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Long, Patricia Catherine

THE EFFECTIVENESS OF THE READING MISCUE INVENTORY AND THE READING APPRAISAL GUIDE IN GRADUATE READING PROGRAMS

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THE EFFECTIVENESS OF THE READING MISCELLANEUM INVENTORY
AND THE READING APPRAISAL GUIDE IN
GRADUATE READING PROGRAMS

by

Patricia Catherine Long

A Dissertation Submitted to the Faculty of the
DEPARTMENT OF ELEMENTARY EDUCATION

In Partial Fulfillment of the Requirements
For the Degree of
DOCTOR OF PHILOSOPHY

In the Graduate College

THE UNIVERSITY OF ARIZONA

1984
As members of the Final Examination Committee, we certify that we have read the dissertation prepared by Patricia Catherine Long entitled The Effectiveness of the Reading Miscue Inventory and the Reading Appraisal Guide in Graduate Reading Programs and recommend that it be accepted as fulfilling the dissertation requirement for the Degree of Doctor of Philosophy.

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ABSTRACT

The purpose of this study was to examine differences in the effectiveness of two graduate teacher education programs in reading assessment, one group using the Reading Miscue Inventory and the other using one of its simplified forms, the Reading Appraisal Guide.

The main question that is answered in this study is whether it is more effective for teachers to be given training in the Reading Miscue Inventory, or is training in the Reading Appraisal Guide sufficient to enable teachers to carry out competent assessments of children's reading ability?

In the six months of the study's duration, different types of data were collected. These consisted of assessments of children's taped readings of a story by two groups of teachers before (the pretest) and after (the posttest) their respective training programs; anecdotal records of the teachers' views of the programs and the assessment instruments they were using, and observations of the teachers' reading assessments of children selected by them for their practicum.

Quantitative analyses of the pretest and posttest were made; these were based on criteria drawn from the Reading Miscue Inventory manual and the investigator's own miscue analysis of the children's taped readings. They showed that the teachers trained in miscue analysis, as reflected in the Reading Miscue inventory, were able to ix
make significantly better assessments of children's reading ability than the teachers trained in the Reading Appraisal Guide.

In addition to the quantitative analysis, written and oral statements made by the teachers during the pretest, posttest and training programs were subjected to qualitative analysis and comparisons. These indicated that both groups' programs had strengthened the teachers' adherence to the Goodman model of reading, but those trained in the use of the Reading Miscue Inventory developed more effective assessment abilities and were more approving of the instruments they used, than were those trained in the use of the Reading Appraisal Guide.

It was concluded that the Reading Miscue Inventory is an appropriate assessment instrument for use in college graduate reading programs. It proved complex and time-consuming to use, but at the same time it enabled teachers to make more accurate, in-depth assessments of children's reading than did the Reading Appraisal Guide. The latter was found to have some serious drawbacks, mostly arising from attempts to make it quicker and easier to use.
CHAPTER I

TEACHER EDUCATION AND READING EVALUATION

The publication of the Reading Miscue Inventory (Y. Goodman & Burke, 1972) was a landmark in the development of the teaching of reading because it brought miscue analysis within the reach of the classroom teacher. K. S. Goodman developed miscue analysis as a research technique to get at readers' underlying strategies by analyzing their oral reading performance. He constructed the Taxonomy of Reading Miscues (K. S. Goodman, 1969b) to help him in the search for an understanding of reading, and it has, in turn, been adapted in his construction of a model of the reading process.

The Reading Miscue Inventory is a tool designed by K. Goodman and Burke (1972) in an attempt to narrow the tremendous gap they saw between reading theory and practice by providing a means to apply miscue analysis research to the classroom. It uses a simplified form of the Goodman Taxonomy of Reading Miscues to analyze pupils' oral reading, together with a retelling format for assessing comprehension.

The Problem

Although the Reading Miscue Inventory is highly regarded, particularly by those who support the whole language approach to teaching reading (Theofield, 1978), it is undeniably complex, and
effective training in its use is considerably more exacting and time consuming than for other reading assessment measures.

Teacher educators are therefore presented with a problem. Given the time constraints of a general course in reading or of a more specialized one in the assessment and remediation of reading difficulties, a broad coverage of the subject and instruction in a range of the simpler assessment instruments as well as in-depth training in the use of the Reading Miscue Inventory cannot be provided. Educators must therefore opt for one or the other, i.e., for breadth or depth of coverage. Y. Goodman's comments (1982) and the investigator's perusal of the relevant literature and experience in teacher training indicate that many educators want to have it both ways and are looking for a measure of reading that is as effective as the Reading Miscue Inventory but easier and less time consuming to use.

Over the past decade a number of attempts have been made to produce instruments that either simplify the coding of miscues or combine the Reading Miscue Inventory with an informal reading inventory or cloze procedure (Williamson & Young, 1974). However, they have been designed by teachers and researchers who are already familiar with the Reading Miscue Inventory itself and who are therefore likely to have sufficiently in-depth knowledge of reading and language to be able to find out what they want from a simplified form. For the inexperienced teacher this may not be so. Y. Goodman & Burke (1976, p. 3) stated:
A simpler form cannot be supplied until someone has initiated the concepts of miscue analysis because the concepts involved are usually new to preservice and inservice teachers, and new concepts often seem overly complex. There is no simple road to new and complex ideas.

The main question that is answered in this study is whether it is more effective for teachers to be given training in the Reading Miscue Inventory, or is training in the Reading Appraisal Guide, which is a modified form of the Reading Miscue Inventory, sufficient to enable teachers to carry out competent assessments of children's reading ability?

Significance of Miscue Analysis to Teacher Education

The Reading Miscue Inventory is more than just an assessment tool, a function that Y. Goodman (1982) described as secondary. Its primary purpose is to enable teachers to gain insights into the reading process that will help them understand reading behaviors. Through an intensive examination of a single oral reading, teachers gain an understanding of the reading process itself and of the interaction between language and thought that underlies it. They learn that reading is not passive word calling but purposeful interaction of the reader with the text. They also learn that the reading process is a complex cycle of predicting, correcting and confirming strategies, for which readers use a range of graphophonic, syntactic, and semantic cues from the text and their own memories to construct meaning (K. S. Goodman, 1967). Only when the users of miscue analysis have developed
such an in-depth view of the reading process will they be able to make effective use of the Reading Miscue Inventory as a diagnostic instrument (Y. Goodman & Burke, 1976; Goodman & Goodman, 1977).

With the help of the Reading Miscue Inventory, teachers are able to make the following assessments; based on both qualitative and quantitative analyses of their pupils' reading:

1. Assessment of the readers' understanding of a complete story rather than a series of words, sentences, or out-of-context paragraphs.
2. Assessment of the use of the three language cuing systems; graphophonics, syntax, and semantics.
3. Assessment of the use of reading strategies for prediction, correction and confirmation.
4. Assessment of oral reading as it occurs (comprehending).
5. Assessment of the retelling after the oral reading (comprehension).
6. Assessment of the readers' overall strengths and weaknesses in order to plan ways to help them become better readers.

There is no single reading assessment tool that provides as much information about readers as the Reading Miscue Inventory and some of its modifications. Yet there is an enormous variety of reading tests currently on the market. The 7th Mental Measurements Yearbook (Buros, 1978) lists approximately 300, and new ones are constantly appearing. Most can be divided into two categories, i.e.,
assessment of comprehension and assessment of skills. Those which assess comprehension usually consist of graded paragraphs for oral or silent reading, followed by a series of questions. Pupils' oral reading may be scored by calculating the number of errors per 100 words and comprehension assessed by the percentage of questions correctly answered. These measures differ from the Reading Miscue Inventory in that they do not require the reading of a single complete narrative or expository passage of some length and the results are likely to be quantitative rather than qualitative.

Skills tests include assessment of the identification of isolated letters and words, identification and blending of letter sounds and word parts, forms of word matching such as rhyming and pairing synonyms and antonyms, definitions of words, and a variety of tests of punctuation, grammar, and usage. Their purpose is to discover to what degree these skills have been mastered by the readers, but the user's interest often focusses on the scores obtained rather than readers' actual responses.

Reading assessment in classroom and clinic is often carried out by administering a battery of such tests, the results of which may be integrated into a diagnostic profile or interpreted separately. The investigator believes that the test-battery approach both reinforces, and is reinforced by, a traditional view that reading consists of a hierarchy of subskills and that comprehension is only one of these, along with mastery of phonic skills and acquisition of sight vocabulary. Skills-based reading programs for beginning readers
emphasize careful, word-by-word "decoding" of controlled texts, together with vocabulary drill, alphabetizing, and practice in word attack skills in order that readers may learn to recognize most of the words in the text and sound out the ones they do not know. Chall (1979) suggested that only after they have learned to decode automatically should readers turn their attention to meaning.

However, K. S. Goodman (1979b, p. 12) stated: "We have tended to think that we facilitated learning to read by breaking up written language into bite-sized pieces for learners. Instead we turned it from easy-to-learn language into hard-to-learn abstractions." Goodman and Goodman (1981) see reading as a whole language, comprehension-centered process that children learn by beginning with familiar meaningful wholes. They soon develop notions about the forms of written language from their active involvement with the many sources of print around them and from their constant manipulation of these. Learning to read is natural (Goodman & Goodman, 1979), and the teacher's function is not to be a drillmaster checking off skills as they are learned but to act as a facilitator and guide, creating a literate classroom climate that will stimulate reading and writing, always focused on meaning (Goodman & Goodman, 1981).

It appears that in the United States skills-based approaches are currently more popular than whole language ones. A study conducted by Harste (1977) indicated that more than 70% of classroom teachers were skills oriented and considered word recognition and word attack skills to be the most important factors in learning to read. Y. Goodman
Burke (1972) found similar opinions in their survey of elementary school teachers. Burke (1979) believed that these views are reinforced by the emphasis that both the state and federal governments place on accountability and by the outpourings of educational publishers. Teacher educators also contribute by encouraging teachers to become passive acceptors of whatever approaches to reading are currently popular. Reading courses are too often confined to an introduction to the use of currently available materials based on common sense, trial and error, previous practices and whim rather than on sound theory. Examination of theoretical models of language and reading and the findings of applied research seldom occurs (Burke, 1979).

Two decades ago Austin and Morrison's (1963) survey found a widespread need for sound, theoretically based teacher preparation courses in reading. It appears the need still exists. The investigator believes that the Reading Miscue Inventory and some of its modifications can help fill that need because they are consistent with a whole language approach and rest on the solid foundation of a research-based theory and model of reading. They give teachers a valid means of assessing their pupils and, even more importantly, help them understand what it is they are assessing. Teachers who understand the processes underlying what they are trying to teach are in a much better position to make knowledgeable professional judgments about their reading programs than those who do not.
The purpose of this study is to examine the differences in the effectiveness of two graduate reading programs:

1. Training in the assessment of reading problems with practice in the Reading Appraisal Guide, a modified version of the Reading Miscue Inventory, such as might reasonably be provided in a standard graduate college course in reading.

