text. Billy has room for growth in becoming a proficient reader. He still reads too carefully; however, he has finally learned—under the guidance of teachers skilled in applying miscue analysis to classroom instruction—to integrate his use of the graphophonic, syntactic, and semantic cueing systems.

CONCLUSIONS

Projects which have been completed in schools using miscue analysis to train teachers and reading specialists show similar improvement in the students and greater knowledge about language and reading in the teachers. It must be stressed, however, that the under-

standing of the process must be in the teacher. The teacher, through careful study and insight, must come to believe that this view of reading will work for her in helping her students. Methodology and material selection is of secondary importance in this situation. A teacher may use a number of reading methods and materials to develop her reading program as long as there is an emphasis on comprehension as the focus of any reading done by the students. The principles inherent in helping teachers understand the reading process through miscue analysis is based on teachers being manipulators of method and materials as tools to their expertise as professionals in the classroom. Teachers need to have an understanding of the reading process, know their children well, and thereby become the decision makers in the classroom. Any learning program which does not put the teacher into a significant role in the classroom minimizes the dynamic relationship between the teacher and the learner and reduces classroom teaching to a mechanical role, rather than raising the teaching-learning interaction to the heights it can achieve.

Clinical Uses of Miscue Research

William D. Page

Miscue research represents a new source of knowledge causing unprecedented reexamination of clinical practice in reading. Miscue study (K. Goodman, 1965a) goes beyond most oral reading research in its attention to the full sweep of variation in oral reading responses. The "Goodman Taxonomy of Oral Reading Miscues" (K. Goodman, 1969) and the "Goodman Model of Reading" (K. Goodman & O. Niles, 1970, pp. 30-31) are tools providing insights into reading that clinicians and teachers can use. The view that reading is a psycholinguistic guessing game (K. Goodman, 1967) provides a theoretical base to support explanations of the complex phenomena observed in oral reading.

Clinical work in reading generally means the observation, diagnosis, and treatment of reading disability. Emphasis is on disability because the clinical model is borrowed from medicine, where it originally involved patients or persons who are ill. In this sense, the model is imperfect—for reading difficulties are not the same as bedridden illness. Miscue research shows that deviation from what an examiner expects is not always a deficit.

Clinicism includes careful scientific observation techniques. Miscue research offers productive insights into the observation process. We must be careful not to equate cold impersonalism with scientific observation; they are not necessarily the same. Miscue research suggests that a warm, cherishing attitude toward a child's language is effective for teaching and observing. Insights into the function of language in the observation process are of the utmost concern for clinical work in reading today.

Teaching new techniques to less-experienced professionals is also a clinical function. A clinic in this last sense is a center of training on-the-job. As in medicine, practitioners in reading often serve clinical internships as part of their professional preparation. Experiences with miscue observation techniques can bolster the tools of the teacher or clinician as well as prompt an unbiased scientific attitude to the

reading process. By definition, all teachers of reading are engaged, to some degree, in clinical work because they are involved in the observation and assessment of reading performance.

THE OBSERVATION PROCESS

So much of what we do in reading instruction depends on our observations of children's performances. When we plan, we rely on our observations to help us decide what teaching strategies will be effective. When we implement a teaching strategy, we observe how it is working in order to be able to modify it as we go along. When we evaluate, we observe how the children are progressing in order to plan and implement better future teaching strategies. No phase of instruction is independent of observation if good teaching is occurring. The experiences of miscue researchers in observing children read can aid the teacher of reading and the clinician in developing insights into the observation process.

Common sense dictates a naive position on the process of observation. We are ready to believe what we see and hear. This position is the result of a casual analysis of our remembered experiences. A critical examination of what appears to be a simple truism—believe what you see and hear—reveals that the observation of reading is anything but simple. Most of the reading process is not observable. It must be logically inferred from what is observable. This makes the understanding of the observation process critical for reading teachers and clinicians.

One prevalent idea of the observation of oral reading is deceptively simple. It depicts an observer, teacher, or clinician observing an oral reader and marking the errors the reader produces on a typed script. What could be simpler, and what more could there really be to the situation? Many teachers and clinicians feel that is all there is to the observation of oral reading and proceed to implement the idea. Our experience in miscue research shows that this unexamined position on observation leads to inadequate conclusions about how a person is reading.

The Miscue

Miscue research uses the idea that what is occurring in the observation process is a comparison of what the observer expects with what the reader orally produces. The miscue is defined as an oral reading response that differs from the expected response (K. Goodman, 1965a). The common sense notion that every deviation from the expected response should be counted as an error, evidence of some flaw in the

reader's processing, is set aside. In place of it is the idea of analyzing miscues to gain insights into how the reader is processing language as he interacts with print. This view is much more productive than the more prevalent common sense concept of observation. The reader is viewed as a user of language attempting to make sense out of the information on the printed page. Observation based on comparing the observed response with the expected response, and the view that the observed response results from the reader's interaction with the reading material, provides a more productive conceptual framework for teachers and clinicians. However, there is more to the observation process.

The Reader's Interaction with Print

We say the reader, or subject of the observation, interacts with the graphic display of print or reading material. In this interaction, the reader uses cue systems based on his language knowledge to generate his oral responses. Phonemic, graphemic, syntactic, and semantic information is organized into sources of systematized language cues (P. D. Allen, 1972). When a reader produces an oral response that the observer does not anticipate, the reader's interaction with the graphic display has generated a miscue. Interactions are the source of the reader's oral responses to the text, whether the responses are miscues or compliant responses that correspond to the examiner's expectation.

A Second Interaction. If the interaction between a reader and print can produce observed miscues, then an interaction between an observer and the print can also produce miscues. Miscues are regular occurrences even among highly proficient readers. This introduces a second interaction into the oral reading observation process. The expected response, as well as the observed response, is the result of an interaction with the graphic display of print. The difference between these interactions is simply that one is produced by the reader or subject and the other is produced by the observer or clinician.

And a Third Interaction. The two interactions we have noted in the observation process both involve the graphic display of print or the material to be read. Another kind of interaction plays a crucial role in the process of observing oral reading. The observer is not only interacting with print, but he is interacting with the sound of the subject's voice. That is to say, the observer listens to the reader's oral responses and uses language-based cue systems to make sense out of the sound. Guesses, predictions, interpretations, and aural miscues are part of this third interaction in the process of observing oral reading.

Three Interactions. All three interactions in the observation process

are interdependent. The subject-to-graphic-display interaction, the observer-to-graphic-display interaction, and the observer-to-oral response-interaction affect each other. Each is subject to the unique characteristics of the information processing of the individual involved. What the individual believes about how language works—and what reading is—affects the interactions in the observation process. Viewpoints on what teaching is and the role of the reading specialist are deeply involved. Dialect and self-concept are sources of variation in these interactions. Miscue research produces a critical awareness of the observation process and some of the subjectivity insidiously present in the common sense approach.

A Model of the Observation Process

Each interaction in the observation process involves an individual, an object of perception by that individual, and a response generated by the interaction. The individuals involved are the subject and the observer. The objects of perception are the graphic display of print and the subject's oral response to that graphic display. The responses involved are the subject's oral response to print and two inferred responses by the observer. The individuals, the objects of perception, and the responses are shown in relation to one another in the model of the observation process in Figure 1.

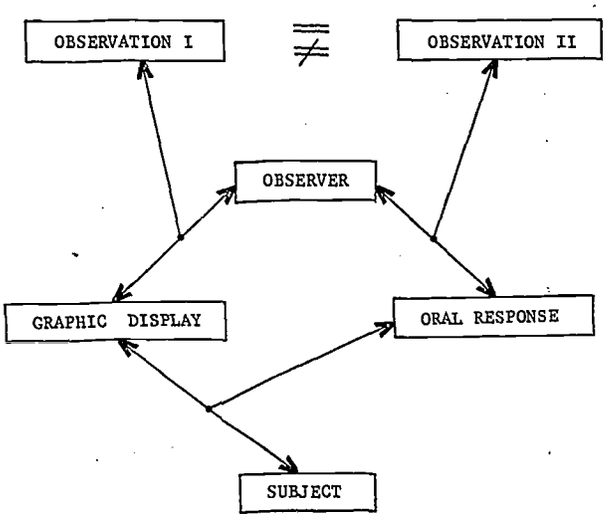


Figure 1. The Observation Process

The observer's response to graphic display is shown as Observation I in the model of the observation process in Figure 1. The observer's response to the subject's oral response is noted as Observation II. The model shows how Observations I and II are compared and judged to be equal or not equal. A miscue is the result of the judgment that the two observations are not equal. The model also depicts the three interactions described above and shows the interdependent relationships evident in the observation process.

Memory. We know that memory plays a part in the observation process. Each interaction represented in the model of the observation process requires that the observer hold his observations in memory while he processes them. The limitations of the memory are just as crucial to the observation process as they are to the reading process. For instance, we know that the short term memory is generally limited to processing seven plus or minus two items at a time (G. A. Miller, 1956). This severe limitation has obvious implications for the teacher or reading clinician listening to a child reading, while hurriedly marking a typed script, with only one chance, the initial reading, to record the information. From there on, the examiner must rely on memory as he engages in the interaction described.

In miscue research the observer's capacity for processing and comparing observations is supported by audio taping the oral responses of readers. Typed scripts are marked as the reader actually performs, in addition to being marked from the information captured on tape. This technique is substantially better than current clinical practice—relying solely on the single marking of a typed script while listening to the initial reading only once at the actual time of performance. In addition, careful analysis of the interaction of the observation process establishes an awareness of the problems of observation. Teachers and clinicians can learn much by taping and analyzing the oral responses of the readers they seek to help.

Consistency. The interactions described in the observation process produce inconsistencies. Inconsistencies between different observers' findings when listening to the same tape are the rule rather than the exception. What is more, the same observer can generate inconsistent findings when listening to the same tape on different occasions. Among other things, it depends on the purpose, expectations, and predictions the observer uses in the observation process.

Miscue research experiences suggest that teachers and clinicians must devise observation strategies that account for the inconsistencies known to be present in the observation process. This is a tall order, but if we do not accept inconsistencies in observation as likely occurrences and try to take them into consideration, we are simply bolstering our biases and entrenching them in the observation process.

Application in Observation

Once the idea of the three interactions is put to work in analyzing the observation process, useful principles result for teachers and clinicians. An individual's processing characteristics both enhance and interfere with the observation process. Language is the basic organizing device for both the reader and the examiner in oral reading observation. It is the language facility of the reader that permits him to reconstruct syntactic and semantic structures of the author. It is the language facility of the observer that permits judgments to be made about the semantic or syntactic acceptability of the reader's miscues. Knowledge of how the observation process works permits the observer to use his insights into language to understand how the reader is processing language information.

CLINICISM AND LANGUAGE

Language differences between the observer and the reader affect the observation process. Operationally, language is always in some dialect. Language is always spoken, written, or thought in the respective dialect of the speaker, reader, or thinker. If the dialects of the reader and the observer differ, considerable interference with the observation process must be expected.

The Ideolect

The fact is everyone has some traces of an ideolect, or uniquely personal way of using language; and everyone speaks in some dialect, whether or not it is what the people of one region or another call standard English. Reading clinicians and reading teachers must become aware of how language works; how it aids in the observation process and the reading process, and how it can interfere and contribute to biases in the observation process.

Deeply involved in clinical thinking is the idea of a deficit model. The deficit concept holds that something is missing in the child's physiological or neurological make-up, or in his experience. Many children whose language or dialect differs from the language or dialect of the teacher or reading clinician have been inaccurately diagnosed. This occurs in several facets of language use, including reading and auditory discrimination. Miscue research provides some insights into the language deficit concept through clarification of the

relationship of the observer and the subject in the observation process.

The clinician's knowledge of the subject's language depends upon observation and interpretation. Few informal reading inventories regularly take dialect into consideration in a manner consistent with scientific linguistic findings. This is due to a prevalent misconception about standard English and to the lack of knowledge about how language works. Reading teachers and clinicians cannot afford to ignore this aspect of observation.