2. Training over the same period of time in the use of the Reading Miscue Inventory.

The research questions addressed by this study are considered both quantitatively and qualitatively. The quantitative questions specifically addressed are:

1. Do the members of the group using the Reading Miscue Inventory significantly improve their scores on an evaluation of their assessments of two readers between the pretest and posttest?

2. Do the members of the group using the Reading Appraisal Guide, a simplified form of the Reading Miscue Inventory, significantly improve their scores on an evaluation of their assessments of two readers between the pretest and the posttest?

3. Do the scores of one group improve significantly more than the scores of the other group between the pretest and the posttest?

The qualitative questions addressed are:

1. What indications are there during the program of changes in the teachers' knowledge and application of miscue analysis techniques?
2. What presuppositions and values concerning reading do the teachers bring to the program and how do these change during the program?

Basic Assumptions

1. Teachers in both groups would try to improve their ability to analyze children's reading.

2. Improved performance in analyzing children's reading would result in increased teacher effectiveness in promoting reading ability.

Limitations

1. A possibility of investigator bias exists because the investigator conducted the training of both groups.

2. The investigator, an additional rater, the teachers and the children taking part in the study are Australians. Because of differences in background and the educational system in which they operate, their behavior may not be generalizable to comparable populations in other countries.
CHAPTER 2

REVIEW OF RESEARCH

This chapter provides evidence that the Reading Miscue Inventory supplies needful theoretical bases for teacher education courses in reading and examines some simplified forms that claim to be equally effective.

Teacher Education in Reading

If reading teachers are to guide their pupils successfully, they must have a good grasp of the theoretical bases of reading, and it is the responsibility of teacher educators to provide them with the means to build such bases. Only in this way can the teachers develop appropriate instructional and assessment strategies and the means of providing classroom climates that will encourage children's reading, writing, and oral language development.

Twenty years ago, Austin and Morrison (1963) conducted a national survey of teacher education courses in reading in universities and colleges. They found that the average teacher had only one course in reading and that the courses were of very variable quality. Matters do not seem to have improved greatly. Harste (1977) cited evidence from a national survey that 80% of the teacher education courses included only one course in reading and that one-third of a nationwide sample of reading teachers did not meet minimum standards of competence in reading set up by the International Reading Association, a professional organization for reading teachers.
It appears that many teacher educators fail to give their students the opportunity to make decisions about reading on a rational basis. Reading courses are often limited to inculcating a knowledge of some current methods and materials for teaching and testing reading, and little attention is paid to examination of theoretical models of reading or weighing evidence of applied reading research (Burke, 1979; Harste et al., 1976).

These views are supported by an examination of Rude's (1981) teacher questionnaire for assessing the minimal knowledge that an elementary school teacher should possess about the teaching of reading. The instrument was validated by 46 professors who were currently engaged in teaching and research in reading. Of the 52 questionnaire items, 30 were concerned with methodology, 10 with specific reading skills, and 10 with assessment measures. Only three questions related to reading theory. The emphasis was decidedly on methodology and skills.

Teachers tend to be strongly influenced by educational materials, and there is evidence that many of these are heavily skills-oriented. Durkin (1981) examined five major basal reading programs and found far heavier emphasis on practice and assessment of reading skills than on reading comprehension. It is not surprising to learn that two surveys by Harste (1977) and Y. Goodman & Burke (1976) also found that most teachers were more concerned with teaching reading skills than they were with teaching reading.
Nevertheless, Carroll & Walton (1979) have noted widespread controversy at every level of the educational hierarchy between supporters of the traditional, skills-based approaches to teaching, and the more recently developed whole language approach, which is theoretically based. Froese (1982) in a national survey asked personnel in graduate faculties in reading to name the most influential authors in their discipline. The most frequently cited were Frank Smith and Kenneth S. Goodman, the two foremost exponents of a whole language approach to reading based on a psycholinguistic view of the reading process.

On balance, it appears that there is widespread interest among teacher educators in the recent developments in reading theory but that teacher education courses, and in consequence teachers themselves, are still largely concerned with the minutiae of a skills-oriented methodology.

The research of both K. S. Goodman and Y. Goodman has been expressly undertaken to provide the theory and model of reading that has been noticeably lacking in teacher education courses (K. S. Goodman, 1976b). K. S. Goodman (1979a) has stated that his goal is not to turn teachers into theoreticians or researchers but to help them gain a strong, comfortable base from which to make moment-to-moment and long-range instructional decisions. Y. Goodman (1976, 1978, 1979) through her teaching and writing has provided teachers with the means of developing effective strategies for teaching reading, based on K.S. Goodman's model of reading and her own observations of children's
reading behaviors. The Reading Miscue Inventory (Y. Goodman & Burke, 1972) is a noted example, and there is evidence that it can exert a powerful influence on teachers' theoretical orientations and classroom practices in reading (Steinruck, 1975; Feely, 1977; Jongsma, 1978; Mitchell, 1978).

**Interrelationship of Teachers' Beliefs, Classroom Practices, and Training**

Teachers' beliefs about reading affect their teaching practice, and both are strongly influenced by their training (Graham & Hudson, 1978). Studies carried out by Steinruck (1975) and DeFord (1982) linked teachers' theories and practices. Both researchers developed questionnaires designed to probe teachers' beliefs about the training of reading. Steinruck's (1975) model was validated by comparing the results with observations of the teachers' classroom practices, and DeFord's (1982) was subjected to a careful three-stage validation study. Both measures showed that teachers' theoretical orientations correlated highly with their teaching practices.

Mitchell (1978) indicated that teachers' theoretical orientation correlates highly with their teaching practices in her study of teachers oriented towards the Goodman (whole language) or Gattegno (phonic) approaches to teaching reading. Six teachers' theoretical positions were analyzed, using an instrument developed for the purpose and validated by Goodman and Gattegno, in which teachers were observed and interviewed and their behaviors and responses analyzed. Results indicated a high correlation between orientation
and practice and between practice and training. It was also noted that the pupils' oral reading tended to mirror the nature of the reading instruction given them and that teachers' responses to their pupils' oral reading was a significant indicator of their own beliefs about the reading process.

Five studies have attempted to assess the effects of training in miscue analysis, using the Reading Miscue Inventory, on the theoretical orientations and classroom practices of teachers. Feeley (1977) has carried out two studies on the effects of such training. She included the Reading Miscue Inventory in regular case study procedures used by graduate reading students in her diagnosis course. She later supervised three of the students in their remediation case studies and observed the impact of the RMI on their assessment and remediation. In all three cases its use added information to or changed the course of diagnosis made with other instruments and resulted in modifications of the graduate tutors' strategies from teaching isolated skills to developing context-oriented procedures. The children's reading improved, and the tutors gained insights into their pupils' processing strategies.

In the second study Feeley (in preparation) introduced the Reading Miscue Inventory to 16 teachers in a graduate course in the correction of reading difficulties. Most of them had not heard of it previously. A survey of class reactions at the end of the course indicated approval, with a score of 3.6 on a 5 point Likert scale.
The one low scoring component was the coding system (2.9), which some students found difficult. The only really negative comment concerned the time involved (up to 5 hours to do one profile) a reaction noted by the authors of the Reading Miscue Inventory (Y. Goodman & Burke, 1976) and the main motivation expressed by those who have sought to design simplified forms of the Inventory.

Jongsma (1978) conducted a study to discover whether training in miscue analysis would influence teachers' attitudes towards oral reading miscues. Twenty-three experienced teachers were enrolled in a graduate course in diagnostic and remedial reading and given 4 weeks' training in miscue analysis by working through the materials developed by Y. Goodman and Burke (1972) for the Reading Miscue Inventory. The program included lectures, demonstrations, and practice in coding and interpreting miscues from both taped examples and children of their own choosing. Teacher attitudes were assessed by having them write descriptive assessments of a taped sample of a child's reading both before and after the courses. Comments were classified as positive (alluding to strengths), negative (alluding to weaknesses), and descriptive. Statistical analyses indicated significantly more positive comments were made after the training, suggesting that it encouraged teachers to look for children's strengths rather than their weaknesses.

Geissel and Knafle (1978) conducted a somewhat different study into the effects of miscue analysis training on teacher perception of oral reading errors. The subjects were 60 graduate and undergraduate
students enrolled in a miscue analysis course. The pretest and post-test consisted of having the students choose the more serious of a series of paired oral reading "errors" in various contrasting categories. A statistical analysis indicated that instruction in miscue analysis appeared to have caused limited changes; the tendency to regard meaning change as serious was increased, and students showed greater tolerance for dialect miscues. The pretest indicated that the students already had linguistically sophisticated views when they began the course, so the researchers were probably preaching to the converted.

A more in-depth study with broader implications was conducted by Steinruck (1975). She attempted to discover the effect of instruction in miscue analysis on teacher perception of the reading process and usual instructional practices. Her subjects were 16 elementary and high school teachers in an inservice course consisting of 2 weeks' workshops in miscue analysis, including instruction, discussion, individual conferences, and follow-up in schools. Pretests and post-tests consisted of a questionnaire on teachers' perceptions of reading and the use of a checklist by trained observers to analyze the teachers' classroom performances. Results specifically indicated that:

1. Teachers' perceptions of the reading process correlated highly with their teaching practices.

2. Their views changed from seeing reading as a series of exact skills to seeing it as an ongoing process involving interaction between thought and language.
3. Their instructional procedures after the workshop showed greater emphasis on teaching within a whole language context, greater focus on comprehension, and increased emphasis on helping children to make more use of syntactic and semantic cues to determine unknown words in reading.

The five aforementioned studies plus those carried out by DeFord (1982) and Mitchell (1978) included undergraduate and graduate teachers, covered a range of courses, and used widely differing assessment measures. Although it is difficult to make comparisons from one study to the next, the following inferences may be made from their results:

1. Teachers' theoretical orientations influence their teaching practices.

2. Teachers' theoretical orientations are influenced by their training.

3. The Reading Miscue Inventory exerts a markedly strong influence on both the theory and practices of teachers who have used it in teacher education classes or inservice workshops.

These inferences are of particular relevance to the present study, for they indicate that the Reading Miscue Inventory exerts a considerable influence on those teachers who have been properly trained in its use. The question answered in the present study is whether a simplified form of the Reading Miscue Inventory can exert an equally useful influence. In the following pages the Reading Miscue Inventory and its theoretical bases are described. Fifteen modifications of the Inventory are then examined and one selected for the study.
The Goodman Model of Reading

It has been shown that the Reading Miscue Inventory is an effective training and assessment instrument. Because it is based on the Goodman theory and model of reading, training in its use helps teachers understand the reading process as well as develop sound teaching strategies based on an in-depth assessment of their pupils' needs.

K.S. Goodman (1970a, p. 3) defined reading as "a psycholinguistic process by which the reader, a language user, reconstructs, as best he can, a message which has been encoded by a writer as a graphic display." He began his work in linguistics and reading with four key assumptions:

1. Linguistics concepts and methods can explain reading.
2. Reading is language.
3. Readers are users of language.
4. Nothing readers do is accidental; it all results from interaction with the text.