Standard English

Standard English is often misconceived in clinical work as a universal dialect of English, carefully defined and described in textbooks somewhere. Actually, standard English gains its definition in sociological contexts. Aristocrats in England supposedly speak "received English" (A. Baugh, 1963, p. 381), but it is not generally spoken in the United States. Standard English is a "prestige dialect" (W. N. Francis, 1958, p. 46). It is the spoken and written dialect of the prestigious group and is somewhat free of peculiarities (R. Wardhaugh, 1969, p. 159). In the United States, the standard differs within a given region according to this definition.

The fact that there is not one but several versions of standard English comes as a revelation to some reading clinicians. That revelation has been hard for some to accept. Equally startling to some is the fact that dialect differences are not limited to pronunciation or phonological considerations, but also include syntactic structures and vocabulary.

Dialect and Reading Materials. Dialect remains an object of interest to miscue researchers. R. Sims (1972) found meaning and deep structures unchanged in orally read sentences with dialect miscues. Black dialect speakers dealt equally well in standard and nonstandard dialects. In view of these findings, Sims suggests that serious doubt exists ". . . about the notion of Black dialect speakers needing specific dialect readers for success in beginning reading" (R. Sims, 1972, p. 147).

Miscue Research and Dialect. Miscue research involved dialect in the earliest versions of the taxonomy of miscues. Not new is the position that a good knowledge of language and how it works will help in creating effective learning situations. K. Goodman (1965b) advocates this position along with the idea that the child's language should be used as a basis for reading instruction (K. Goodman, 1972). The child's dialect should be honored in clinical practice as well as in instructional tactics.

INSIGHTS INTO CLINICAL PRACTICE

Clinical practice today depends heavily on the identification and calculation of oral reading errors. Concern for the way reading clinicians interpret oral reading errors is not new. Controversy surrounds the identification (R. Weber, 1968), scoring (W. Powell and C. Dunkeld, 1971), and uses of the informal reading inventory (H. O. Beldin, 1970). For clinical work in reading, it is crucial that observable features of the child's reading be captured for analysis. The reading process is for the most part unobservable. Few indicators of the reading process are available, and oral reading responses are a major source of information.

Miscues

We find out very little about the reading process from oral reading responses that comply with the printed text. It is the unanticipated oral reading response or miscue (K. Goodman, 1965a) that yields a wealth of information.

Most researchers, clinicians, and teachers treat miscues as oral reading errors—evidence of something wrong. Previous to miscue research, many reading clinicians could be content with counting oral reading errors and looking up norms on a chart. Now, miscue researchers suggest that we must evaluate these errors. Even more revolutionary, some of the errors are not considered errors at all by miscue researchers. Rather, some errors are treated as indicators of how the reader is using language information in the reading process. Some unexpected responses are observed to be editings or interpretations rather than mistakes. Miscue research is beginning to provide criteria for assessing oral reading miscues in relation to the reading process.

The criteria rests on the assumption that the purpose of reading is comprehension or reconstructing meaning (K. Goodman, 1970, p. 28). Miscue analysis shows that some conventionally identified oral reading errors are quite acceptable with this criteria. For instance, if the reader says, "John told me he would be home for supper" for the text, "John told me that he would be home for supper," we can hardly call that an error that detracts from meaning. It looks very much like editing designed to cut the number of words. Similarly, if the reader says, "John told me he'd be home for supper," "John said he'd be home for supper," or "John said, 'I'll be home for supper,' " we know we are observing a response that indicates a fairly reasonable grasp of the sense of the text. These miscues differ from miscues that indicate the reader is not getting meaning from the print.

Expanding Categories

The often used categories of substitution, insertion, omission, mispronunciation, and repetition beg to be expanded as a result of miscue research. For instance, depth analysis of substitutions indicates that readers use graphic, phonemic, syntactic, and semantic cue systems; and that the most useful may be the syntactic cue system (P. D. Allen, 1969). Subsequent studies tend to substantiate and elaborate on this finding. A clinician can classify the reader in terms of the degree to which each cue system is operational. Identification of the strategies in use by the reader is possible by analyzing the miscues using the structure of cue systems to predict possible relationships.

Page has identified the miscue that is semantically and syntactically acceptable in the total passage but is phonemically and graphemically totally different from the expected response as a supercue (W. Page, 1970, p. 200). Its counterpart is a pseudocue, i.e., a miscue that is semantically and syntactically *un*acceptable within the total passage, but shows only a minor phonemic or graphemic difference. The supercue and the pseudocue represent extremes on a continuum. As the categories between these extremes are defined and their relationships to comprehension and meaning are established, teachers and clinicians are better able to interpret miscues in more productive ways. The *Reading Miscue Inventory* (Y. Goodman & C. Burke, 1972) represents an insightful organization of the major categories of the "Goodman Taxonomy of Oral Reading Miscues" (K. Goodman, 1969) into a practical tool for analyzing cue system relationships.

Corrections. Miscue research that centers on corrections has bearing on clinical practice. By inference, when a reader corrects a meaningful response that differs from the expected response phonemically and graphemically, that reader is likely to be more concerned with the look and sound of a word than its meaning.

A corrected supercue is an indicator of the reader's dissatisfaction with the phonemic and graphemic fit of his original oral response. We know the phonemic and graphemic cue systems are operating. If, on the other hand, supercues go uncorrected, the reader may be more concerned with semantic and syntactic information than phonemic and graphemic considerations. Pseudocues, corrected and uncorrected, yield similar but reciprocal information.

Reading teachers and clinicians—by observing the occurrence of correction of supercues, pseudocues, or the various categories that flesh out the continuum between—can establish a pattern of cue system usage for a particular reader with a passage. Cue system patterns provide valuable insights into the way a reader is processing and using language.

Paragraph Reading. Informal reading inventories use oral and

silent paragraph reading performance to aid in setting a reading level. This practice, widely used by reading clinicians and teachers, must be reevaluated in the light of miscue findings. Variation in the reading process occurs as content varies (K. Carlson, 1970), as grade level of material varies (W. Page, 1970), and as a reader's conceptual background varies (Rousch, 1972). Menosky (1971) discovered important differences in the characteristics of miscues produced in the first 250 words of an oral reading of a passage as compared with later portions. Since very few informal reading inventory passages exceed, or even approach, 250 words, clinical schemes that do not take this finding into consideration warrant reevaluation.

The Reading Inquiry Process

The theory of reading supported by miscue research helps to explain Menosky's finding and, at the same time, points to practical clinical uses. Miscue studies treat reading as a psycholinguistic guessing game (K. Goodman, 1967). The reading process involves guesses and predictions, and the cue systems function as verification strategies (P. D. Allen, 1972). The phonemic, graphemic, semantic, and syntactic cue systems act in conjunction with one another to produce a grid of redundant interrelated information. Proficient readers use less information from print and more information from their experience. Their guesses are more productive than less proficient readers.

The reading process is an inquiry process. The reader encounters the graphic display, generates predictions and guesses, and seeks verification using the cue systems. As the process recycles, the proficient reader retains verified guesses, rejects wrong guesses, and holds some guesses in doubt. The reader is reconstructing meaning (K. Goodman & O. Niles, 1970) to use as a base for constructing knowledge (W. Page, 1970, p. 188). The reader is engaged in a search for knowledge. The reading inquiry process has the elements of inquiry used to inquire into any unknown entity. The reader's conclusions are not examples of certainty but rather evidence of the reduction of uncertainty (F. Smith, 1971).

Knowing What and Knowing How

In the reading process, it is convenient to distinguish between knowing what and knowing how (G. Ryle, 1949, p. 28). Menosky's work (1971) tends to support the view that as people read, they also learn how to read. The reader, as he processes language information, actually learns to process the particular syntactic structures, semantic constructs, and dialect variations peculiar to the author. Most of us immediately recognize what it means when a person says he has learned to read a particular author.

For clinical work, this is an important insight. We must begin to plan strategies of evaluation that account in some way for the changes in processing that are evident after the 250 word mark. Longer passages must find their way into our informal inventories. That is not to say that all paragraphs in an inventory must be long, nor that we must immediately abandon all short paragraph reading tests. Rather, it suggests that insights into the reading process can be gained by the clinician or teacher by having a child read longer passages and observing changes in processing that occur.

Isolated Word Recognition

Often, in the face of pressing demands for administrative expediency, teachers, reading clinicians, and administrators must create highly efficient test strategies. The more time-consuming portions of full-blown test batteries are carved away, leaving a skeleton to do the work. Extreme instances frequently turn out to be isolated word recognition lists used to screen, assess, estimate, and predict performance. Miscue research has emphasized the function of language as the central organizing device in getting meaning from print. Tactics that rely solely on isolated word recognition eliminate language, make it impossible for the reader to gain meaning, and should not be construed as a test of reading (W. Page, 1971).

The isolated word list test strategy described here is common in school systems. It is probably worse than no test strategy at all because the information it yields is confusing and misleading. In such a strategy, the reading process is reduced to one of its parts. Reading is treated as though the performance of identifying isolated words by saying their sounds is the same as the reading process itself (W. Page, 1970, p. 190). Teachers and clinicians must be aware of this problem. We must be willing to recognize administrative expediency as important, but we must guard against reducing the reading process to either its parts or its conditions. The longer range view is ultimately more expedient, and testing tactics that ignore the function of language in reading simply add to the difficulties of effectively improving reading instruction.

Disability

It is clear that reading disability exists in substantial volume today. Miscue research is probing this area by developing insights into the reading process. What is not clear is the criteria for identification of reading disability.

B. Gutknecht (1971) concludes that perceptually handicapped children and normal children use the same processes in reading.

Handicapped children have more trouble and take more time acquiring the reading process than other children. This is a major aspect of reading disability identification—performance in relation to chronological age. Miscue research suggests that what is often being identified as reading disability is a temporary lag in performance.

For teachers and clinicians, this does not mean we ought to discard all norms and tests based on chronological age. Rather, it suggests that disability is, among other things, a function of time; and that children should be treated as individuals.

CONCLUSION

This paper by no means exhausts the contributions of miscue research to clinical practice or reading instruction. Readers are urged to probe the work of Y. Goodman and C. Burke in the *Reading Miscue Inventory* (1972). Organization and application techniques offered in their work represent an effective orientation to the concepts and techniques involved in miscue research.

Miscue research contributions center about attitude, observation technique, and language insights. The attitude of clinicism requires some realignment if theory underlying miscue research is considered. The deficit concept with regard to language, and its relationship to disability, require reexamination in the light of miscue theory and findings. The observation techniques of reading clinicians and reading teachers can be greatly improved if the insights provided by the experiences of miscue researchers are taken into consideration.

Expanding the classification of oral reading responses in relation to systems of language-based cues provides new tools of analysis for clinicians and teachers. Application of the theoretical stance that the purpose of reading is the reconstruction of meaning and the construction of knowledge provides criteria for evaluating reading responses. This is a productive alternative to the prevalent practice of counting all deviant responses as errors.

Insights into the construction, tactics, and uses of informal reading inventory strategies can be gleaned from miscue research. Isolated word recognition tactics require reevaluation in relation to what is known about language. Paragraph-reading portions of informal inventories require reexamination in relation to miscue findings concerning length of paragraph, content, and the reading process.

Miscue research has only recently intruded into the area of clinical practice in reading. The insights into the observation process have both broad and specific implications that are becoming difficult to ignore. The fact that language is at the heart of the reading process—and that, in fact, reading is a process—represents understandings that are crucial to every facet of clinical and instructional work in reading.

Building Instructional Materials

Laura A. Smith and Margaret Lindberg

In research, and in classroom uses of the *Reading Miscue Inventory,* miscue analysis is used to acquire insight into the oral reading process and into the reading strategies of individual readers, as they process written material. A miscue analysis of an individual reader gives indications of how he handles unfamiliar textual material; indirectly, it also provides information about the material being read.

Another application of miscue analysis has been used by these writers, working with Kenneth S. Goodman, in the evaluation of materials for the Scott, Foresman *Reading Systems* (by Aaron et al.)—a complete K-13 reading program. This informal use of miscue theory has enabled us to consider the miscues of a number of children reading each selection—in order to focus on the readability, and suitability, of materials for the intended pupils.

Reading is a two-way communication process. It includes the language and experiences of both the reader and the author. Any evaluation of the suitability of written materials must look at both.

The traditional procedures for assessing readability have been based on a number of factors, such as: the average number of syllables in each word, the frequency of uncommon words, the number of times words appear in a given selection, and the average length of sentences. These factors are fed into various formulas to assign "grade levels."