These assumptions have remained key ones in his work over almost two decades (K. S. Goodman, 1982a).

(Psycho) Linguistic Concepts and Methods Can Explain Reading

In the sixties K. S. Goodman (1970b) was strongly influenced by developments in linguistics and particularly in the new discipline of psycholinguistics, the study of the interaction of thought and language. Miller (1965) considered that the central task of
psycholinguistics is to describe the combination of psychological and linguistic processes that occur when people use language. Because a reader is a language user, a study of psycholinguistics must contribute to the understanding of the reading process by leading to a clearer understanding of how language is used. As Goodman (1967) came to realize, reading is a psycholinguistic process.

Reading is Language and Readers Are Users of Language

All human societies are linguistic, i.e., they use language to communicate and as a medium for thought and learning. When a society reaches a point where it needs communication that will endure over time and space, then written language begins to develop (K. S. Goodman, 1982c) and, with it, the art of reading. Children are users of language: They learn it at a tender age with astonishing speed and proficiency by meaningful interaction with their environment (Smith & Goodman, 1971). Since reading is language, and children are competent users of language when they enter school, they can learn reading (in much the same way as they learn oral language) by constant exposure to and integration with the written language in their environment (Goodman & Goodman, 1981).

Nothing Readers Do Is Accidental: It All Results from Interaction with the Text

K. S. Goodman stresses that reading is an active process, depending on the transaction between readers and writers, on their knowledge of print, syntax, and semantics, their conceptual ability,
and their past experiences. For too long we have tended to look on readers as passive receptors of print, not realizing that reading is a transaction: "The reader responds to the verbal stimuli in the text, but at the same time he must draw selectively on the responses of his own fund of experience and sensibility to provide and organize the substance of his response" (Rosenblatt, 1978, p. 43).

During this transaction readers use three sources of information in order to gain meaning (K. S. Goodman, 1982b):

1. Graphic information: The printed message that readers scan visually contains graphic information. During oral reading they will encode the graphic input immediately into speech, but proficient silent readers go directly from graphic input to meaning (K. S. Goodman, 1982a).

2. Syntactic information: As readers begin to process the visual input, they call on knowledge of syntactic structures to help them gain information about the meaning of the text.

3. Semantic information: Readers also call on their knowledge of the meaning of words and phrases in the context of the printed message, which is the semantic information. Their semantic and syntactic knowledge thus help them process the graphic input, moving from surface structure to the deep structure of meaning. These three sources of information are used virtually simultaneously to enable readers to gain the meaning that is as close as possible to that which the writer intended.
Readers do not read every word. They sample the print, selecting significant features and using their knowledge of language in what K. S. Goodman (1967) called a psycholinguistic guessing game to fill in the gaps. They test their guesses, or predictions, by further sampling and by deriving meaning from the text they have decoded. If their predictions are not confirmed, i.e. if the message does not make sense, then good readers will reprocess the available graphic, syntactic and semantic clues in order to correct any misconceptions. Only when they have gained meaning from the graphic display will proficient readers be satisfied.

All this occurs rapidly and mainly at a subconscious level; readers are not aware that they are not reading every word or that they are using rules of language so complex that they cannot describe them precisely.

To emphasize the integrated nature of the reading process, a recently up-dated presentation of the Goodman model (Goodman & Goodman, 1978) has described it as a series of cycles (optical, perceptual, syntactic, and meaning) which melt into each other as readers move from initial recognition of the written symbols to comprehension of the text.

**Miscue Analysis**

K. S. Goodman's tool for his reading research is the Taxonomy of Reading Miscues. Miscue analysis is the technique he uses for getting at the strategies readers use in their interaction with the text.
Miscue analysis compares observed responses with expected responses as subjects read a story or other written text orally. It provides a continuous basis of comparison between what readers overtly do and what they are expected to do. A key assumption is that whatever the readers do is not random but is the result of the reading process, whether successfully used or not (Goodman & Goodman, 1978, p. 2-2).

The purpose of a miscue analysis is not to pounce upon "errors." K. S. Goodman has described certain reading tests as anchors against progress because they encourage teachers to do just that: Count errors made in a single reading performance and assume that they have made a useful assessment of the reader's competence (K. S. Goodman, 1974). His research indicates that 100% accuracy in oral reading is not possible or even desirable. Readers obsessed by the need for accuracy may be less efficient in deriving meaning from their reading (K. S. Goodman, 1972a). Reading miscues, therefore, are not necessarily errors but "windows on the reading process" (K. S. Goodman, 1979b, p. 3) and a way of discovering what strategies a reader uses to gain meaning from print. It is rare that one can say for certain exactly what has taken place in any individual miscue, but the emerging pattern produces a picture of what the reader is doing when he reads (K. S. Goodman, 1969a). Only someone with a thorough understanding of the reading process can effectively interpret a reader's performance in order to get worthwhile, valid insight into his underlying competence (K. S. Goodman, 1972b).
The Goodman Taxonomy of Reading Miscues

A Taxonomy of Cues and Miscues in Reading was published in 1969 (K. S. Goodman, 1969b); it enabled comparisons to be made between an OR (observed response) and an ER (expected response) over 28 categories. Each miscue might be categorized in a number of ways: As a self-correction, a repeated miscue, a dialect miscue, an allograph, a peripheral or associational miscue or a combination of any of these. All miscues were examined for their graphic, phonemic, syntactic, and semantic proximity to the text and were assessed at several levels: Morpheme, word, phrase, clause, and sentence. Finally, their degree of intonational, syntactic, and semantic acceptability was assessed, and it was decided whether they involved transformations of deep structure or differences of meaning from that in the text (K. S. Goodman, 1969b).

A number of alterations and refinements were made as the result of further research, and a revised version, the Goodman Taxonomy of Reading Miscues, was published a few years later (Allen & Watson, 1976). The number of miscue categories was reduced to 18 by eliminating or combining 10 of them with others.

The Reading Miscue Inventory

From the taxonomy, which is primarily a research tool, Goodman and Burke (1972) have developed the Reading Miscue Inventory (RMI) as a measure for teachers to use for evaluating their pupils' reading performances and developing teaching strategies.
to help them read better. The RMI includes tapes of readings, coding sheets and sample reading texts. The manual provides an outline of the reading process, directions for assessment and a section on instructional strategies. Procedures for carrying out a miscue analysis (whether the full taxonomy or the simpler inventory is used) are as follows:

1. The teacher selects a story for the child to read. It must be one he or she has not read before, difficult enough to generate at least 25 miscues, and of a length that can be handled in a single sitting.

2. The child is asked to read the story aloud and then retell it in his or her own words.

3. The child is told that no help will be given during the reading.

4. The teacher tapes the child's reading and notes any miscues on a copy of the text. A child who falters or asks for help is encouraged to guess the word or to skip it and move on.

5. The child retells the story. After an initial unaided retelling, the teacher asks probing questions in order to expand information given by the child.

6. The miscues are coded and analyzed according to the taxonomy or inventory being used. Patterns of miscues and the retelling are studied and evaluated.

7. (RMI only) Teaching strategies are developed from the evaluation.
Proceedings for administering the Reading Miscue Inventory are the same as those used for the original miscue analysis, but analysis of the miscues has been simplified and the taxonomy questions reduced to nine categories: dialect, intonation, graphic similarity, sound similarity, grammatical function, correction, syntactic acceptability, semantic acceptability, and meaning change.

**Modifications of the Reading Miscue Inventory**

If imitation is the sincerest form of flattery, Goodman and Burke should be feeling flattered. This investigator has so far located and examined 15 published imitations, or adaptations, of their Reading Miscue Inventory and is aware of a number of unpublished versions. Most of them are American born, but they have also appeared in Canada, Great Britain, and Australia.

These modifications can be divided into three categories:

1. Attempts to synthesize the Reading Miscue Inventory and the informal reading inventory, by simplifying the first or elaborating the second.

2. Attempts to combine miscue analysis and cloze procedures, either by using a cloze exercise in place of the retelling and questioning or by carrying out a miscue analysis of the words children have used to replace those deleted from a cloze passage read aloud or silently.

3. Attempts to simplify the Reading Miscue Inventory by reducing the number of categories to be marked and coded and by streamlining the procedures.
Figure 1 contains a brief summary of these modified versions. They are described more fully in Appendix A. Each of the three categories is discussed in detail in order to provide background for the selection of the modification of the Reading Miscue Inventory used in the Graduate Reading Program.

Syntheses of the Reading Miscue Inventory and Informal Reading Inventory

Although standardized tests enjoy considerable popularity in the United States, particularly in the area of reading, they do not prevail entirely; one informal measure that has been widely used over the years is the informal reading inventory (IRI) developed by Betts (1946) as a "subjective reading inventory" in which a child's reading ability was assessed by his reading a passage aloud and his responses to questions about it.

Variations of Betts' inventory are still in use; there are a number of different versions, but basically they fall into two categories:

1. Series of short, graded paragraphs, often with an alternative form at each level, and a set of questions for each paragraph. There are a number of popular commercial forms such as the Silvaroli Classroom Reading Inventory (1976) and the Johns Basic Reading Inventory (1978).
Figure 1. Summary of Modifications of the Reading Miscue Inventory.—From Appendix A