Most readability scales have tended to be based on word-centered models of language and reading. Miscue analysis, which is based on the "Goodman Model of Reading," looks at reading as a language process. The process must be viewed as it happens; therefore, readability must be judged in relation to people actually reading. Thus, the Scott, Foresman procedure looks at actual readers in the process of

reading and employs no readability formula. In applying this procedure, many factors have been found (which seem to be ignored by readability scales) that do in fact affect readability.

The following is a description of the miscue analysis method we have used to evaluate the readability of reading materials.

DESCRIPTION OF PROCEDURE

This procedure looks at the *collective miscues* of children reading a selection orally. The miscues are evaluated in relation to what they indicate about the relevance, appropriateness, and the potential difficulties of a given text for readers of a particular age and grade level. The assumption which underlies this procedure is that the miscues of readers will represent those likely to occur in other readers. Particularly when readers make similar kinds of miscues, the miscue-causing features of the text itself will be revealed. It is not necessary to use large numbers of subjects to find these text features. The procedure is similar to that used in general miscue analysis.

Selection of Children. Each story, or article, to be examined is read by four to six children who are considered to be average readers for their grade. Below average readers may have atypical reading problems and may not reflect problems particularly related to the text. More proficient readers will not have the same kinds of difficulties in processing the materials. Each child is chosen by his teacher on the basis of the teacher's judgment of his reading performance. All of the staff have a background in psycholinguistics, linguistics, and teaching and are trained in the procedures involving taping, questioning, transcribing, and evaluating the miscues.

We attempt to select children with varying backgrounds and from various parts of the country. In our work, miscues from readers in widely diverse parts of the country show remarkable similarity—though some miscues indicate the special linguistic or cultural characteristics of the pupils.

Reading the Text. After putting the child at his ease, each child is told that he is going to help evaluate a story which is being considered for use in a new reading book. As is usual in miscue analysis, the reader is given no help while he reads. In letting him know that he will be asked to retell the story, he is further instructed that he should be candid about his opinions of it—whether he likes it, whether it is hard or easy—so that a fair evaluation of the story can be made.

As with all miscue analysis, the reading is taped and miscues are checked against the tape after the child has read.

When the child has finished reading, he is asked to do the usual uninterrupted retelling. The *unaided retelling* gives some indication of what the child recalls on his own: what he considers to be significant, his organization of events and ideas, his reactions—unbiased by questions—which may focus or shift his thinking. Many of the children's misconceptions or confusions can be revealed in this way.

General Questions. Following the unaided retelling, general questions serve to spark the child's memory and allow him to give a fuller account of the story. The questions stem from the child's own retelling. No specific information which the child has not mentioned is volunteered by the researcher.

The *unaided retelling* and the *general questioning* correspond roughly to what the child can be expected to understand without teacher guidance and direction. Up to this point the procedure is much the same as it is in miscue research or in the use of the *Reading Miscue Inventory.*

Each researcher also has a prepared question guide at his disposal which contains a general plot outline; information on characters and setting; a section on concept vocabulary and unusual or difficult expressions; a section on inferences which might be drawn from the story, and possible meanings or applications of the story (themes). The format of the question guide varies somewhat with the kind of materials being evaluated. Often we are seeking the child's reaction to specific aspects of the selection.

Questions structured in this manner seem to give a fair understanding of what the child can grasp on his own; what he can handle with some help and direction; and which areas seem entirely beyond his grasp. It is not assumed that there is one correct version of comprehension. Stories can be understood on many levels, all of which are valid.

The child's retelling and interview are important supplements to the miscue analysis, because not all of what a child appears either to understand or not to understand can be judged by his miscues.

Miscue Analysis. When the texts of all of the children reading a particular selection have been transcribed, the researchers examine the miscues of the readers in light of the children's retelling. The miscues are evaluated and analyzed informally to determine which of various factors may be triggering them. The usual miscue categories are not used. The miscues can be grouped under the following categories:

A. Miscues related to the author's style of writing: This would include author's grammatical preferences, such as long or complex sentences, tense choices, vocabulary, and usages to create a mood or tone.

B. Miscues that involve the concepts included in a story and the vocabulary related to these concepts: This would include such factors as concept load, relevance, and familiarity to the child's background, key vocabulary, unusual usage of familiar items, and unfamiliar meanings for familiar words.
C. Miscues that are the result of the grammatical structures (syntax) used by the author: For example, complex or unusual structures, dialectical or preferred constructions, word order and reference problems, etc.
D. Miscues related to linguistic and cognitive development: Examples will be discussed in the following section.

Some selections tested produce a fair share of miscues in all of the possible categories. Sometimes the preponderance of miscues from a given story begins to indicate some overriding problems. Examples include the use of an *oral language style unfamiliar in print* (which often happens when the author attempts to retain the dialect of the oral tradition from which the story was taken), and *concept overload*: concepts which the reader does not possess and which are not compensated by adequate contextual information.

The results and recommendations of each textual analysis are contained in written reports submitted to the editors.

WHAT ANALYSIS OF MISCUES REVEALS

The initial reading task involves an unfamiliar medium—print—as the carrier of thought. The children seem to have particular difficulty where the differences between written and oral language are most pronounced (where written conventions are substituted for oral ones).

Format. For example, many of the beginning readers seem to expect a sentence to end when the line of print ends. When a line ends with a possible complete sentence, "I made a mark / on my fingernail." the children tend to end the sentence with "mark" and begin a new sentence with "on." Sometimes a chain reaction involving many lines of print is set in motion. Where these line-break problems involved information significant to an understanding of the story, comprehension is often severely impaired. This is an easy problem for editors to handle.

Dialogue. In oral language communication, the speaker is plainly recognized; however, in written communication the speaker must be indicated by certain graphic conventions. The use of quotation marks is one example, and the addition of dialogue carriers (speech markers)—such as "said Mary" and "John asked"—is another.

At early levels, there is a difference in readers' ability to handle

'John said, "I want to go."' and '"I want to go," said John.' The first version, in which the speaker is introduced before the dialogue, is easier for children to predict and read. Putting the dialogue carrier in the middle of the dialogue, '"I want to go," John said. "I'm tired."' further complicates the process.

Some authors tend to include the name of the person being talked to within what is being said: "We must hurry, John," said Mother. "We will be late." Miscues often result in John's being made the speaker: "We must hurry," said John. "Mother, we will be late." or even "We must hurry." John said, "Mother, we will be late." There is very little graphic difference but considerable change in meaning.

The problems encountered with the use of unusual dialogue carriers like *continued, explained, hazarded, replied, retorted, spluttered,* and *bellowed* is probably obvious. But *shouted, cried, screamed,* and *smiled* are also problems when used as dialogue carriers. Children expect these to be real actions—not a way to say something. Additions to the dialogue carriers also cause problems, especially long, complex ones: '"That's all right," Miss Robbins, her earrings swinging, smiled at Beezus.' [1]

LANGUAGE RELATED FACTORS

Author's Style. An author's choice of language structures and vocabulary affect how predictable he will be to any given reader. What may be perfectly understandable in oral language may become less clear when it is put into print. For example, a storyteller may say: "He stood still in the snow, feeling cross with himself. You and I know what he had forgotten." [2] These sentences appearing in print cause readers difficulty because they do not expect the story to be interrupted by an aside from the author.

An author's attempt to create a mood or add subtleties can also make his writing less predictable, as it does when A. A. Milne, attempting to show Pooh's muddled thinking, writes: 'I've been thinking," said Pooh. "And what I've been thinking is, I think, I will. . ." [3]

Sometimes the author's choice of sentence structure is unpredictable to readers because it is from another time or another place; written English isn't all that standardized. Statements such as: "These are my cousins that I have told you of." and "It was well to be watch-

1. Beverly Cleary, *Beezus and Ramona* (New York: William Morrow & Co., Inc., 1955), p. 45.

2. Alice Daigliesh, *Bears on Hemlock Mountain* (New York: Charles Scribner's Sons, 1952), unpaged.

3. A. A. Milne, *The House at Pooh Corner* (New York: E. P. Dutton & Co., Inc., 1965), p. 9.

ful," abounded in *The Jonah*,[4] a story set in 1866. The archaic language causes readers numerous problems.

Structures that contain optional variations sometimes cause minor insertions and deletions, but seldom make major meaning changes. In *The Jonah*[5] "He was seated in Gramp's place at table" tended to be read "at the table," a more modern version. In *The Little Knight*,[6] there was a tendency to insert "the" before "queen" in "The king and queen" perhaps to make the two phrases parallel.

Negative statements contained in a story sometimes do not seem to be anticipated. Often the visual cue is so minor (n't) that it is easily ignored. If the following action does not reinforce the negative statement, it may not be corrected. In cases where the negative is essential to the plot, this omission results in confusion or misinformation. In those cases where the subsequent action contradicts the miscue (loss of the n't), the readers tend to go back and correct.

Sentences beginning with the words what, where, and when usually cause readers to anticipate questions; they tend to transform the phrase into a question. This often leaves the reader with a problem in dealing with the rest of the sentence. Conversely, questions without question markers such as: "You will set the sun free?" tend to be read as statements.

Meaning and Function Changes. Because a child knows the meaning of a particular word in one context, it cannot be expected that he will automatically know the same word if the context changes, or if the grammatical function is altered. For example, the word "page" may be recognized in the noun slot with the meaning: "Open the book to page three." It may not be quite as understandable in the noun slot with a different meaning: "The page opened the door for the queen," or as the name: "Mr. Page came home." Shift the meaning and the function, and the child's problem is further complicated: "Please page Mr. Jones." This is one answer to the often heard cry "But I know Johnny knows that word, why can't he read it?"

Vocabulary Related Factors. In the more traditional word-centered approaches to reading, vocabulary has been considered to be of primary importance; however, an understanding of vocabulary and how it relates to the reading process proves it to be a far more complex matter than might be assumed.

4. C. A. Stephens, "The Jonah," in *Scott, Foresman Reading Systems: Voices*, Level 19, eds. Ira E. Aaron et al. (Glenview, Ill.: Scott, Foresman & Co., 1971), pp. 3 & 7.

5. *Ibid.*, p. 8.

6. Anne Rowe, "The Little Knight," in *Scott, Foresman Reading Systems*, Level 4, eds. Ira E. Aaron et al. (Glenview, Ill.: Scott, Foresman & Co., 1971), p. 4.

The fact that a reader may or may not say a word correctly is often not related to his understanding of that word. How that word is used by the author is what matters. It is not essential that a reader know the meaning of every word during or after reading. In fact, only a few words are vitally important to comprehension of any selection. We have chosen to separate word problems into three categories: (1) nonessential vocabulary, (2) plot-carrying vocabulary, and (3) concept-carrying vocabulary.

Nonessential Vocabulary. In much fictional writing for children there is a great deal of what we have called nonessential vocabulary. This includes the vocabulary used to convey descriptive information—and that chosen because it adds subtly to the flavor or mood the author wants to capture. The reader omitting this kind of vocabulary usually does not jeopardize the essence of the story. For example: "Silver poplar, willow and tall Aspen trees grew beside the stream. His bright orange-red teeth cut a notch around the tree."[7] In these two sentences all the reader really has to extract is that the beaver is cutting down a tree near the water. Or in the following example from "McBroom's Ear":[8] "Yes—it's a mite crowded living up here in the young'uns' tree house," the only essential information is that the family is living in the tree house.

We would certainly not suggest that all of this kind of vocabulary be written out of materials for children, but only that different strategies are required to read it.

We have found that if the reader is familiar with the environment of the story, he finds the "nonessentials" easier to read. Whether he is familiar with the dialect used in the story, whether he lives in or has visited the geographical setting, and whether he is familiar through actual experience with the content affect how a specific reader is able to read this nonessential information. Obviously the child who is already familiar with the woods and beavers through experience, study, and conversations about them can more easily anticipate the description in the first example. And the child who has heard—either in real conversation or in being read to—the expression, "a mite," will be better able to understand what McBroom is saying.

Plot-carrying Vocabulary. These factors are also found to affect how readers are able to read the plot-carrying vocabulary. For example, in these sentences: The man said, "What can we do to this turtle? He's crushed my corn." The people said, "We should punish

7. Bernice Freschet, *Beaver on the Saw-tooth* (New York: Thomas Y. Crowell Company, 1969), p. 10.

8. Sid Fleischman, "McBroom's Ear," in *Scott, Foresman Reading Systems: Excursions*, Level 17, eds. Ira E. Aaron et al. (Glenview, Ill.: Scott, Foresman & Co., 1972), p. 18.

him."[9] The word "crushed" is probably in the nonessential category. What has happened to the corn is already developed through the text and pictures. Even the child who does not read the word "crushed" knows what happened to the corn. There are more familiar words to describe what has happened than "crushed," but it adds to the folk flavor of this story.

"Punish" is essential to an understanding of the story. Children who initially cannot read plot-carrying vocabulary are often able to do so after the concepts for that vocabulary are developed through the action of the story. However, in this particular story the short length and the unfamiliar setting are against the concept of "punish" being understood. If the choice were between spanking, being sent to one's room, or standing in the corner, we suspect that many more readers could read "punish" by the end of the story. But our young readers do not anticipate being cooked, being buried, and being thrown in the river as possible forms of punishment. Our discussion with the readers confirmed that "punish" is a familiar concept and available in their oral vocabulary.

Concept-carrying Vocabulary. Concept-carrying vocabulary, as we have chosen to define it, is a more complex problem than plot carrying vocabulary. It is found most often in science and social studies materials and is not developed through a plot. This kind of vocabulary is, however, essential to basic understanding of the text.

Writers of materials for children often seem unaware of how complex their writing is in view of the lack of relevant background in their readers. Often, writers are not communicating to children what they think they are. For example, in thirteen sentences, one second-grade text about turtles told: (1) the names of three different kinds of turtles, (2) where each of them lives, (3) how two of them look, (4) what two of them can do, and (5) what one of them likes to do.[10] Little of this information would be new to readers who know about turtles, and much of it could not be read by readers with very limited experiences with turtles. Those readers with limited related experience can't predict or understand "snap at" as an action that a turtle might perform. And they are not familiar with ponds, lakes, streams, woods, or meadows.

Consider just the word *ponds*, for example. How much does a child need to understand about ponds in order to add to his knowledge about turtles? Is it sufficient that he know that a pond is a body

9. A. K. Roche, "The Clever Turtle," in *Scott, Foresman Reading Systems*, Level 6, eds. Ira E. Aaron et al. (Glenview, Ill: Scott, Foresman & Co., 1971), p. 26.

10. A. K. Roche, "Kinds of Turtles," in *Scott, Foresman Reading Systems*, Level 6, eds. Ira E. Aaron et al. (Glenview, Ill.: Scott, Foresman & Co., 1971).

of water? Does he need to know its size relative to a lake? (In New England lakes are called ponds.) Does he need to know the relative calmness of the water as compared to a river? Does he need to know what other animals live there? Does he need to know which animals in that pond environment might be eaten by a turtle? Does he need to know which animals might be a threat to turtles? Authors of content-oriented materials often assume a greater depth of understanding than many young readers possess.

At a higher level (sixth grade), let us consider just one sentence from a short article on the work of the Swedish botanist, Carolus Linnaeus: "Linnaeus was the first person to invent a system for naming plants that was both scientific and easy to use." [11] In order to understand this the child must know what is meant by "invent a system" (not a machine). He must know what a system means as it is used in the phrase a "system for naming." He must understand "scientific" in the sense it is used here, and "easy to use" as it relates to using a system. Earlier in the article the author has written: "Years ago people had difficulty discussing plants because each kind of plant had many different names." [12] A young reader might then assume that this "easy to use system" just gave one name to each kind of plant (without getting into the idea of what a "kind of plant" might mean!). The article then says "He gave each plant two Latin names." [13] This would certainly be confusing if the reader had come to the conclusion that each kind of plant now had only one name. And none of this explains what a high school biology student knows about the system by which plants and animals are named, let alone what a person who understands this naming system knows about the plant named when he hears its biological name. The combination of concept density, the superficiality of the treatment, the lack of sufficient context, make articles like these virtually incomprehensible—for the intended level of development—without considerable building of the relevant concepts.

In each of the above examples, single words—which could be called concept holders—actually stand for whole conceptual structures and prior experiences. Our research indicates that if the reader does not already have in his background related experiences and has not already developed the related concepts, he will have trouble gaining information through his reading. These findings are supported by current psycholinguistic research.

11. "Profiles in Green," in *Scott, Foresman Reading Systems: Voices*, Level 19, eds. Ira E. Aaron et al. (Glenview, Ill.: Scott, Foresman & Co., 1972), p. 82.

12. *Ibid.*

13. *Ibid.*

DEVELOPMENTAL FACTORS

Linguistic Development. The beginning reader is already a proficient language user. He has available to him a wide range of linguistic structures. This range increases as he grows as a language user. He can handle those structures in reading that are already available to him in aural language. More familiar structures are easier to process; first graders are more able to deal with the sentence "We can put on a show if we can do it (a magic trick)." than if the clauses are reversed "If we can do it, we can put on a show." They seem to have difficulty keeping the subordinate idea in mind while they process the main idea. After stating the main idea "We can put on a show," they can add the limit "if we can do it." Readers just a year older do not seem to find this a problem.

Second graders seem able to deal with "had" as a verb of possession followed by a noun phrase: "The boy had the book"; or when used to imply necessity: "He had to go home." As a past perfect auxiliary: "She had gone to the store," second-grade readers have problems. Although fourth graders have no trouble with the above, they still seem unable to handle the past perfect tense of the verb had: "She had had the book for a long time." Numerous miscues result. The problem is not that the readers do not know the word had, but that they are unable to predict certain structures in which it occurs. In the case of "had had," the structure is uncommon and word doubling is unfamiliar in print.

An awareness of linguistic structure and complexity will enable teachers to better understand some of the reading problems encountered by students.

Cognitive Development. Even sixth graders do not have the full range of cognitive strategies available to adults. In evaluating a workbook selection with fifth and sixth graders, we find that their understanding of the difference between facts and judgments is hazy. Some feel that fact is equal to consensus: if enough people agree on something it is fact. Others feel that a fact must agree with their own personal opinion: if I think it is true it must be a fact. Still others feel that fact is based on an appeal to authority: if the teacher says it is true or the book says it is true, it must be a fact. Eighth graders show parallel attitudes. These readers are not much more able to abstract a definition of fact and judgment than fifth or sixth graders.

"Rightness" of one judgment makes all other judgments "wrong." Many readers cannot accept that there can be more than one right answer.

Piaget's findings also indicate that children at this developmental level have great difficulty reasoning in an abstract and hypothetical manner.

Personality. Beyond linguistic and cognitive development, there are individual personal factors that must be considered. We find that the amount of frustration a reader encounters in reading a particular selection and the amount of frustration he will tolerate is dependent on many things: his personality, how proficient a reader he is, how well he thinks he reads, what he expects the reading process to be, and his interest in and background for the particular selection. These factors will influence his reading performance.

This is very significant in testing situations. For example, young readers can be extremely frustrated by not being able to read a person's name. They may do poorly on a test because they allow such an insignificant item to keep them from attempting to read further or answer questions. Any student who has read a Russian novel knows what a problem names can be if they are given exaggerated importance. A confident reader knows the character, not his name, is what is important.

IMPLICATIONS FOR AUTHORS AND PUBLISHERS

Using this informal application of miscue theory, authors and publishers can more realistically evaluate their materials in terms of suitability for their intended readers. In those cases where findings indicate that it is not suitable, the following options are available: reject, rewrite, relocate, or facilitate use at that level.

Reject. In those situations where the problems (linguistic, cognitive, or conceptual) are overwhelming—or rewriting is not an available alternative, the recommendation is made that these materials be dropped.

Rewrite. Linguistic, conceptual, and even—on occasion—cognitive factors can be minimized by rewriting. In an article that we tried with fourth and then fifth grade readers ("The Movies Explore Outer Space"), we found that it included too many concepts. Further, the article was written in a chronological order which seemed logical to an adult but which the children found difficult to handle. They could not project themselves into a time when people could not travel to the moon and did not know about rocket travel. Although the children knew a great deal about astronauts and travel to the moon, they were not aware of how this knowledge related to the things they believed about fiction. The rewriting of this article centered around developing a few concepts well and changing the focus to start from where the readers were.

In an article about the late photojournalist, Margaret Bourke-White, our readers never really understood the concept of photojournalist. The final rewrite of this article now starts with two para-

graphs reviewing the concepts of journalism and photography. The use of many of Bourke-White's photographs and photos of her at work further develop these concepts.

Relocate. In these instances where the linguistic, cognitive, or conceptual problems are specific to one level of development—and other factors are positive—materials can be moved upward or downward to accommodate them.

Facilitating Use in Reading Instruction

Instructional material must include selections which present difficulties to young readers. If they do not, the readers will not develop strategies for coping with these difficulties. Our goal is not to eliminate all problems but to pass on insights to teachers on the nature of the difficulties. The teacher's manual can help teachers anticipate problems that readers may have and some reasons for them. The manual can also help teachers to develop an awareness of the cognitive, linguistic, and conceptual development of students; to see the variety within and between them; and to anticipate the problems they may encounter. It can direct the teacher into discussions to probe the depth of thinking of students. For example, in our research following a story about a girl in a lighthouse, an answer choice in one question was "lonely." One child selected this answer because "her father was away." Another reader rejected it because "her mother and sister were with her." With no discussion, one of these children would have been judged wrong.

The following selection while aimed primarily at teachers can also be useful for writers of teacher's guides.

IMPLICATIONS FOR TEACHERS

Evaluation and Selection of Materials. The following questions are suggested as guidelines for evaluation of material. What does this story assume the reader already knows? What can it add to the reader's knowledge?

What does this selection assume the reader already knows? Examine a few paragraphs from various sections with a focus on specific vocabulary items (single words and phrases) that are concept holders (see *Concept-carrying Vocabulary*). What prior experience does a reader need to understand the concepts? How many concept holders appear in any single paragraph? Do readers at the intended level have such conceptual development?

Since the levels of understanding will vary from student to student, the teacher will need to develop some basic concepts in order for the material to be used. If the range is too wide or the concepts unfamiliar, should this material be used? Our work has convinced us that readers start "where they are," having no other point at which to begin.

The teacher using these materials will need to be aware of her students' levels of understanding and be able to build bridges from where the students are, conceptually, to the level of understanding required by the book being considered. This must first be done through nonreading experiences: trips, records and tapes, films and filmstrips, pictures, discussions, outside speakers, models, and other resources available in that community.

Little totally new information can be taught through reading alone. A reader brings his prior experience to the reading task and when he brings no related information, he cannot understand what he is reading.

What can this book add to the reader's knowledge? Assuming that the reader has developed some basic level of understanding, what can this selection add to the reader's knowledge?

Science and social studies texts, in trying to avoid being too hard, have touched great numbers of major concepts and have developed few. As a result, students learned the names of many major concepts (urban planning, the Westward movement, the industrial revolution, lasers, the feudal system) and really gained no new understandings. Our evaluation of various materials has shown that a few concepts, well developed in a variety of ways, are more useful than many concepts listed or superficially developed.

Using the Materials You Have. In many instances, the material which will be used in a particular classroom is already determined. Often the materials and the readers are not well matched. As we have seen, this is not necessarily due to some deficiency in the reader.

These discrepancies can be minimized through the following procedures: (a) Provide relevant nonreading experiences followed by class discussions using the concept-carrying vocabulary included in the text prior to reading the selection. (b) Minimize the difficulties resulting from dialect differences and author's style by reading aloud to students so they get a "feel" for the language. Some of this reading may be from the materials the children will actually be expected to read. Aural exposure to a wide variety of dialects and writing styles seems to better enable readers to handle them in print. (c) Oral presentations of individual and group research can provide additional nonreading experience for the class as well as allow the child with greater background to expand his knowledge. These oral presentations can take many forms. (d) After the nonreading preparation, the read-

ing tasks should include only those parts of the text that are necessary and useful for the particular learner. (e) The text can be supplemented by any available material that interests students. Teachers should be prepared to accept the fact that not all children will be equally interested in any given topic, or will learn the same amount, or even understand the same things.

We feel that the procedure we have outlined can be useful to publishers and authors in selecting and rewriting materials. And it can be useful to teachers in working with kids as they read.