<table>
<thead>
<tr>
<th>Author and Title</th>
<th>Rationale</th>
<th>Oral Reading</th>
<th>Comprehension</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bean (1979)</td>
<td>IRI/RMI synthesis; basis: Goodman RMI, Page (1975), F. Smith (1971)</td>
<td>Self-correction, preservation or disruption of meaning; record sheet</td>
<td>No instructions; examples of questions</td>
<td>Brief, unclear directions; examples provided; suggestions for instruction</td>
</tr>
<tr>
<td>Christie (1979)</td>
<td>IRI/RMI synthesis; basis: Goodman RMI, Pikulski (1974)</td>
<td>Graphic similarity, context acceptability and self-correction; record sheet</td>
<td>No instruction or examples;</td>
<td>Brief directions; uses term &quot;error&quot;; reading strategy lessons suggested</td>
</tr>
<tr>
<td>Siegal (1979)</td>
<td>IRI/RMI synthesis; basis: Goodman RMI; F. Smith (1971), author's experience</td>
<td>Miscues and misses, lettersound, grammar, meaning and dialect; record sheet</td>
<td>Retelling indicated but no instructions provided</td>
<td>Fair directions for oral reading; 100-200 word passage; retains IRI reading levels</td>
</tr>
<tr>
<td>Smith &amp; Weaver (1978) Easy Method</td>
<td>IRI/RMI synthesis; basis: Goodman RMI, Pikulski (1974)</td>
<td>Semantic/syntactic acceptability and self-correction; record sheet</td>
<td>Retelling directions given;</td>
<td>Detailed examples; complicated scoring procedures; suggestions for remediation</td>
</tr>
<tr>
<td>Tortelli (1976) Simplified Psycholinguistic Diagnosis</td>
<td>IRI/RMI synthesis; basis: Goodman RMI</td>
<td>Acceptable language (grammar) and meaning miscues totaled</td>
<td>No instructions or examples</td>
<td>Brief directions and examples given for oral reading only</td>
</tr>
<tr>
<td>Author and Title</td>
<td>Rationale</td>
<td>Oral Reading</td>
<td>Comprehension</td>
<td>Comments</td>
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</tr>
<tr>
<td><strong>2. Combined Reading Miscue Inventory and Cloze Procedure</strong></td>
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<td></td>
</tr>
<tr>
<td>Anderson (1980)</td>
<td>New Miscue Analysis</td>
<td>Oral cloze miscue analysis; basis: Goodman RMI, author's research</td>
<td>Comparison of oral and silent reading of a series of short (140-word) cloze passages</td>
<td>Pilot study only</td>
</tr>
<tr>
<td>Aulls (1979)</td>
<td>Qualitative Analysis of Silent and Oral Reading</td>
<td>Oral-silent reading measure; basis: Goodman RMI, Pikulski (1974)</td>
<td>Oral fluency (weighted scores) semantically acceptable miscues, self-correction</td>
<td>Silent reading cloze assessed for structure and content miscues, self-correction 1,000 word passages divided for oral reading-silent cloze; write to author for directions</td>
</tr>
<tr>
<td>Cambourne (1979)</td>
<td>Cambourne Reading Analysis Procedure</td>
<td>Miscue analysis in silent reading; basis: Goodman (1969b), author's research</td>
<td>none</td>
<td>silent cloze test for miscue analysis; grammatical, semantic, meaning approximation</td>
</tr>
<tr>
<td>McLean (1979)</td>
<td>Qualitative Analysis of Silent and Oral Reading</td>
<td>See Aulls</td>
<td>Oral fluency; semantically acceptable miscues and self-correction</td>
<td>See Aulls See Aulls</td>
</tr>
<tr>
<td>Page (1975)</td>
<td>Post Oral Reading Cloze</td>
<td>Miscues predict comprehension; basis: Goodman (1969b), author's research</td>
<td>Altercues, supercues, entropicues, pseudocues, as predictors of comprehension levels</td>
<td>Silent cloze exercise on passages previously read aloud Pilot study only; scores adjusted for more accurate comprehension</td>
</tr>
</tbody>
</table>
3. Simplified Forms of the Reading Miscue Inventory

<table>
<thead>
<tr>
<th>Title and Author</th>
<th>Rationale</th>
<th>Oral Reading</th>
<th>Comprehension</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brennan (1979)</td>
<td>Simplified miscue analysis; basis: Cambourne (1978), Brennan's field testing</td>
<td>Graded passages; semantic, grammatical acceptability, graphophonic proximity; record sheet</td>
<td>No instructions or examples; retelling indicated</td>
<td>Very thorough for oral reading and interpretation; good examples, instructional strategies</td>
</tr>
<tr>
<td>Brennan Record for the Interpretation of Miscues</td>
<td></td>
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<tr>
<td>Griffin &amp; Jongsma (1980) Adaptation of RMI</td>
<td>Alternative to RMI basis: Goodman RMI</td>
<td>Oral reading evaluated at word and sentence level; numerical score</td>
<td>Detailed instruction; five stages for administering and scoring</td>
<td>Concerned mainly with retelling</td>
</tr>
<tr>
<td>Hood (1975-76) Qualitative Analysis of Oral Reading Errors</td>
<td>Interrater reliability; basis: Goodman RMI, IRI</td>
<td>Categories: order, stem, affix, sub, nonsense, insert, omit, skip, punc.</td>
<td>Not included</td>
<td>Concerned with reliability rather than analysis; uses term &quot;error&quot;.</td>
</tr>
<tr>
<td>Johnson (1979) Reading Appraisal Guide</td>
<td>Simplified miscue analysis; basis: Goodman RMI, author's case studies</td>
<td>Language, meaning and correction as % of total miscues; record sheet</td>
<td>Retelling assessed from prepared outline; little detail given</td>
<td>Brief directions for assessment; initial discussion of reading theory; instructional strategies suggested</td>
</tr>
<tr>
<td>Potter (1980) A Modified Form of Miscue Analysis</td>
<td>Discrimination between graphic and context clues; basis: Goodman RMI</td>
<td>Coding as for RMI and random list of passage words read and coded</td>
<td>No instructions or examples</td>
<td>Alternative rather than a simplification of RMI</td>
</tr>
</tbody>
</table>
2. Single passages of greater length, selected by the teachers, who then write their own comprehension questions. Johnson and Kress (1965) give directions for the procedures. These are more flexible than the commercial inventories in that they enable teachers to choose passages that suit their pupils' needs, but they also mean more work.

The procedures for informal reading inventories (IRI) include the readers being instructed to read the passages aloud and told that they will be questioned about them. Sometimes they are allowed to read silently first. They may or may not be prompted during oral reading. The teacher notes oral reading errors on a copy of the text; categories usually include insertions, omissions, substitutions, and repetitions, although the latter are not always scored. Self-corrected miscues may be counted as errors.

After the reading, the readers are asked a series of questions about the content of the passages they have read and their responses are noted. Some prompting may be allowed in order to get fuller answers. Errors are totaled and subtracted from the total number of words read, and the score is given as a percentage of words read correctly. Comprehension scores are based on correct answers to questions, and the children's oral reading and comprehension are listed as being at Independent, Instructional, or Frustration level. Although oral reading errors are separately categorized, no difference is made when scoring them. They may be noted as a basis for phonics instruction or for vocabulary improvement and occasionally to see whether the readers are using context clues in their reading.
This method of examining reading performance is used mainly for two purposes:


2. Diagnosis: To diagnose children's reading problems with a view to developing a suitable remedial program (Page & Barr, 1975; Pikulski, 1974).

The informal reading inventory is mostly used for placement in the United States. In Victoria, Australia, where the Johnson and Kress (1965) version is popular, the investigator has found it commonly used for diagnostic purposes.

Pikulski (1974) has criticized IRIs on a number of grounds such as poor interrater reliability, although Hood (1975-76) found that this could be improved by training. A major problem is the credibility of the Independent, Instruction, and Frustration levels of reading ability. These are apparently based on Betts' (1946) criteria, and there appears to be no empirical evidence for them whatever (K. S. Goodman, 1982d; Pikulski, 1974; Pikulski & Shanahan, in preparation).

Informal reading inventories rely on questions, rather than retelling, to assess the children's comprehension of what they have read. Studies by Sadoski (1982) and Ryan (1979) found no significant differences in the level of responses for questioning or
retelling, although Ryan hypothesized that questioning may be inhibiting to some readers and mildly threatening to others. Much depends on the quality of the questions. There is evidence that many IRI questions can be answered without reading the passages at all (Allington et al., 1977) and different sets of questions for the same passages can alter children's alleged grade levels considerably (Schell & Hanna, 1981). The investigator has found that many teachers have problems setting questions that are clear, relevant, and passage dependent. For these reasons she believes that retelling, followed by probing questions, is a preferable strategy in assessing comprehension of a reading.

The informal reading inventory has also been criticized for the shortness of its passages (Williamson & Young, 1974). Y. Goodman and Burke (1972) argued that narrative or expository passages must be of sufficient length for readers to make use of redundancy clues and to have the coherence of complete texts. Becoming familiar with the content provides readers with clues to help them predict unknown structures as they occur. They have often found that readers will suddenly self-correct words they have stumbled over a number of times. A second problem with short passages is that they are less likely to generate sufficient miscues for a valid analysis. A minimum of 25 is considered reasonable (Y. Goodman & Burke, 1972). It is interesting to note that Menosky (1970), working with elementary school children, found that their miscue patterns varied with the length of the passages read. With longer selections, the quality of miscues improved.
The following syntheses of the Reading Miscue Inventory and informal reading inventory have been examined by the investigator T. W. Bean (1979), Miscue Mini-Form.

J. F. Christie (1979), Qualitative Analysis System.

F. Siegal (1979), Adapted Miscue Analysis.

L. Smith and C. Weaver (1978), A Psycholinguistic Look at the Informal Reading Inventory: An Easy Method.

J. Tortelli (1976), Simplified Psycholinguistic Diagnosis.

The investigator decided against using any of the modifications that combined the Reading Miscue Inventory with the informal reading inventory as the latter does not appear to have a sound theoretical basis. All modifications failed to meet her theoretical and practical criteria on at least two of the following grounds:

1. The passages used are too short.

2. The term "error" is used instead of "miscue".

3. The Independent, Instructional, and Frustration levels of reading are retained.

4. Instructions for procedures are insufficient or unclear, especially for the retelling/questioning.

5. No evidence of field testing is provided.

Combined Reading Miscue Inventory and Cloze Procedure

The cloze procedure, a method of assessing how well children understand what they read, was developed by Taylor (1957). It is a
technique that has gained considerable popularity as a means of measuring readability, a teaching strategy and an assessment measure.

The cloze procedure consists of selecting a passage of narrative or expository material, leaving the first and last sentences intact, and deleting every fifth, sixth, or seventh word from the rest of the passage. The first word in a sentence is not usually deleted, nor are proper nouns, if that can be avoided. The reader then reads the passage aloud or silently, supplying the missing words. The scoring consists of calculating percentages of replacements that are exactly the same as the original words, or, if they differ, they can be treated as miscues and analyzed according to their degree of syntactic and semantic acceptability (Page, 1975; Cambourne, 1979; Anderson, 1980; Carey, 1979).

A number of investigators have compared cloze tests with retelling and questions as measures of reading comprehension. Bormuth's (1969, 1975) studies have shown that cloze tests correlate highly with conventional tests of comprehension by questioning. He pointed out that they are easier to construct than question tests and probably more reliable. Bormuth's (1975) research also indicated that fairly long passages, i.e., at least 250 words, covering a whole story or a set of information, are best for comprehension testing. He has constructed tables of appropriate scores for different purposes over a series of grade levels. Hutson and Niles (1981) quoted Gilmore's (1951) and Spache's (1963) studies in which they found that matched oral cloze and oral reading scores correlated well,
although they showed somewhat different error patterns. The cloze passages were read twice, which probably accounted for the superior semantic miscues. In both studies the grammatical miscues remained constant, but the semantic miscues increased as the passages became more difficult.

Carey's (1979) study suggested that reading comprehension and cloze tests correlated highly. McLeod (1965) found that cloze and multiple choice questions based on the same passages yielded similar scores in silent reading comprehension tests.

Sadoski (1982) found that there was little difference in the levels of response using retelling, questioning, and cloze exercises as measures of children's comprehension of a story, although the information elicited by the different means varied somewhat. As Cambourne (1977) and Sadoski (1982) have pointed out, the cloze procedure produces comprehending scores, i.e., indications of what readers understand about the text while they are actually reading, whereas questioning and retelling measure comprehension, or the readers' understanding of the texts after they have finished reading. This may explain why Sadoski found differences in the information elicited by questioning and cloze procedures, although not in the scoring levels of the two measures.