Miscues of Non-Native Speakers of English

Catherine Buck

Learning to read a foreign language is not quite the same as learning to read one's native language. Although this truism seems fairly obvious to everyone, it is most obvious to those who have tried to read a foreign language. Yet learning to read a foreign language—once a speaker is literate in his own—is not like starting over either. There is considerable evidence to demonstrate that people learn to read only once, whatever the language of that first literacy may be. Learning to read in another language is an extension of that literacy: becoming biliterate is part of becoming bilingual. Specific reading strategies may vary a great deal from reading Chinese to reading Arabic to reading Greek to reading Spanish, for example; but the basic process of deriving meaning from systematized graphic shapes seems to be the same process.

Here the basic process refers to one particular view of reading, that developed by Kenneth S. Goodman. This process involves: (1) sampling graphic, syntactic, and semantic cues; (2) predicting both structure and meaning on the bases of these selected cues; (3) testing the prediction; and (4) either confirming that prediction or correcting if necessary. The reader's conceptual development, as well as his personal preferences within the culture, plays an important role in this model of reading, greatly influencing his ability to sample predict, and test.

If the basic process is the same for different languages, why is there a problem in learning to read a foreign language? The most immediately apparent answer, and the one that most teachers of English as a second language seem to focus on, is the fact that different languages are represented by widely varying systems of writing. The reader of Chinese uses an ideographic writing system and

moves from the top of the page to the bottom. The Arab uses an alphabet that, in effect, is actually a syllabary—since the vowels are normally not normally represented, and one's eyes move from right to left across a page. The Greek uses a system less removed from our own (in fact, our system was borrowed from the Greek); the Greek alphabet is one in which both vowels and consonants appear, and one reads from left to right. The reader of Spanish shares with us the additional feature of the Roman alphabet; but of course the letters represent the phonemes and morphemes of Spanish, not English.

The problem of learning an unfamiliar system of strange graphic shapes, and perhaps reading in a new direction altogether (e.g., right to left), is very real. But certainly these are not the only problems in learning to read a foreign language. There are many other areas where either the interference of one's native language or sheer unfamiliarity with the different writing system, or both, may prevent the reader from comprehending the message. We shall discuss these problem areas in terms of (1) the reader's input (what he brings to the reading process); (2) the author's input (the cues from which the reader must select); and (3) the reading process itself (the interaction of both the reader's input and the author's input).

THE READER'S INPUT

Native	Non-Native
1. Native competence in the English language	1. Control over English syntax may range from zero to native; vocabulary may range from zero to almost native.
2. Personal experiences within the culture	2. Different personal experiences within a different culture.
3. Conceptual development	3. Different conceptual development.

We, who are native speakers of English, learned to read English in our early school experience (or before) because we had receptive control over virtually all of its syntax, had productive control over most of its syntax, and had acquired an extensive vocabulary. We learned to read more or less well to the extent that we perceived that written English reflects the same reality that spoken English does. Had we native speakers of English been asked to read French, it would have been a different matter. Conversely, the student of English as a second language may have little or no command of spoken English. He should not be asked to read grammatical structures and vocabulary which he cannot already control in listening and speaking. In the beginning stages, the reading material for the

non-native should make use of the syntactic and semantic cues he can already deal with in oral language.

Native speakers of English also acquired literacy because they began to read about familiar situations in which familiar characters appeared, performing familiar acts. The non-native speaker—simply by virtue of the fact that he, too, is a member of the human race—will also consider many of these situations, characters, and actions quite familiar. But readings about people and places specifically American may be difficult to identify with and, therefore, to understand. The best sources of early reading material for the student of English as a second language are the student's own personal experiences.

Related to—and yet distinct from—the student's personal experience is his conceptual development, which is also very much culture-bound. Readings which we teachers often write as our students' reading material include concepts of the home, the family, the man's role, the woman's, the child's—which are totally foreign to readers—despite the fact that they may be able to control all the grammar and vocabulary in a given passage. An American's concept of work is normally quite a novelty to the foreign-born; our views on cities, neighborhoods, and neighbors may be quite divergent as well. If our reading programs are to be comprehension centered, we must start with the conceptual background of the readers we are trying to teach.

THE AUTHOR'S INPUT

Native	Non-Native
1. Graphophonic cues	1. Unfamiliarity and/or native language interference in interpreting graphophonic cues.
2. Syntactic cues	2. Unfamiliarity and/or native language interference in interpreting syntactic cues.
3. Semantic cues	3. Unfamiliarity and/or native language interference in interpreting semantic cues.

We have already mentioned some differences among the writing systems of various languages and suggested that these will certainly cause difficulty in interpreting the graphophonic cues of the reading material. Japanese provides an ideal example here, since this language is represented by three different writing systems—each requiring somewhat different reading strategies. The Japanese use the Chinese ideographic writing, the Katakana syllabary particularly suited to the structure of their language, and an alphabet for the transcription of foreign words. Since Japanese school children learn all three systems during their educational careers, they may use the strategies required

for all three as they read in English. They may focus on the entire lexical item, on the syllable, or on the specific sound/symbol relationships. Speakers of Chinese, on the other hand, may be surprised to discover that there is any sound/symbol relationship at all in English writing—since their own system is ideographic. While speakers of Spanish will expect much closer grapheme/phoneme correspondences, they will be surprised at the morphophonemic nature of the English spelling system. Speakers of languages which are represented by the Roman alphabet will naturally attempt to apply the sound/symbol correspondences of their own language to English print, at least in the beginning stages.

Syntactic cues, however, pose problems as well. Inflections, word order, and function words vary greatly in importance and in form from language to language—yet the reader depends upon these to carry the meaning of what he reads. The student of English as a second language may understand all the lexical items in a given passage, yet not have the grammatical control to "get it all together." The teacher can expect that the foreign-born reader will make miscues because of his expectancy that word order in English will in some way resemble word order in his own language—for example, adjectives will follow the nouns they modify or direct objects will precede verbs.

Semantic cues offer further confusion. Speakers of European languages will quickly discover that many words in their own idioms also exist in English but frequently have different denotations, not to speak of connotations. Here again, the concept load of these items may be only partially familiar to the student; he may recognize the word in one context, but not in another. Further, as we have mentioned, the student's understanding of the words he uses often may be quite different from the teacher's understanding of those words: work, family, and so on. Semantic cues are particularly difficult to handle when humor is involved, for what is truly humorous within one culture may fall flat within another. As in reading other materials, the student may comprehend the literal meaning without reaching the author's real point.

THE PROCESS

Native	Non-Native
1. Sampling	1. May not know where information is stored, which language units carry the most information.
2. Predicting	2. May be unable to predict structure and meaning, or may predict on basis of native language structure.

3. Testing	3. May not be able to answer the questions "Does it sound like English? Does it make sense?"
4. Confirming	4. May be unable to confirm or may wrongly confirm out of unfamiliarity and/or native language interference.
5. Correcting when necessary	5. May not recognize miscue, may not know how to correct miscue.

Sampling graphic, syntactic, and semantic cues may be quite an obstacle for the non-native speaker of English; he may not know which units store the most information. In terms of graphic cues, does the beginning of the word give him the greatest indication? the middle? the end? And how can he recognize inflections and other bound morphemes? How can he know which are particularly redundant in the language and which he must especially attend to? In terms of syntactic cues, he must perceive that word order is more important than inflections in English—that it carries more information. He must control a great deal of grammar in order to select only the most significant cues. In terms of semantic cues, likewise he must recognize relative importance: which words are the "content" words? which are the "function" words that hold nouns, verbs, and modifiers in proper relation to each other?

Predicting both structure and meaning is central to the "Goodman Model of Reading." Without it, reading would be an unimaginably slow process. The student of English as a second language cannot make reasonable predictions about the material he is reading if he is unfamiliar with English grammatical patterns. Further, this ability to predict depends in part upon the reader's memory of cues he has already encountered and selected. The foreign-born reader's miscues may at first be acceptable only within very short units of structure, since he will develop his memory in English only as he gains greater and greater syntactic control—grouping individual words into larger and larger units. Grammar is the glue which holds those cues together in memory. Students who are asked to read far too early in their learning of English will be unable to predict at all, or will wrongly predict due to native language interference, or will learn to chant orally words they get no sense from.

Students may be encouraged to evaluate the appropriateness of their predictions by asking the questions, "Does this sound like English to me?" and "Does this make sense?" Obviously, the individual with less than native control will at times be unable to answer these questions. Only a great deal of reading experience under guidance which focuses on comprehension of the material can be of help

here. The reader's ability both to confirm his prediction and to correct that prediction, if necessary, will depend upon the integration of all the factors we have discussed. His unfamiliarity with English sentence patterns in combination with the very natural interference of his own native language may make it impossible for him either to recognize his miscue, or to correct it once he has recognized it.

This discussion has suggested:

1. That learning to read English as a second language involves much more than learning to recognize new graphic shapes or learning to relate these to a new system of sounds; and
2. That the teacher of English as a second language can expect miscues due to (a) differences in what the foreign-born reader brings to the process; (b) unfamiliarity or native language interference in the interpretation of cues; and (c) the interaction of both of these in the complicated psycholinguistic process we know reading to be.

The teacher's awareness of these factors which contribute to the difficulty in learning to read English as a second language will guide him both in selecting meaningful materials and in working directly with his students as they read. His awareness of the cultural backgrounds of his students and of their very different personal experiences within these cultures will prompt him to use the students themselves as the major source of their reading materials. His knowledge that reading involves the integration of three very complex kinds of information—graphic, syntactic, and semantic—will prevent him from immediately assuming that the reader's problem must be grapho-phonics. It will help him to plan lessons which teach grammatical structure in a meaningful way and to provide experience in reading those very same structures. Such an awareness will help him to see that the inappropriate meaning which his foreign-born reader may have understood could indeed be appropriate within that reader's own culture-bound semantic relationships. In short, the teacher will see each student's reading difficulties as evidence that he is an effective user of another language—a language with a different writing system, a different grammatical system, and a different system of semantic relationships.

Using Miscue Analysis to Advise Content Area Teachers

Ernie Nieratka

One of the services the reading teacher may be able to perform for content area teachers is a compilation of their students' observed reading ability. This report may take the form of a set of standardized test scores, anecdotal notes, etc. Here a case will be built for the use of an abridged form of miscue analysis as the basis for that report.

A Pontiac, Michigan junior high school undertook the task of taping and analyzing the reading of all seventh graders. Students were given an oral informal reading test consisting of seven paragraphs ranging in readability from 2.7 to 12.0. Difficulties were measured by traditional formulas (Dale-Chall, Flesch); consequently, grammatical structure and concept load were not measured. A retelling of each passage read was also recorded.

Because of the great number of students reading and the consequent number of miscues, an abridged form of miscue analysis was employed. A total miscue count and comprehension score was tabulated for each student. The miscue count included all differences from the expected response using my dialect as the standard. Dialect instances are not properly interpreted as miscues, since they are the expected response, i.e., [menz] for men or [hɛp] for help. A count was made of dialect instances so that teachers could be informed about their validity in a particular student's reading.

Although all miscues are noted on testing sheets, only those considered significant were analyzed beyond listing. (Significant, in this case, means a probable loss of meaning resulting from the miscue.) Miscues which were corrected involved dialectical variations and contained slight phonemic variations. (They could have easily been the expected response in the child's oral language.) Miscues that pre-

served the semantic and syntactic structure to a high degree were not coded.

In one instance, a total of 500 miscues were noted for ten students. Of this total, 214 were considered significant miscues—or 42.8%. Considering only these miscues for analysis cut coding time considerably. Students whose records indicate that they are proficient readers may be eliminated completely from testing or be given a paragraph to read which is a grade level above that of their present rate. This reading and the retelling should immediately indicate a degree of competence for the trained ear and suggest whether further testing is warranted.

It would seem most valuable to analyze the remaining miscues in the attempt to determine their nature. The categories dealt with in the abridged version were as follows: correction of the miscue, dialect improvement, graphic proximity, phonemic proximity, allolog involved, and semantic and syntactic acceptability.

A regression total was kept—not as a part of the miscue count—but merely for performance data. Such a count is valuable when it can be demonstrated to teachers that some students with a significant number of regressions in their oral reading have better competence than students with few or no regressions on the same material.

The results were dittoed, compiled in notebooks, and given to all content area teachers—included were introductory comments to teachers on the findings and an interpretation of them. Two workshops were scheduled to discuss the report and its implications with content area teachers.

For example, if a teacher were convinced Bozo Barett was having a difficult time with his reading, the teacher could consult the guide where the following information would be available:

16 Barett, Bozo T. Tape 2 Side 2 #000-090.
Potential: Very Good
Reading: Recording—A very slow start, needs a warm-up period, constantly inserts and deletes words, regresses often.
Comprehension—Excellent throughout grade level passage 53.7/60.
Comments: Bozo's oral reading performance does not indicate his ability to get meaning from the printed page. He preserves syntax, then seems to rely on graphophonic clues as heavily as meaning. Bozo needs to be reminded that what he is reading must make sense. In a private situation where he is reading for the teacher, have Bozo put passages into his own words at points where his recoding breaks down. Bozo has internalized all useful phonic generalizations. Where his recoding falters, there is evidence of the need for concept building and expansion of his oral language repertoire. More phonic drilling would not be useful. (It is easy to apply phonic rules to a word when you know how it is supposed to be pronounced.) It is

suggested that the student not be forced to read out loud unless he has had time to rehearse the material as in a play situation. Given aid with new words and concepts, Bozo should be expected to handle grade level material.

After seeing the report, one teacher was more comfortable with the fact that Bozo seemed to understand what he was reading and was performing adequately on tests and homework—despite his oral reading performance. Expectations by the teacher were altered considerably.

Even an abridged form of miscue analysis is very time consuming. If one were to compute the total man hours spent by a staff in monitoring standardized tests with their obviously limited insights into print-processing, one may be willing to make the effort. It is certainly worth it—if only to make the teacher aware of the student who may plod through a piece of material, only to be told to be seated by an uninformed teacher when he has an interesting comment on the thickening plot of a story.

Miscue Analysis in a Special Education Resource Room

Suzanne Nieratka

In special education, the trend to have a Resource Room—rather than segregated classes—is becoming prevalent nationwide. This approach avoids labeling and keeps more atypical children in the mainstream of education.

At Oakley Park Elementary, Walled Lake, Michigan, there is a two-year Resource Room pilot project. Any child who has a learning problem can be referred to the Resource Room for special help. Language arts is emphasized in the program. Reading has been the main area of deficiency for these children because reading levels are the main concern of most classroom teachers.

Children are given a pre-evaluation before they are assigned to the room. This evaluation consists of an achievement test, an oral language inventory, and a *Reading Miscue Inventory* or a *Metropolitan Readiness Test.*

Results from these instruments are the basis of a conference by the classroom teacher and the Resource Room teacher regarding placement in the program. The classroom teacher's insights and the Resource Room teacher's impressions from a classroom observation are also discussed.

The *Reading Miscue Inventory* (Y. Goodman & C. Burke, 1972) is administered when the child has developed minimal reading competency. The *RMI* evaluates how the child uses language cues in reading.

Stories read for the *RMI* are taken from the basal readers. Careful attention is given to using a story with a plot that the child can follow. The story is usually below the child's grade level, but with a degree of difficulty so that the child will make some miscues. Most of the children in the program are reading at least two years below

grade level. But they are learning to use the same reading process as more proficient readers, they just do not use it as well.

The results of the *RMI* give a basis for the resource teacher and the classroom teacher to discuss the child's reading ability. The Profile Sheet indicates the strengths and weaknesses of the child's reading strategies. All children, including these, have language strengths to build on.

Goals for expanding the child's reading experiences are supported in the classroom. The total language abilities of a child are taken into consideration in planning his program. The *Reading Miscue Inventory* supports the emphasis on language development and reading strategies rather than on phonics and skills drill. Many learning-disabled children need to build up their oral language confidence before any reading instruction can be effective. These learners are less likely to be able to cope with the obstructions in skills programs.

Miscue frequency gives information on what types of cues the child uses often. Accuracy in reading does not insure comprehension, nor do all miscues have the same significance in reading. Miscues that have little to do with a change in meaning do not have to be emphasized as they do not alter comprehension. The *RMI* can give the classroom teacher examples of this type of miscue.

Example: Dad
Father is home.

The child's retelling is pointed out as the measure of reading for meaning. Often the number of miscues does not correlate to the comprehension score. A child may make many miscues and retain the meaning of a story. Conversely, a child may read very accurately and not be able to follow ideas in a story.

Small groups are the major mode of instruction in the Resource Room. Grouping for developing specific strategies is aided by the *RMI*. One group may rely heavily on graphic similarities. In this situation, context and meaning can be stressed: "Does that make sense?" replaces "Sound it out."

Now
Example: How big is it?

Practice in replacing words that make sense within a sentence context can give the child a better feeling of sentence sense and his ability to understand it.

Children can also benefit from analyzing their own miscues. In looking for meaning, a child will often realize that a miscue "did not make sense" but "looked like another word." Sentences with the types of miscues the child makes can be constructed in order to give the child additional practice in looking for his miscues.

A child must link up the parts—words—with the meaning of the whole. This is a problem which the word callers have.

In administering periodic *RMIs*, progress can be seen in the reader's use of strategies. In keeping close contact with the classroom teachers, it is imperative to have some specific evaluation of the child's growth. Teachers need to be helped to see that slow learners need not be nonlearners.

Helping the Reader: From Miscue Analysis to Strategy Lessons

Dorothy J. Watson

Miscue analysis can be useful to the teacher in finding the reading strengths and weaknesses of his pupils. But a key question for teachers is whether this knowledge will suggest ways to help readers become more efficient. Further, can the procedures and findings of miscue analysis help the teacher build an instructional program on ground rules which are linguistically and psychologically sound? Can these findings help the teacher produce practical, specific, and relevant activities that pay off in the classroom? This chapter presents ways in which miscue analysis can lead to effective reading instruction.

Miscue analysis relates to a comprehensive view of how reading works. This has been represented in a simplified model of the reading process. Using this model, a teacher can identify the major points at which he can help students strengthen their reading strategies. Reading strategies are the natural ways by which readers process information when dealing with written language.[1]

Within the framework of this model, the reader's first experience is his encounter with the author. A meeting between the reader and the author—and their respective worlds—can lead to varying degrees of success or frustration, depending on what the reader and the author bring to each other. The author—through his use of syntactics, semantics, and orthography—must express meaning in a way that allows the reader to interact with the content and the language of the story. The closer the match between the thought and language of the author and the reader, the greater the degree of communication.

1. Y. M. Goodman, "Reading Strategy Lessons: Expanding Reading Effectiveness." Paper read at the University of Chicago Reading Conference, 1972.

Such close interaction implies, however, certain kinds of past experiences which the reader must bring to the situation. Rousch[2] found that readers with prior conceptual knowledge concerning the contents of a story were at an advantage in comprehending that story. It would seem, then, that the building of concepts is a basic concern of the teacher. Because of the psycholinguistic nature of concept building, it is vital that the teacher accept a child's language. A child whose language is rejected may decide that his safeguard against disapproval is to retreat from words—either spoken or written.

The English educator and writer, James Britton,[3] stresses that "teaching grammar" is no solution to language learning, but that language use must consist of "operations" and not of "dummy runs." Because experience is so essential in concept building and practice is vital in language learning, Britton urges an emphasis on "talking and doing." As students gain experience in talking with one another and with the teacher, they begin the "forging of links between language and first-hand experience." Such language and life experiences could be broadened by dramatic improvisation, which encourages spontaneity and exploration, and by hearing stories and poems, which provides the listener with a "solid satisfaction" as well as with a strong incentive for personal reading.

STRATEGY LESSONS

Within the reading process, there is an element of organization which requires readers to use specific strategies. These strategies are, in a sense, stored in the long-term memory of the reader and are energized when the reader interacts with print. The strategies involve predicting, confirming, correcting, and integrating meaning; they are available to the less proficient, as well as to the accomplished, reader. The accomplished reader, however, has sufficiently mastered these strategies so that he reads with ease; the inefficient reader is less able to take full advantage of the strategies and usually labors over the task.

To clarify the relationship of the reading strategies to the model of reading, Goodman and Burke have organized a paradigm which presents, within the sub-systems of the language, an outline of the reading strategies that children control with varying degrees of pro-

2. P. D. Rousch, "A Psycholinguistic Investigation into the Relationships Between Prior Conceptual Knowledge, Oral Reading Miscues, Silent Reading, and Post-Reading Performance." (Ph.D. diss., Wayne State University, 1972).

3. J. Britton, *Language and Learning* (London: Penguin Books, 1970).

ficiency. This paradigm is *not* a developmental and hierarchically arranged catalog of skills that must be tested and drilled.

With the model of reading and the paradigm of strategies, the teacher has guidelines for obtaining information about the reader and his process of reading. With specific information (gained from miscue analysis) about the student's degree of facility with language, the teacher can now develop lessons that are directly significant and immediately applicable to the student's needs. Such lessons have been labeled Reading Strategy Lessons by Goodman and Burke.[4] Strategy lessons are developed as needed, but, because readers often have similar difficulties, the lessons can be used (perhaps with modification) with other students.

A relevant starting point for developing lessons which make use of the interrelated systems of the language is to study a profile of the reader's strengths and weaknesses. One instrument used for obtaining such information is *The Reading Miscue Inventory* (1972).

To show how strategy lessons can grow out of miscue analysis, we will examine the data gathered from Tim, a fifth-grade student.

The Graphic/Sound profile illustrates Tim's use of visual and phonetic information (see Figure 1). Such use of graphophonics appears to be an indisputable strength, but it must be viewed in relationship to the reader's facility with syntactic information. Data must also be analyzed as it relates to the student's ability to make sense of his reading; therefore, it is essential that his comprehension score be considered (see Figure 2).

After relating these elements, we see that this reader's syntactic and semantic strategies are not used sufficiently—partially as a result of overattention to the graphophonic cueing system. In other words, Tim often overuses phonics.

When the efficient reader begins the graphic selection process, he is guided by information provided by the three sub-systems of the language as well as by his personal past experiences; consequently, the final perceptual image is a hybrid of what he expects to see and what he actually sees. The efficient reader samples just enough from print to confirm his conceptual predictions while an inefficient reader allows the print to mislead him or to impede his progress. The following examples indicate ways in which Tim relied heavily on graphic cues and made limited use of syntactic and semantic information:

1. "Not Grandfather's (precious) ax, that he was so proud (pound) of," through summer thought Suzanne.

4. Y. M. Goodman and C. L. Burke, *Reading Miscue Inventory: Procedure for Diagnosis and Evaluation* (New York: Macmillan, 1972).

SOUND/GRAPHIC RELATIONSHIPS					
Sound			Graphic		
High	Some	None	High	Some	None
100	100	100	100	100	100
90	90	90	90	90	90
80	80	80	80	80	80
70	70	70	70	70	70
60	60	60	60	60	60
50	50	50	50	50	50
40	40	40	40	40	40
30	30	30	30	30	30
20	20	20	20	20	20
10	10	10	10	10	10
53%	20%	27%	63%	20%	17%

Figure 1. Tim's Graphic/Sound Profile

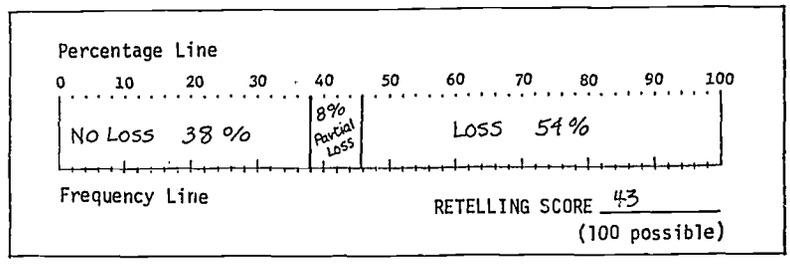


Figure 2. Tim's Comprehension Score

GRAMMATICAL RELATIONSHIPS						
Function			Relationships			
Identical	Indeter-minate	Different	Strength	Partial Strength	Weakness	Over-correction
100	100	100	100	100	100	100
90	90	90	90	90	90	90
80	80	80	80	80	80	80
70	70	70	70	70	70	70
60	60	60	60	60	60	60
50	50	50	50	50	50	50
40	40	40	40	40	40	40
30	30	30	30	30	30	30
20	20	20	20	20	20	20
10	10	10	16% 10	14% 10	10	10
49%		52%			70%	

Figure 3. Tim's Grammatical/Function Graph

2. . . . on the family's small farm, and he looked tired.
3. I wouldn't lend it to anyone but you.