The following combined miscue analysis and cloze procedures have been examined by the investigator:

J. Anderson (1980), New Miscue Analysis.

M. Aulls (1979), Qualitative Analysis of Silent and Oral Reading.
B. Cambourne (1979), Cambourne Reading Analysis Procedure.
M. McLean (1979), Qualitative Analysis of Silent and Oral Reading.
W. Page (1975), the Post Oral Reading Cloze test.

The investigator decided not to use any of the above procedures. Although they appear to be valid assessment instruments and three are based on research conducted by the authors, they are considered to be alternative rather than simplified forms of the Reading Miscue Inventory for the following reasons:

1. All of these instruments produce comprehending scores but not comprehension scores.
2. One (Cambourne, 1979) is a silent reading test.

Simplified Forms of the Reading Miscue Inventory

Several attempts have been made to simplify the Reading Miscue Inventory by reducing the number of taxonomy questions and eliminating some of the analytic procedures such as the determination of question interrelationship and the preparation of a reader profile. The following simplified Reading Miscue Inventories have been examined by the investigator:

M. Brennan (1979), Brennan Record for the Interpretation of Miscues.
M. Griffin and K. Jongsma (1980), Adaptation of the Reading Miscue Inventory.

J. Hood (1975-76), Qualitative Analysis of Oral Reading Errors.

B. Johnson (1979), Reading Appraisal Guide.

F. Potter (1980), A Modified Form of Miscue Analysis.

Criteria for and Selection of a Simplified Form of the Reading Miscue Inventory

Because the main purpose of this study is to compare the Reading Miscue Inventory with a modified version, the investigator developed a set of criteria for selecting the latter, to ensure that it was compatible with the Goodman model of reading and reflected the rationale of miscue analysis. In addition, the constraints of time and complexity had to be considered in choosing an instrument suitable for a graduate reading program.

The criteria are:

1. The inventory should be a simplified rather than an alternative form of the Reading Miscue Inventory (RMI).

2. The instructions should be sufficiently clear and detailed for a teacher to follow without recourse to the RMI itself.

3. There should be provisions for both process (comprehending) and product (comprehension) scores, as there are in the RMI.

4. Comprehension assessment should be based on retelling and subsequent questioning, not on questions alone.

5. The miscue analysis and retelling should be based on the reading of a single, complete passage rather than on a series of graded paragraphs or a passage taken out of context.
6. The passage should be long enough to generate at least 25 different, non-dialect miscues on which to base a miscue analysis.

7. The author should provide a rationale for the use of the instrument, and the instrument should be validated by means of field testing or research.

The Reading Appraisal Guide best satisfied the investigator's theoretical and practical criteria in the following respects:

1. It is a simplified form of the Reading Miscue Inventory in that it includes three of the nine RMI questions in modified form, and the retelling.

2. It includes both comprehending and comprehension scores.

3. Comprehension assessment is based on retelling and subsequent questioning.

4. It is suggested that assessment be based on the reading and retelling of a complete story that takes 15-20 minutes to read. Suggestions for selection are given.

5. It is stipulated that the reading should generate at least 25 different miscues.

6. The author (Johnson, 1979) has provided a rationale for the use of the instrument, an exploration of the reading process based on the Goodman model, and evidence of field testing. The instrument has the additional advantage of being available in Melbourne, where the study was conducted.
Its main weakness appeared to be in the brevity of the instructions given for marking and coding the miscues. Johnson relies heavily on examples, but they may not always provide sufficient information for teachers inexperienced in miscue analysis. Instructions for the retelling and questioning are also very brief.

The Reading Appraisal Guide is the simplified form of the Reading Miscue Inventory chosen for the Graduate Reading Program, which is described in Chapter 3. A comparison of the contents of the two instruments is provided in Appendix B.
CHAPTER 3

RESEARCH DESIGN

The main question that is answered in this study is whether it is more effective for teachers to be given training in the Reading Miscue Inventory, or is training in the Reading Appraisal Guide, which is a modified form of the Reading Miscue Inventory, sufficient to enable teachers to carry out competent assessment of children's reading ability?

The purpose of the study is to examine the differences in the effectiveness of two graduate reading programs:

1. Training in the assessment of reading problems with practice in the Reading Appraisal Guide, a modified form of the Reading Miscue Inventory, such as might reasonably be provided in a standard graduate college course.

2. Training over the same period of time in the use of the Reading Miscue Inventory.

Timetable

The study was carried out at Melbourne College of Advanced Education during the 1983 academic year, which continues through three terms from March to November. Procedures followed the schedule set out below.
1. **Initial meeting:** The investigator met with the subjects to explain the program and related research (March).

2. **Selection and taping of readings:** The investigator chose two children and taped their readings of a story for miscue analysis (March-April).

3. **Pretest:** The pretest then took place in the College, and the subjects were assigned to groups based on their scores (April-May).

4. **Graduate Reading programs:** The courses of study continued at the College throughout the winter term (June-August).

5. **Posttest:** The posttest took place in the College (August).

**Subjects**

The subjects were 20 experienced preschool, primary (elementary) and secondary (high school) teachers undertaking the Graduate Diploma in Special Education program to qualify for registration as Special Teachers in the State of Victoria, Australia. The course of study is a 1-year, full-time, postgraduate diploma course. Enrollees must have completed three full years' teacher training and must produce evidence of appropriate teaching experience. In addition they must satisfy the selection committee as to their current or potential suitability for work with handicapped or learning-disabled persons.

Eight of the subjects were enrolled in Research Studies, a two-point, two-term subject, and 12 in Extended Research Studies, a four-point subject extended over three terms. All had completed at least the first term of the course; their academic standing was
rated from "high" to "at risk" by staff in the Special Education Department of the College. All had been given a choice of group or individual research projects in their advanced course work and had elected to take part in the investigator's project, in which this study was carried out.

Three subjects were secondary trained, 13 were primary trained and 4 had preschool training. The preschool and primary teachers had all received some instruction in teaching reading, while the secondary teachers had not. All had taught reading at some stage, but two of the preschool teachers said that their experience was very limited.

All subjects knew of the Goodmans' work, and associated it variously with whole language, language experience, reading for meaning or the psycholinguistic approach to teaching reading. Only one admitted to a knowledge of the Goodman model of reading. Eleven were aware of the purpose and methodology of miscue analysis in a general way, but 9 said they knew "hardly anything", "very little" or "not how to do it". Two had used the Brennan Record for Interpretation of Miscues (See Appendix A), but not regularly, and one had seen the Reading Appraisal Guide demonstrated. None had used the Reading Miscue Inventory.

Subjects' ages ranged from 25 to 46. Their average length of teaching service was 6 years, with a range of 2-20 years. Many had worked in several different settings. Their current placements indicate the range of experience within the group:
Setting | No. of Subjects
---|---
Kindergarten | 1
Primary School | 3
Secondary School | 2
Special Developmental School (moderate handicap) | 2
Special School (mild handicap) | 2
Autistic Center | 2
Youth Training Center (adolescent offenders) | 1
Emergency Education Unit (consultants to schools) | 2
Emergency Teaching | 2
Full-time Study | 3

**Pupils Selected for Miscue Analysis**

Two third grade pupils, a boy (Justin) and a girl (Tanya), were chosen from among third and fourth grade pupils in a suburban elementary school by their teachers and the investigator to read the story selected for miscue analysis. They were average readers, free from speech impediments, and spoke the dialect that generally prevails in lower middle class schools in the metropolitan area of Melbourne.

**Procedures for Selecting and Taping Readings**

Readings were selected from stories that had already been tried out for miscue analysis with third grade readers in Victorian elementary schools and had been found to be satisfactory for the following reasons:
1. They are complete stories.

2. They are of sufficient length and difficulty level to generate at least 25 miscues with third grade readers.

3. They have a high interest level, as judged by the reactions of those who read them.

The stories included "John, the Mouse Who Learned to Read" (Randell, 1974) and "Zoo Doctor" (Y. Goodman & Burke, 1972), which were used by Weatherill (1983) with third and fourth grade readers in a school-based evaluation programme in Melbourne, and "Henry with the Hair" (Cowan, 1969), used by Ryan (1979) in a Melbourne study of 100 third grade children with a wide range of reading ability. He found that "Henry with the Hair" generated an average of 5 miscues per 100 words with these readers.

The investigator asked interested teachers for a list of their "about average" readers who were free of speech impediments and did not have foreign accents. She taped approximately 30 children's readings from their class story books, using a professional recorder. Twelve of these children were "short listed" because they had read audibly and intelligibly at a reasonable speed, and generated at least 30 miscues in a story of several pages. These children then read and retold "John, the Mouse Who Learned to Read" or "Henry With the Hair", or both stories (these are described in Chapter 3). Two third graders' readings of "John, the Mouse who Learned to Read" were finally selected because they fulfilled the following criteria:
1. Their reading was audible and intelligible and their reading speed within the average range.

2. They produced more than 25 miscues in their reading of the story.

3. They produced enough material in the retelling and questioning for the subjects to analyze.

4. Their respective miscues and interpretations of the story provided interesting contrasts.

To ensure high-quality reproduction, tapes of the readings were edited and copied by the Media Department of the College.

The investigator assessed the two readings, using the Reading Miscue Inventory. The results of both miscue analyses were used to specify the scoring system used to evaluate the subjects' descriptive assessments of the children's reading. The investigator's miscue analysis of each child's reading was verified by a researcher expert in the use of the Reading Miscue Inventory.

**Analyses of Selected Readings**

The full analyses of the two children's readings are given in Appendix D. What follows is a summary:

Tanya generated some 8 miscues per hundred words. She was an effective reader who made very good use of all cuing systems and strategies. Though hesitant at times, her retelling showed a good understanding of the characters and events of the story. Her response to questioning clarified some details and elicited inferential information.
Justin's reading was more difficult to analyse than Tanya's. He made almost twice as many miscues as she did and appeared at first glance to be a much less efficient reader. However, despite a tendency to overuse graphophonic cues, he was able to make good use of the syntactic systems and fair use of the semantic systems of language. The success of his predicting strategies was variable. He attempted to correct many miscues and was overtly successful with about half of them; his retelling indicated that others were corrected sub-vocally. The retelling was hard to follow initially, but responses to questioning indicated that he knew the characters, had a general idea of the story and could make valid inferences. He was reading for meaning.

Pretest

There were two pretest sessions, one for each child's reading and retelling. In each session the 20 subjects were given a script of the story, a transcript of the retelling and a set of guidelines for the assessment. They listened to the tape of the reading and retelling of the story, and were then given 10 minutes to consider the performance. After a short break, the tape was replayed. The subjects then had a maximum of two hours to write a descriptive assessment of the child's reading. All assessments were timed. Additional tapes were available on small cassette recorders so that any subjects could replay sections of the reading or retelling. More than half of them did so. The subjects were furnished with the following guidelines for assessment:
Summarize what you know about this child as a reader. You should take the following points into consideration but do not necessarily use them as headings:

1. Evidence of the child's overall strengths and weaknesses.
2. The child's comprehension of the story just read.
3. Concern the child shows for meaning while reading.
4. The child's use of the grammatical system of the language.
5. The child's knowledge of letter-sound relationships.