The Grammatical Function graph, as shown in Figure 3, indicates that the reader did not always substitute words that had the same grammatical function as the text word. However, occasionally Tim used syntactic cues along with graphic ones, making his reading sound like acceptable language—even when he was unable to produce a sensible sentence. Note the following examples:

1. Men were shouting directions to his father, and the cries of many gulls added to the noise.
2. He went on snapping beans without a word, only now and then glancing out of the corner of his eye at Suzanne.

Tim's repeated miscues show how he handled unknown words that were repeated throughout the text: he had persistent difficulty with words that had two or more lexical meanings or grammatical functions; and he habitually associated one word with the visual cues of another word, e.g. *brought* for *bought*.

Tim was inordinately concerned with visual cues. When confronted with unknown words, he either omitted the word or produced a word or nonword that tended to match graphically but did not necessarily fit syntactically or semantically. Tim's specific miscues help us discover the strengths and weaknesses in his reading, demonstrated in Figure 4.

If we were concerned with the quantity rather than the quality of miscues, we might be distressed by our reader's first miscue ("Andrea" for "Andre")—which he repeated sixteen times. (The name appeared in the text twenty-eight times.) Tim first substituted "Andrea"; then, perhaps in an attempt to assign a boy's name to the male character, he substituted "An+dra" and "Anly." Tim omitted the name four times, produced partial words three times, and finally settled for "Andrea." These miscues did not result in problems with meaning because in his retelling of the story Tim said, "Andrea was just a regular boy who kept putting things off." Nevertheless, Tim might have had an easier time if he had decided earlier to accept "Andrea" for "Andre" and then had no further concern with getting a graphic-phonemic match.

Tim substituted the names "Suma," "Sunda," and "Arumba" for "Suzanne." He omitted the name twice, substituted the pronoun "he" once, and on the seventh and all subsequent occurrences (ten), Tim

Repeated and Multiple Miscues

Reader	Text	Frequency of Miscue Occurrence
Andrea	Andre	16
An+dra	"	1
Andrea	Andre's	1
Anly	Andre	1
-	"	4
Andrea's	Andre's	2
the	a	2
is	at	1
in	"	1
as	and	4
as	-	2
-	adventure	2
and	as	1
is	"	1
-	all	2
creeping	certain	1
carton	"	1
has	had	1
and	"	1
was	"	1
for	he	1
She	he	2
as	"	1
-	it	2
he	"	2
was	it	1
is	its	1
gathered	glanced	1
gathered	glancing	1
gleam	glance	1
one	on	2
-	of	1
he	"	2
-	the	2
it	"	1
then	"	1
his	"	1
as	that	1
-	"	1
Suma	Suzanne	1
Sunda	"	1
-	"	2
Arumba	"	1
He	"	1
tracks	traps	2
and	said	3

Figure 4. Tim's Reading Miscues

pronounced the name correctly. "Suzanne" was a name Tim had heard prior to the reading.

Tim also had some problems with familiar words. "As" was substituted for "and" four times, although in fourteen occurrences the word "and" was read correctly. The substitution of "and" for "said" was made twice. There were thirteen other occurrences of "said" which appeared in a variety of syntactical positions; these were all read correctly.

Most of Tim's repeated miscues involved function words ("as" for "and," "and" for "an," "as" for "that," "the" for "a," and the omission of "than" and "the"), which resulted in no particular loss of meaning and did not disrupt the flow of his reading. However, several of his substitutions ("then" for "the," "it" for "the") render the sentences grammatically unacceptable. An efficient reader would correct, either orally or silently, unacceptable structures. Rather than correct, Tim tended to accommodate by restructuring the phrase or clause as follows:

1. Andre put one of his father's old axes on the sled. "Yes," he said a little sadly.
2. . . . only now and then glancing out the corner of . . .
3. "I know where there's just the right one," said Andre. "It's growing in the woods across the bay."

Although Tim's accommodations frequently destroyed or modified meaning, they occasionally made sense:

1. The kitchen was warm and cozy, and adventure seemed far away.
2. . . . when fishermen were repairing their nets . . .

Tim had several miscues involving pronoun substitution:

1. . . . but somehow he didn't . . .
2. . . . to get his cap
3. . . . make some rabbit traps," he said.
4. . . . It would be dreadful if it was lost.
5. . . . Suzanne ran to get . . .

Tim corrected some of his pronoun substitutions, but the majority were left uncorrected. He might not be aware of a pronoun's antecedent, resulting in an inability to predict the correct pronoun. The uncorrected substitutions reflect the reader's lack of proficiency with confirming and correcting strategies. Tim's retelling of the story indicates that he knew "Andrea" was a boy and the main character. However, he was confused about Suzanne's relationship to Andre, even though the brother-sister relationship was referred to four times in the story. When asked who Suzanne was, Tim replied, "Just a—sorta like a girl. Probably one of his relatives or something."

There are several word omissions on Tim's Repeated Miscue List. He omitted the word "adventure" twice. He also had single omissions of "repairing," "shivering," "generally," "precious," "sharpen," "pretended," and "juniper." He omitted "certain" once and substituted "carton" for "certain" one time.

In his retelling, Tim recalled all the individuals in the story—but only the character of Andre was significantly developed. He hinted at both the plot and theme, although he was far from specific. He recalled six major incidents in the story but was confused about the setting and background.

STRATEGY LESSONS FOR TIM

From a careful examination of the reading profile graphs, the list of repeated miscues, and the retelling of the story, we can draw some conclusions about Tim's reading and make some specific suggestions concerning his reading instruction.

Except for proper names, Tim's repeated miscues—for the most part—involved the substitution of function words usually replaced within grammatical boundaries (e.g., noun marker for noun marker). Tim was able to read correctly, in a different context, all of these function words. There was no evidence of ignorance or confusion of letter-sound combinations; therefore, flashcard drill of "sight words" would be inappropriate. Also, there was no evidence to indicate that Tim needed drill on sounds. In fact, his overattention to graphophonic cues proved to be a handicap to some degree when he became overly concerned with matching letters to sounds and with meaningless accommodation of the substituted words. Not only must Tim make his reading sound like language, but he must attend to the meaning as well. Tim could begin to understand the importance of gaining the author's message by reading stories to younger children. He should also be encouraged to talk about and to retell stories to others.

Tim occasionally substituted nonwords for unknown words ("happing" for "hopping," "discomfortaly" for "direction," "greenwuck" for "evergreen"); but, for the most part, he simply omitted the unknown words without making a stab at them. Goodman and Burke have made the following suggestions for dealing with such omissions:

> . . . the reader should be encouraged to move from (1) omitting unknown words to (2) producing nonwords with appropriate grammatical inflections to (3) producing words which have some related meaning to (4) producing words with close meaning similarity.[5]

Tim should attempt to substitute words that are real and grammatically suitable for unknown words. To strengthen predicting strategies on the basis of grammatical function and meaning, the teacher might read aloud from Tim's own book—pausing frequently and allowing him to fill in the pauses. Following success with this, the teacher could place a transparent sheet of paper over Tim's book, black out various words that are highly predictable, and have Tim guess at the blacked-out words—on the basis of sentence structure and meaning. Readers are often pleasantly surprised to discover that they can easily manage this activity. They begin to gain confidence when they realize that their substitutions sound right and that they make sense as well. As readers improve their skills, the exercises can be made more difficult. Other cloze procedures (omitting words with specific grammatical functions for which meaning can be easily ascribed, or omitting words at random) could be useful in helping readers anticipate grammatical structure and in developing awareness of grammatical function.

The following story could be used with Tim. Function words or pronouns might first be omitted. Later, other words of troublesome grammatical structure could be omitted.

ALEXANDER'S ADVENTURE

There once was a little black kitten named Alexander. Alexander was not treated very well by the boy who owned him. The boy sometimes_____his tail. He often forgot to give him _____and water and he didn't_____with him very much, either. Alexander felt very_____and thought he would_____away. He would start a new life. He would have an adventure. He would go to Colorado.

So Alexander_____out of the window and started on his long walk to Colorado. Sometimes he was lonely and tired. His ad-

5. *Ibid.*, p. 101.

venture wasn't too much fun, especially when he got chased by a _____or when there was no food and he was very _____.

Then one day Alexander saw a boy sitting on the front steps of a little house. Alexander just couldn't help himself. He_____ to the boy and rubbed his back against his arm. It was love at first sight! The boy, whose name was Walter, gave Alexander food to _____and then scratched his neck until the tired Alexander fell_____. Walter and_____played together every day and they were both very happy.

Maybe someday Alexander and Walter will go to Colorado together.

We discussed earlier Tim's trouble with pronoun antecedents. The following story presents two characters, brother and sister; their masculine and feminine pronouns appear later in the story—after the brother-sister relationship is established. The names of the brother and sister are introduced, without explanation, near the end of the passage. The teacher may want to discuss with Tim the relationships involved.

MY LITTLE BROTHER AND MY BIG SISTER

Sometimes I get so mad at my little brother and my older sister! They bug me to death! Last night my brother took his crayons and scribbled all over my homework paper. Because he messed it up, I had to do the whole thing over again. He is always getting into my things. My big sister is just as bad. She thinks the whole house belongs to her. She washes out her clothes and hangs them all over the bathroom.

Between the two of them I think I'm going nuts. Sometimes I wish I had never heard of brothers and sisters. Look! She's been in my room again. I can tell because my sweater isn't on the floor where I left it. What nerve! What's this? She left me a note.

Hi,
Billy and I have gone for a walk.
He cried all morning because he thought
you were mad at him about the homework
paper. He is really sorry.
We made some cookies and left them for
you in the kitchen.
We love you.
Helen

Gosh, I have a nice brother and a neat sister.

The teacher must proceed carefully when helping children correct their miscues. Overemphasis on correcting miscues could lead students to believe that reading is an exact process and that word-by-

word perfection is desirable. Tim must believe that reading is not just "barking at print"—rather, it is getting the author's message.

Sometimes it is necessary to reread in order to correct misconceptions or simply to make a fresh start when meaning is slipping away. Tim rarely did this. The following story is designed to encourage him to reread when it is desirable to do so. When Tim is given the story, it should be made clear that during the reading it will be necessary to backtrack in order to clarify certain points. This passage also might be used to illustrate how an author develops the major plot-question.

JIM'S ADVENTURE

There were three ways of getting from the Robinson farm to Sam's cabin. Sam was the Robinson's nearest neighbor and it was two miles to his place if you took the path that went safely along the edge of the forest. Jim's father always made him take this path to Sam's if he were going alone.

The other two ways to Sam's were by river.

The quickest route was by turning off the main stream about half a mile from the landing, shooting twenty feet of narrow rapids, then proceeding on the river's branch until you landed almost at Sam's back door. This was the quickest route, but the most dangerous, and Jim's father had forbidden him to take it.

The third way to Sam's was also by river and was quite safe, especially with two people handling the canoe. This river route simply involved staying to the right bank of the river all the way from the landing to Sam's waterfront dock.

Jim's heart was pounding as he guided the canoe into the icy water. As he paddled along the dark right bank of the river, his arms began to ache but he did not slow his pace. At the first sound of the rapids, Jim slowly began to edge the canoe toward the left bank. His muscles strained and he felt his heart jump as he aimed the canoe into the rapids.

Additional Suggestions and Strategy Lessons

Graphic/Sound Relationships. There was no evidence in Tim's reading to indicate a persistent problem with graphic/sound relationships. However, if a teacher feels that a student has such difficulties, he should consider a substitute for isolated word drill. The student might enjoy graphophonic exercises if he were to read (perhaps into a tape recorder or as a member of a choral reading group) some of the jingles and poems that have alliteration or middle and end rhym-

ing elements. The following paperback books offer poems that have a simple sentence structure and reflect the interests of children:

Faces and Places: Poems for You, edited by Lee Hopkins and Misha Arenstein

Pop/Rock Lyrics, edited by Jerry L. Walker

Arrow Book of Poetry, edited by Ann McGovern

Wind Song by Carl Sandburg

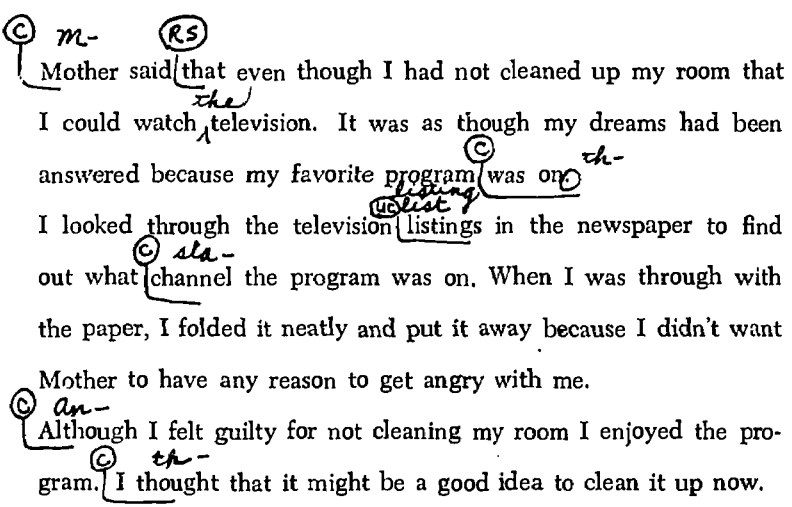
All Day Long and *Take Sky* by David McCord

When We Were Very Young by A. A. Milne

Pop Corn and Ma Goodness by Edna Mitchell Preston

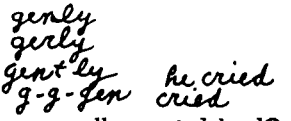
Habitual Associations. There are certain word combinations that many readers habitually confuse, e.g., "brought-bought," "for-from." Sometimes these confusions do not affect meaning to any great degree and can be ignored. However, if the association hinders the reading process by misdirecting the reader—either syntactically or semantically—the confusion should be dealt with.

"Through-though" is often a source of trouble for readers. One reader was presented with the word "through" in isolation. She said, "Th-, though, mmm thong?" The *r* was pointed out to her, and she said, "Oh, yes, thought!" The same reader was given the following passage. Her miscues are marked:



Through the support of strong syntactic and semantic clues, the reader can overcome problems with habitually associated words.

Syntactic and Semantic Relationships. Some readers spend so much time attempting to pronounce a word that they lose the thread of thought. The following is an example of this:



. . . untied the dogcart that generally carried loads of wood to the house.

Although the reader was able to make a reasonable graphophonic match, the flow and the sense of the passage were soon lost. The reader would have maintained the meaning of the sentence if he had omitted the word "generally." Only occasionally does an author build on a word so that the reader is tipped off to the meaning of a passage by his understanding that single word. If it is significant, an author will provide contextual clues and repeat the vital word.

A reader will reduce his omissions of unknown words as he gathers meaning from context. He must make sense of his reading, and he must allow the syntax of the sentence to help him make acceptable substitutions.

A student may feel that he is cheating if he substitutes his own word for the author's. However, he will begin to see the possibilities of such a strategy when he compares two ways of expressing the same idea. For example:

> Yesterday it rained. From time to time there were brilliant flashes of lightning and loud rumbling of thunder. Large balls of hail came down.
>
> Twenty-four hours ago we had some precipitation. Intermittently there were brilliant scintillations of static electricity and intense ruffled reverberations due to the expansion of the air. Massive globules of sedimentary ice came down.

With such exercises, the reader sees that an idea can be expressed in various ways. He also begins to realize that the *author* does not say everything, for reading is not passive. The reader has a responsibility for *thinking* as he is reading

It is hoped that the examples given above can provide the teacher with some general guidelines in ways to base instruction in reading on miscue analysis and its linguistic base; however, the examples should not be seen as restrictive or as final models. Hopefully, they will encourage the teacher to develop materials which will help children utilize more proficiently all the cueing systems of their language.

Bibliography

Aaron, I. E. et al. *Scott, Foresman reading systems.* Glenview, Ill.: Scott, Foresman and Co., 1972.

Allen, P. D. A psycholinguistic analysis of the substitution of miscues of selected oral readers in grades two, four, and six and the relationships of these miscues to the reading process: A descriptive study. Unpublished doctoral dissertation, Wayne State University, 1969.

Allen, P. D. Cue systems available during the reading process. *Elementary School Journal,* 1972, 72 (5), 258-264.

Allen, P. D., Burke, C. L., Goodman, Y. M. & Martellock, H. Applications of psycholinguistics to key problems in reading. Paper presented at Symposium II, International Reading Association, Kansas City, 1969.

Baugh, A. *A history of the English language.* (2nd. ed.) New York: Appleton-Century-Crofts, 1963.

Beldin, H. O. The informal reading inventory. In William Durr (Ed.), *Reading difficulties: Diagnosis, correction and remediation.* Newark, Del.: International Reading Association, 1970.

Britton, J. *Language and learning.* London: Penguin Books, 1970.

Burgess, A. *A clockwork orange.* New York: Ballantine, 1971.

Burke, C. L. A psycholinguistic description of grammatical restructurings in the oral reading of a selected group of middle school children. Unpublished doctoral dissertation, Wayne State University, 1969.

Carlson, K. L. A psycholinguistic description of selected fourth grade children reading a variety of contextual material. Unpublished doctoral dissertation, Wayne State University, 1970.

Carroll, L. *The annotated Alice: Alice's adventures in wonderland and through the looking glass.* M. Gardner (Ed.). New York: Clarkson N. Potter, 1970.

Francis, W. N. et al. *The structure of American English.* New York: Ronald Press, 1958.

Goodman, K. S. A linguistic study of cues and miscues in reading. *Elementary English,* 1965a, *42,* 639-643.

Goodman, K. S. Dialect barriers to reading comprehension. *Elementary English,* 1965b, *42,* 853-860.

Goodman, K. S. Reading: A psycholinguistic guessing game. *Journal of the Reading Specialist,* 1967, *6,* 126-135.

Goodman, K. S. Analysis of oral reading miscues: Applied psycholinguistics. *Reading Research Quarterly,* 1969, 5(1), 9-30.

Goodman, K. S. Behind the eye: What happens in reading. In K. Goodman and O. Niles (Eds.) *Reading: Process and program.* Urbana, Ill.: National Council of Teachers of English, 1970.

Goodman, K. S. Reading: The key is in children's language. *The Reading Teacher,* 1972, *25,* 505-508.

Goodman, K. S. and Burke, C. L. *Study of children's behavior while reading orally.* (U.S.O.E. Final Report, Project No. S425) Contract No. OE-6-10-136. Washington, D.C., U.S. Department of Health, Education, and Welfare, March, 1968.

Goodman, K. S. and Burke, C. L. *A study of oral reading miscues that result in grammatical re-transformations.* (U.S.O.E. Final Report, Project No. 7-E-219) Contract No. OEG-0-8-070219-2806 (010). Washington, D.C., U.S. Department of Health, Education, and Welfare, June, 1969.

Goodman, K. S. and Burke, C. L. When a child reads: A psycholinguistic analysis. *Elementary English,* 1970, *47*(1), 121-129.

Goodman, K. S. and Burke, C. L. *Theoretically based studies of patterns of miscues in oral reading performance.* (U.S.O.E. Project No. 90375) Grant No. OEG-0-9-320375-4269. Washington, D.C., U.S. Department of Health, Education, and Welfare, March, 1973.

Goodman, Y. M. A psycholinguistic description of observed oral reading phenomena in selected young beginning readers. Unpublished doctoral dissertation, Wayne State University, 1967.

Goodman, Y. M. *Longitudinal study of children's oral reading behavior.* (U.S.O.E. Final Report, Project No. 9-E-062) Grant No. OEG-5-9-325062-0046. Washington, D.C., U.S. Department of Health, Education, and Welfare, September, 1971.

Goodman, Y. M. Reading diagnosis: Qualitative or quantitative. *Reading Teacher,* 1972, *26*(1), 32-37.

Goodman, Y. M. Reading strategy lessons: Expanding reading effectiveness. Paper presented at the University of Chicago Reading Conference, 1972.

Goodman, Y. M. and Burke, C. L. Do they read what they speak? *Grade Teacher,* 1969, *26*(7), 144-150.

Goodman, Y. M. and Burke, C. L. *Reading miscue inventory: Procedure for diagnosis and evaluation.* New York: Macmillan, 1972.

Goodman, Y. M. and Goodman, K. S. *Linguistics, psycholinguistics, and the teaching of reading.* Newark, Del.: International Reading Association, 1971.

Gutknecht, B. A psycholinguistic analysis of the oral reading behavior of selected children identified as perceptually handicapped. Unpublished doctoral dissertation, Wayne State University, 1971.

Hodges, R. E. and Rudorf, E. H. *Language and learning to read: What teachers should know about language.* Boston: Houghton Mifflin, 1972.

Martellock, H. A psycholinguistic description of the oral and written language of a selected group of middle school children. Unpublished doctoral dissertation, Wayne State University, 1971.

Menosky, D. M. A psycholinguistic description of oral reading miscues generated during the reading of varying portions of text by selected readers from grades two, four, six, and eight. Unpublished doctoral dissertation, Wayne State University, 1971.

Menosky, D. M. and Goodman, K. S. Unlocking the program. *Instructor,* 1971, *80*(7), 44-46.

Moir, L. H. A linguistic analysis of certain stylistic elements of selected works of literature for children and their relationship to readability. Unpublished doctoral dissertation, Wayne State University, 1969.

Miller, J. E., Jr., *Word, self, reality.* New York: Dodd, Mead, 1972.

Miller, G. A. The magical number seven, plus or minus two: Some limits on our capacity for processing information. *Psychological Review,* 1965, *63,* 81-82.

Miller, W. *The cool world.* Fawcett World, 1969.

Moffett, J. *A student-centered language arts curriculum: Grades K-13.* Boston: Houghton Mifflin, 1968.

Page, W. A psycholinguistic description of patterns of miscues generated by a proficient reader in second grade, an average reader in fourth grade, and an average reader in sixth grade encountering basal reader selections ranging from pre-primer to sixth grade. Unpublished doctoral dissertation, Wayne State University, 1970.

Page, W. A linguistic appraisal of isolated word recognition testing. *The Michigan Reading Journal,* 1971, *5*(2), 28-35.

Powell, W. and Dunkeld, C. Validity of IRI reading levels. *Elementary English,* 1971, *48*(6), 637-642.

Romatowski, J. A psycholinguistic description of miscues generated by selected bilingual subjects during the oral reading of instructional reading material as presented in Polish readers and in English basal readers. Unpublished doctoral dissertation, Wayne State University, 1972.

Rousch, P. D. A psycholinguistic investigation into the relationship between prior conceptual knowledge, oral reading miscues, silent reading, and post-reading performance. Unpublished doctoral dissertation, Wayne State University, 1972.

Ryle, G. *The concept of mind.* New York: Barnes & Noble, 1949.

Sims, R. A psycholinguistic description of miscues generated by selected young readers during the oral reading of text materials in black dialect and standard English. Unpublished doctoral dissertation, Wayne State University, 1972.

Smith, E. B., Goodman, K. S., and Meredith, R. *Language and thinking in the elementary school: Curriculum and teaching to develop children's symbolic process.* New York: Holt, Rinehart and Winston, 1970.

Smith, F. *Understanding reading: A psycholinguistic analysis of reading and learning to read.* New York: Holt, Rinehart and Winston, 1971.

Thornton, M. A psycholinguistic description of purposive oral reading and its effect on comprehension for subjects with different reading backgrounds. Unpublished doctoral dissertation, Wayne State University, 1973.

Wardhaugh, R. *Reading: A linguistic perspective.* New York: Harcourt, Brace and World, 1969.

Watson, D. A psycholinguistic description of the oral reading miscues generated by selected readers prior to and following exposure to a saturated book program. Unpublished doctoral dissertation, Wayne State University, 1973.

Weber, R. The study of oral reading errors: A survey of the literature. *Reading Research Quarterly,* 1968, 9, 96-119.