Refer to specific examples of the child's performance to support your evaluation.

Guidelines for scoring each subject's descriptive assessment are presented later in this chapter under Analysis of Data. To ensure a measure of scoring reliability for the pretest and posttest a random sample of one assessment of each child from both groups of subjects was drawn. These four assessments were scored by two researchers experienced in miscue analysis. The results were compared with the investigator's ratings, using the Direct Difference Method, a two-tailed t-test of repeated measures, to discover any significant differences among the ratings. The formulas are given in Appendix E.

Graduate Reading Programs

Grouping of Subjects

After the pretest had been scored subjects were divided into two groups of 10, on the basis of their pretest scores. Their average scores were ranked in pairs from the highest to the lowest,
and the toss of a coin decided whether the highest score of each pair should be allocated to the Reading Miscue Inventory (RMI) Group or the Reading Appraisal Guide (RAG) Group. However, this method resulted in 7 of the 8 subjects enrolled in the two-term Research Studies course being allocated to one group. The two-term Research Studies and the three-term Extended Research Studies courses differ in the length of time taken to complete them and the number of points gained. Furthermore, the subjects enrolled in the latter were all majoring in Learning Difficulties, while those in the former were doing the general course. The investigator considered that it would be preferable to have an equal portion of two and three-term students in each group, so three inter-group exchanges were made to achieve this distribution. The first group, the RMI Group, was to be trained in the use of the Reading Miscue Inventory, and the second, the RAG Group, in the use of the Reading Appraisal Guide.

Assessment Instruments

One group of subjects (hereafter referred to as the RMI Group) used the Reading Miscue Inventory (Y. Goodman & Burke, 1972). The other group (hereafter referred to as the RAG Group) used a simplified assessment procedure, the Reading Appraisal Guide, selected from 15 modifications of the Reading Miscue Inventory examined by the investigator.

Timing of Programs

Both groups received 16 hours' training. Classes were held on Saturdays in Term 2, each group meeting for a total of three 4-hour sessions. Each subject also had 4 hours of individual conferences. For further details, see Program Timetable, Figure 2, and Appendix C.
<table>
<thead>
<tr>
<th>Dates</th>
<th>RMI Group</th>
<th>RAG Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 30</td>
<td>Pretest</td>
<td></td>
</tr>
<tr>
<td>June 18</td>
<td>Session 1: The Goodman model; RMI procedures</td>
<td></td>
</tr>
<tr>
<td>June 25</td>
<td>Session 1: Reading assessment: Overview of instruments</td>
<td></td>
</tr>
<tr>
<td>July 2</td>
<td>Session 2: Group assessment of tape</td>
<td></td>
</tr>
<tr>
<td>July 9</td>
<td></td>
<td>Session 2: The Goodman model; RAG procedures</td>
</tr>
<tr>
<td>July 16</td>
<td>Session 3: Assessment of tape; review</td>
<td></td>
</tr>
<tr>
<td>July 23</td>
<td></td>
<td>Session 3: Group assessment of tape; case study</td>
</tr>
<tr>
<td>July 23 to Aug. 13</td>
<td>Practicum assessments</td>
<td>Practicum assessments</td>
</tr>
<tr>
<td></td>
<td>Individual conferences</td>
<td>Individual conferences</td>
</tr>
<tr>
<td>Aug. 13</td>
<td></td>
<td>Posttest</td>
</tr>
<tr>
<td>Sept. 10</td>
<td></td>
<td>Post-program discussion</td>
</tr>
<tr>
<td>Sept. 17</td>
<td></td>
<td>Post-program discussion</td>
</tr>
</tbody>
</table>
Content of Program for Each Group

**RMI Group**

The RMI Group were given training in the use of the Reading Miscue Inventory, using the procedures followed by Y. Goodman (1979) and Watson (1979, 1982) in their in-service training courses for teachers of reading, and considered appropriate for graduate teacher education courses. These procedures were:

1. **Group sessions:**
   a. Introduction: The Goodman model of reading was outlined and related to the assessment of reading.
   b. A taped oral reading and retelling of a story selected from the Reading Miscue Inventory kit (1972) was presented.
   c. The reader's miscues were marked and coded.
   d. The retelling was assessed.
   e. A reading profile of the reader was developed.
   f. The group made an overall evaluation of the reader's performance and recommendations for building reading strengths.

2. **Assessment practicum:**
   a. Each subject selected a child, preferably from among the pupils with whom the subject normally works. Some subjects, whose pupils apparently have little or no reading ability, chose pupils from neighborhood primary or elementary schools.
b. Each subject completed an independent assessment of the child's reading and retelling of a story, based on procedures used in the group evaluation of the taped reading.

c. The investigator met with each subject at regular intervals to assist with the assessment and evaluate its progress.

**RAG Group**

The RAG Group was given training in the use of the Reading Appraisal Guide. This consisted of the following procedures:

1. **Group Sessions:**
   a. A brief overview of reading assessment was given, and a number of reading assessment procedures were discussed and examined.
   b. Training in the use of the Reading Appraisal Guide was provided. This was similar to the procedures indicated for the RMI Group, items a-f.

2. **Assessment practicum:**
   This was similar to the procedures indicated for the RMI Group, items a-c.

A complete outline of both programs appears in Appendix C.

**Posttest**

The posttest was conducted under the same conditions as the pretest, using the same tapes. All subjects listened to the tapes and again wrote descriptive assessments of each child's reading.
Both groups were allowed to use any material related to their training and practicum. The investigator noted the time taken to finish each assessment; maximum time allowed was two hours.

To ensure a measure of scoring reliability the interraters again followed the procedures used for the pretest.

**Analysis of Data**

**Evaluation Criteria**

Criteria for the investigator's analyses of the two children's readings were drawn from the manual of the Reading Miscue Inventory. These criteria, together with her analyses of the two readings, formed the bases of the investigator's qualitative evaluations of the subjects' descriptive assessments. A score was developed for each area of assessment to provide for the quantitative analysis. A summary of scores is given later in the chapter, and a sample of the scoring sheet is shown in Appendix F. The criteria are as follows:

**Graphophonic System**

Research (K.S. Goodman & Burke, 1973) has demonstrated that the graphophonic cuing system is essential for predicting meaning but it must be used selectively. Because high graphophonic approximations by themselves are not considered sufficient for reading to occur, the score developed to show a subject's understanding of this category is lower than for the other systems. The score received reflects a subject's awareness that:
1. The percentage of miscues with high graphophonic similarity indicates the level of dependence on graphophonic cues.

2. The closest graphophonic approximation of a word is not always the best one.

3. Use of phonic strategies does not in itself lead to meaning gain.

4. Phonic strategies are word oriented. Overuse focuses attention on detail and may impede meaning gain.

**Syntactic (Grammatical) System**

Use of the syntactic system is necessary for organizing language as the reader seeks to predict and construct meaning (Clay, 1968). Because syntactic acceptability by itself is not considered sufficient for reading to occur, the score developed to show a subject's understanding of a reader's use of the syntactic system is lower than that for meaning systems.

The score received reflects a subject's awareness of a reader's syntactic ability in the following areas:

1. The production of sentences that are syntactically acceptable, even with miscues, rather than sentences acceptable only up to and including, or including and beyond the miscue.

2. The use of acceptable syntactic inflections in miscues, including nonsense words.
3. Placement of rearranged words, omissions and insertions in appropriate syntactical context.

4. Self-correction only when miscues are syntactically unacceptable.

**Semantic (Meaning) System**

Reading results from the integration of graphophonic, syntactic and semantic cues in the successful prediction and confirmation of meaning. Research (Beebe, 1980) indicated that the semantic system is considered the major cuing system in reading, and this is reflected in an overall score for a subject's analysis of a reader's use of the semantic system that is higher than that for the syntactic or graphophonnic systems.

The score reflects a subject's assessment of a reader's strengths and weaknesses in the following areas:

1. The production of sentences that make sense within the whole passage and do not alter or distort the meaning of the text.

2. Ability to make intonational miscues that do not alter the meaning of the text.

3. Correction of miscues only when they distort the meaning of the text.

**Comprehension**

Effective comprehension results from successful interaction between the reader and the text and is considered equal to the building of meaning during the reading process. Therefore the comprehension score was made equal to the score for meaning.
A subject's score reflects his or her evaluation of a reader's strengths and weaknesses in the following areas:

1. Recall and understanding of major and minor characters.

2. Recall and understanding of events, plot and theme of the story.

3. Ability to retell the story as an integrated, well-sequenced whole, without probing from the tester.

4. Ability to respond appropriately to questioning concerning the story.

Summary

Basic to the Goodman model is the need for teachers to understand how all the cuing systems and strategies and the retelling are integrated in the construction of meaning (Goodman & Goodman, 1978). The scoring system reflects this by awarding the highest overall score for the summary.

The subject's score shows how far he or she is able to demonstrate:

1. Awareness of the total pattern of miscues rather than isolated examples.

2. Understanding of reading as an integrated process in which comprehending and comprehension strategies are appropriately used.

3. Understanding of a reader's particular strengths and weaknesses.

4. Awareness of appropriate strategies for building a reader's strengths.
5. Ability to write a well-organized and integrated assessment.

Research Questions

The analysis of data was used to answer both qualitative and quantitative research questions. The questions specifically addressed in the quantitative analysis were:

1. Do the members of the group using the Reading Miscue Inventory significantly improve their scores on an evaluation of their assessments of two readers between the pretest and posttest?

2. Do the members of the group using the Reading Appraisal Guide, a simplified form of the Reading Miscue Inventory, significantly improve their scores on an evaluation of their assessments of two readers between the pretest and the posttest?

3. Do the scores of one group improve significantly more than the scores of the other group between the pretest and the posttest?

The qualitative questions addressed were:

1. What indications are there during the program of changes in the subjects' knowledge and application of miscue analysis techniques?

2. What presuppositions and values concerning reading do the subjects bring to the program and how do these change during the program?
Quantitative Analysis

Each subject's pretest and posttest was awarded a numerical score. These formed the bases for the quantitative analysis.

Summary of Scores

The following system was used for both pretest and posttest scoring:

<table>
<thead>
<tr>
<th>Category</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphophonic System</td>
<td>20</td>
</tr>
<tr>
<td>Syntactic System</td>
<td>20</td>
</tr>
<tr>
<td>Semantic System</td>
<td>30</td>
</tr>
<tr>
<td>Comprehension</td>
<td>30</td>
</tr>
<tr>
<td>Summary (conclusions and recommendations)</td>
<td>50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>150</strong></td>
</tr>
</tbody>
</table>

These scores are based on the rationale given under Evaluation Criteria earlier in the chapter. A sample score sheet is provided in Appendix F.

Group Comparisons

The scores were used in group comparisons to discover whether the posttest scores of each group showed significant gains over the pretest scores and, if so, whether one group had made significant gains over the other group. Analyses of differences between the following scores were made:

1. RMI Group pretest and RMI Group posttest mean scores.
2. RAG Group pretest and RAG Group posttest mean scores.
3. RMI Group and RAG Group pretest-posttest gains.
Statistical Measures

The t-test was used for all analyses of differences. For analyses (1) and (2) a two-tailed t-test for repeated measures was used, and for analysis (3) a two-tailed t-test for independent samples was used. Formuli are given in Appendix E.

Qualitative Analysis

Qualitative analysis by the investigator included an assessment of the subjects' expertise in the techniques used in either the Reading Miscue Inventory or the Reading Appraisal Guide, depending on which program they were in, and of their ability to interpret children's reading. She also sought to gain insights into the subjects' theoretical concepts of reading and perceptions of the reading process, any misunderstandings or misconceptions they had concerning reading, and the emphasis they placed on different aspects of reading behavior. She attempted to assess the influence of preconceptions held by the subjects concerning reading and whether any changes occurred in these during the programs.

The qualitative analysis was carried out by examining the subjects' miscue analyses and descriptive assessments. The investigator also kept a regular diary in order to gather anecdotal data from group sessions and individual conferences. In addition she conducted discussions with both groups after the posttest and recorded their comments. Guba (1978) has shown that one of the advantages of ethnographic research is that the researcher may obtain valuable and often unanticipated insights by selecting relevant data from broad observations.
Summary of Quantitative and Qualitative Analyses

The investigator has used both quantitative and qualitative data to determine whether in-depth training in the use of the Reading Miscue Inventory enabled the RMI Group to carry out more effective evaluations of a child's reading and retelling of a story than training in the Reading Appraisal Guide enabled the RAG Group to do.
CHAPTER 4

RESULTS

The main question that is answered in this study is whether it is more effective for teachers to be given training in the Reading Miscue Inventory, or is training in the Reading Appraisal Guide, which is a modified form of the Reading Miscue Inventory, sufficient to enable teachers to carry out competent assessments of children's reading ability?

The purpose of the study is to examine the differences in the effectiveness of two graduate reading programs:

1. Training in the assessment of reading problems with practice in the Reading Appraisal Guide, a modified form of the Reading Miscue Inventory, such as might reasonably be provided in a standard graduate college course.

2. Training over the same period of time in the use of the Reading Miscue Inventory.

Overview of Procedures

Procedures followed the schedule set out below:

1. Initial selection of subjects: 20 subjects volunteered to join the project. The investigator met with them and explained the program and related research (March).
2. Selection and analysis of readings: The investigator selected two third grade children from a suburban elementary school, and taped their reading of a story. She then analyzed their readings, using the Reading Miscue Inventory (March-April).

3. Pretest: This took place in the College. Assessments were analyzed and subjects assigned to the RMI Group or RAG Group on the basis of their scores (April-May).

4. Graduate Reading Program: The course of study continued in the College throughout the winter term (June-August).

5. Posttest: This took place in the College (August).

The subjects, selection procedures, analysis of the readings, pretest and posttest are discussed in detail in the previous chapter. The program is fully described in Appendix C and analyses of the children's readings are provided in Appendix D.

**Overview of Evaluation Criteria**

Criteria drawn from the manual of the Reading Miscue Inventory and her analyses of the two children's readings together formed the basis for the investigator's qualitative and quantitative evaluations of the subjects' pretest and posttest assessments of the same children's readings. The criteria, summarized below, are described more fully in Chapter 3.

In their assessments the subjects were expected to show awareness of the relative importance of the following:
Graphophonic System (20 points)

The graphophonic system is essential for getting meaning from print, but it must be used selectively. Overreliance on phonic strategies and close graphophonic approximation of miscues indicate that readers are focussing on words rather than larger meaning units.

Syntactic System (20 points)

Use of the syntactic system is not sufficient in itself for the prediction of meaning. Readers will indicate by the use of inflections and ability to produce syntactically acceptable sentences, even when miscuing, whether they are using this system effectively.

Semantic System (30 points)

The integration of graphophonic, syntactic and semantic cues allows readers to predict and confirm meaning. Readers' success in doing so is indicated by the ability to produce sentences which make sense in the context of the passage.

Comprehension (30 points)

Effective comprehension results from successful interaction between readers and text. Readers' success is indicated by the ability to recall and explain the characters, events, plots and themes in stories, both in unaided and aided retelling.

Summary (50 points)

Evaluators should be able to assess readers' strengths and weaknesses with reference to both the pattern of miscues and the retelling. It is also important to suggest instructional strategies for building readers' strengths.
Pretest Procedures

The pretest was conducted in the College in two sessions, one in the morning and one in the afternoon. Each subject was given a script of the story, a transcript of the reader's retelling, and guidelines for the descriptive assessment. After the playing of the taped reading the subjects were given two hours in which to write a descriptive assessment, using the guidelines provided. These directed them to summarize what they knew about the child as a reader, taking into account such factors as overall strengths and weaknesses, comprehension of the story, concern for meaning while reading, use of the syntactical structures of language and understanding of letter-sound relationships. The guidelines are given in full in Chapter 3.

Quantitative Analysis of Pretest

Both quantitative and qualitative evaluations of the subjects' descriptive assessments were made, based on the evaluation criteria and the investigator's analyses of the children's readings, which are summarized earlier in the chapter. The quantitative scoring system is described in Chapter 3.

Measures to ensure scoring reliability will be discussed later in this chapter, under Interrating Procedures.
The Pretest scores are shown in Table 1. Columns (1) and (2) give each subject's scores out of a possible 150 for the assessments of Justin and Tanya. Column (3) shows each subject's mean score for the pretest. In Column (4) these have been converted to percentage scores because the investigator feels it is easier for the reader to evaluate scores in that form. The percentage scores were used in all statistical calculations. In Column (5) each subject's ranking in the group is given.

It can be seen that the average score for the Pretest is low (28.5%). While no subject had a high mean score, Subjects No. 15 and 16 scored well in their assessments of Tanya. All but 4 of the subjects gained higher scores in their assessments of Tanya (Mean score = 32%) than of Justin (Mean score = 24.9%).

Qualitative Analysis of Pretest

The qualitative analysis supports the findings of the quantitative analysis. The questions specifically addressed in the qualitative analysis are:

1. What indications are there during the program of changes in the subjects' knowledge and application of miscue analysis techniques?

2. What presuppositions and values concerning reading do the subjects bring to the program and how do these change during the program?
Table 1: Pretest Scores

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Scores</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td></td>
<td>Justin</td>
<td>Tanya</td>
</tr>
<tr>
<td>1. RA</td>
<td>13</td>
<td>23</td>
</tr>
<tr>
<td>2. IB</td>
<td>21</td>
<td>34</td>
</tr>
<tr>
<td>3. JB</td>
<td>54</td>
<td>87</td>
</tr>
<tr>
<td>4. JC</td>
<td>61</td>
<td>69</td>
</tr>
<tr>
<td>5. SC</td>
<td>41</td>
<td>49</td>
</tr>
<tr>
<td>6. WE</td>
<td>32</td>
<td>42</td>
</tr>
<tr>
<td>7. KG</td>
<td>55</td>
<td>30</td>
</tr>
<tr>
<td>8. JG</td>
<td>42</td>
<td>32</td>
</tr>
<tr>
<td>9. RJ</td>
<td>33</td>
<td>36</td>
</tr>
<tr>
<td>10. EL</td>
<td>19</td>
<td>28</td>
</tr>
<tr>
<td>11. CMcC</td>
<td>26</td>
<td>33</td>
</tr>
<tr>
<td>12. HMcG</td>
<td>54</td>
<td>60</td>
</tr>
<tr>
<td>13. RMcK</td>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td>14. LM</td>
<td>20</td>
<td>16</td>
</tr>
<tr>
<td>15. JN</td>
<td>74</td>
<td>108</td>
</tr>
<tr>
<td>16. JR</td>
<td>50</td>
<td>106</td>
</tr>
<tr>
<td>17. VR</td>
<td>26</td>
<td>50</td>
</tr>
<tr>
<td>18. LS</td>
<td>27</td>
<td>51</td>
</tr>
<tr>
<td>19. MW</td>
<td>48</td>
<td>42</td>
</tr>
<tr>
<td>20. IW</td>
<td>27</td>
<td>33</td>
</tr>
<tr>
<td>Mean Scores</td>
<td>37.4</td>
<td>47.95</td>
</tr>
<tr>
<td>(SD)</td>
<td>16.62</td>
<td>26.06</td>
</tr>
<tr>
<td>Mean % Scores</td>
<td>(24.9%)</td>
<td>(32%)</td>
</tr>
</tbody>
</table>
The assessment techniques and values concerning reading which the subjects brought to the programs are assessed in the following pages.

Subjects' Knowledge of the Techniques of Miscue Analysis

The assessments indicated that all subjects had attempted some form of miscue analysis. However, few were familiar with the techniques and terminology.

Marking the Miscues

All subjects attempted to mark miscues, mostly in ways which appeared to derive from informal reading inventories or the Neale Analysis of Reading Ability. None referred to miscues as errors.

Coding the Miscues

Five subjects attempted to code all miscues in various categories, and all attempted some form of categorization of a varying number of examples. Sixteen used some or all of the usual IRI categories: substitutions, additions, omissions, repetitions, reversals, hesitations and self-corrections. Three used their own terminology, for example, "wrong words", "changed words" for substitutions; "leaving out words" for omissions; "adding words" for insertions. One used "meaning gained", "meaning lost" and "corrections", terms from the Brennan Record for Interpretation of Miscues, a simplified
form of the RMI. Having identified categories to the best of their ability, most subjects found it difficult to interpret them. Some simply totaled all substitutions, omissions, insertions and reversals; some provided examples from each category. A few attempted to assess the effects of the different types of miscues on meaning.

The Cuing Systems

Use of the three cuing systems varied considerably, and each will be discussed separately.

1. Graphophonic System: All subjects discussed the children's use of graphophonics, word attack, letter-sound correspondences or sounding out skills at some length. Opinion was divided over the value of Justin's laborious and generally unsuccessful sounding out of words and Tanya's periodic repetition of the first letter before saying a word correctly. Most agreed that Tanya "appeared to have a good command of letter-sound relationships" or "looks at words as a whole rather than single letters". Rather surprisingly, one felt she "needs to concentrate on... sound-symbol relationships" and another thought she was having difficulties with word attack. "Justin's method of sounding out words was often unsuccessful owing to their unphonetic nature" was a typical comment. Yet, as one subject pointed out, "Some were not clarified, but in other examples he corrected the words he sounded out."

The value of graphophonic cues was overemphasized by most subjects and 4 overstressed the importance of the few reversals
made. Some even invented them, e.g. every as a reversal of never. Knowledge of sight words and key vocabulary was mentioned by 6 subjects as being important. Tanya was thought to have "good sight vocabulary" while Justin "missed most of the meaning because he was unable to read key words". It was not always clear whether subjects were referring to phonic recognition or understanding of words.

2. Syntactic System: Only 6 subjects specifically mentioned the readers' use of syntactic cues. Others referred to the effects of omissions and insertions and inappropriate tense, number and person of verbs, mostly in relation to meaning. As one subject stated, "Tanya's omissions and insertions made no difference to the meaning in most cases". That she "did change tense, but this fitted into the story" was a common view. Four referred to her unusual use of breng for bought as a dialect miscue. It appeared that most subjects considered the syntactic system less important than the grapho-phonic system in helping children gain meaning from the text.

Punctuation was discussed by 15 subjects; in many cases it was not clear whether they thought the children were ignoring or ignorant of punctuation marks, or whether their punctuation errors were the cause or result of misunderstanding the test. Typical comments were: "Tanya made little use of commas, full stops or exclamation points," and "She disregarded full stops (periods) which meant her expression was poor at times." Justin "paused inappropriately, not where indicated by a comma, full stop, etc."
However, some related poor punctuation to meaning loss: "Tanya ignored a lot of punctuation, making parts of what she read nonsensical", and "Her ignorance of punctuation meant loss of understanding."

Fifteen subjects commented on the children's habit of pausing during their reading. Some gave interpretations such as "Tanya seemed to stop and consider what she had read" and "Justin paused in order to gear himself up for word attack." Others simply stated that "Tanya did pause a number of times. I don't know the reason," or "She paused too long in a number of places."

3. Semantic System: The best parts of the descriptive assessments relate to the semantic system. All but one subject discussed the children's ability to read for meaning, and 13 stressed the primary importance of this. Only 4 used the term "semantic cuing". There was general agreement that Tanya used semantic cues more successfully than Justin. Some subjects were specific: "Tanya's overall strength is that she is reading for meaning. Her use of context and grammatical clues supports this." Others made general statements such as "Tanya shows a good understanding of what she is reading." Most downgraded Justin by making such statements as "Justin does not show concern for meaning," or "does not read for meaning." One at least gave him credit for trying: "He struggled to understand... but there is no meaning while he is reading." Only one realized that "Justin gained more meaning from the story than one would have imagined from listening to the tape."
The Strategies

Use of the strategies was not well understood, except for self-correction. This was discussed by all subjects, most of whom realized its importance in the search for meaning. However, few discriminated between correction for syntactic and semantic miscues or included attempted corrections, and none tried to estimate the proportion of miscues corrected. Opinions differed as to the children's strengths in self-correction. Tanya was seen as more aware of this strategy than Justin by most subjects: "Tanya self-corrected when it didn't sound right" or "corrected most of her miscues." Justin "didn't question any of his miscues" or "Often when the meaning was changed he did not self-correct." A few disagreed. One felt Tanya "doesn't question mistakes" and another made the cryptic statement that "Justin spent a lot of time self-correcting, which may mean he needs to be taught pre-reading skills!"

Six subjects commented on prediction, and some referred to "guessing" or "anticipating what is coming." Except for self-correction, confirmation was mentioned by only three subjects, but it was discussed in other terms by those who described Tanya as "being aware when the story didn't make sense" or stated "If reading doesn't make sense she reads back over the sentence." The importance of integrating all three strategies was apparently understood by only two subjects.
Seventeen subjects believed that expression, speed and fluency were good indications of whether the text had been understood or not. Opinions varied concerning speed: One subject thought that Tanya made mistakes because she read too quickly, and another that Justin "read so slowly that there was no continuity. He could not gather the main concept of the story."

**Comprehension**

Assessment varied greatly in quality. All subjects appeared to understand that gaining meaning from the story was of paramount importance, but most assessments were very general and some very brief. Fourteen discussed responses to questioning, and several distinguished between literal and inferential information. Only three discussed the children's understanding of characters. The rest concentrated on events, usually main idea, supporting detail, sequence, literal recall and inference. None mentioned plot or theme. Many referred to the fluency of the retelling but did not indicate clearly what that signified, e.g. "Tanya told the story with quite a deal of expression" or "Tanya's comprehension was quite good considering her lack of fluency." Justin was criticized for "frequent 'ums'" and being a poor conversationalist.
Summary

In general summaries were not well done, and three subjects did not attempt them at all. Seventeen referred to strengths and weaknesses with varying degrees of accuracy and relevance. Ten made some attempt to summarize the children's comprehending ability, but only three compared this with their comprehension. Five discussed building strengths; of these all were concerned with developing word attack skills and only two mentioned comprehension-related activities such as cloze or the use of context clues.

Subjects' Assumptions and Values Concerning Reading

Although the subjects showed during the pretest that they understood that meaning is the goal of reading, there were gaps and inconsistencies in their views of how children read and how reading could best be evaluated and taught. Four principles from the Goodman model were used to categorize their responses. These concerned reading purpose, reading cues, reading strategies and reading assessment.

Reading Purpose

"Reading is the process of getting meaning from print."
(K. S. Goodman, 1970b, p. 107)

In their analysis of the children's oral reading, 13 of the 20 subjects stressed the importance of reading for meaning and 6 others discussed it, but with less emphasis. In their assessments
of the retelling, all saw gaining meaning from the story as the main goal. This was demonstrated by statements such as "She (Tanya) showed understanding of the story, which is the most important thing" and "The most important concept that he (Justin) needs to be made aware of is to read for meaning". Yet most subjects spent as much time on discussion of skills such as punctuation and word attack, or on the expression and fluency of the children's reading, as they did on their understanding of the story.

Reading Cues

"Miscue analysis shows that readers use the interrelationship among the grammatical, graphophonetic, and semantic systems. All three systems are used in an integrated fashion in order for reading to take place." (Goodman & Goodman, 1977, p. 325). It appeared from the subjects' heavy emphasis on the children's use of the graphophonetic system and the stress placed on their knowledge of word attack skills and sight-vocabulary that they believed that teaching these subskills was the best way of encouraging reading. Syntax was apparently considered to be the least important of the three cuing systems. Few of the subjects discussed the children's grammatical strengths as evidenced in their oral reading, and only three did so effectively. Some referred to syntactic lapses, e.g., "Tanya has a tendency to leave off the ending of the word, such as belong for belonging, or "Justin leaves off or adds 's' to words without any pattern" but did not explain how these affected reading for meaning. The importance of semantic cuing was generally understood. It was
discussed by all subjects, although only 4 used that precise term. Others used phrases such as "reading for meaning", "trying to make sense out of the text" or "use of context clues" and gave examples of success or failure to do this.

**Reading Strategies**

"Prediction and confirmation (according to Goodman) are two basic processes involved in reading. A third is the process of correction." (Gollasch, 1982, Vol. I, p. 22) Few subjects were able to integrate all strategies. Prediction was mentioned by some, and others expressed the concept in different ways such as "using her (Tanya's) knowledge of the story to guess what was coming", "anticipating meaning" or "forecasting what came next." Two used the term prediction to mean scanning or reading ahead silently before doing so aloud, and one thought it meant knowing whether the story was fact or fiction.

Correction was better understood. All subjects realized its general significance as a strategy for gaining meaning, and most provided appropriate examples. One such example was: "Halfway through the sentence she (Tanya) went back and reread it correctly by changing the words." However, most subjects did not appear to realize that correction of miscues is not always necessary or even desirable. Tanya's strengths were appreciated. Comments such as "She self-corrected when she realized it didn't sound right" were typical. Opinion was divided over Justin. One felt that "His self-corrections
indicate a deep-seated search for meaning", but another stated "Often when the meaning changed he did not self-correct, e.g. he read wort for wrote," and a third insisted that "He didn't question any of his mistakes."

Few subjects discussed confirmation strategies specifically, but some indicated that they understood the concept by referring to the children's awareness of whether their reading made sense or not. For example, "Tanya expected what she read would make sense" but "Justin seems quite happy with his approximations even though they made the sentence confusing or meaningless.

Reading Assessment

"Miscue analysis is a technique for examining and evaluating the development of control of the reading process in learners." (K. S. Goodman, 1979b, p. 100) All subjects appeared to have some understanding of miscue analysis and of the procedures involved. They knew that different miscues had differing significance and could be coded in different ways, and that an assessment of a child's reading ability could be based on an interpretation of the miscues and the retelling. Their descriptive assessments showed that they had attempted to use some form of miscue analysis procedure with varying degrees of success.
Summary of Qualitative and Quantitative Analyses of Pretest

Only 4 of the 20 subjects produced competent assessments and a further 4 showed good insights. The main difficulties appeared to lie in the following areas:

1. There was a lack of in-depth understanding of the Goodman model of reading, which underlies miscue analysis. Although the importance of reading for meaning was generally accepted, subjects tended to think this could be achieved by teaching subskills in the traditional way. They put much stress on fluent reading and knowledge of word attack skills, sight words and punctuation marks. While the importance of semantic cuing and correction of miscues was emphasized, the use of syntactic cues and prediction and confirmation strategies was not.

2. There was a lack of precise knowledge of miscue analysis procedures, and marked inability to interpret the information gained from them. Many subjects tended to make statements about reading behaviors without explaining their significance.

3. There were problems of organization and emphasis, arising from the subjects' limited knowledge of the theory and practice of miscue analysis. They tended to pay more attention to coding than to interpretation and few made recommendations for teaching strategies. Unimportant factors such as reversals were heavily stressed while essential areas such as syntactic cuing were ignored.
4. There was a tendency to emphasize weaknesses rather than strengths, particularly in the case of Justin who was seen by most as a very poor reader. Twelve subjects markedly underrated his ability to use cues and strategies in order to gain meaning from the text. Even though most subjects realized that Tanya was a good reader, they were still inclined to overemphasize her faults.

Scoring Reliability

To ensure a measure of scoring reliability in the pretest, two random samples were drawn from the 20 assessments of Tanya's reading, one from the 10 subjects allotted to the RMI Group and one from those allotted to the RAG Group. The same procedure was followed for the assessments of Justin's reading. The 4 assessments were rescored by two researchers experienced in miscue analysis, and the results compared with the investigator's ratings.

The Direct Difference Method, a two-tailed t-test for repeated measures, was used to discover whether there were significant differences between the investigator's ratings and those of either researcher. Significance level was set at 0.05.

Critical t for this alpha level is 3.182.

Calculated t for the comparison of Rating 1 (the investigator's) and Rating 2 was -1.84.

Calculated t for the comparison of Rating 1 and Rating 3 was -1.5.

The differences between the investigator's ratings and those of Rater 2 and Rater 3 were therefore not considered to be significant.
Similar procedures were undertaken for the posttest. In this case one sample was drawn from each of 4 groups: The RMI Group assessments of Tanya; the RAG Group assessments of Tanya; the RMI Group assessments of Justin and the RAG Group assessments of Justin. The 4 assessments were rescored by the same interraters as for the pretest and the same method was used to compare their ratings. Significance level was again set at 0.05. Critical t is 3.182.

Calculated t for the comparison of Rating 1 (the investigator's) and Rating 2 was -1.04.

Calculated t for the comparison of Rating 1 and Rating 3 was -3.13. The differences between the investigator's ratings and those of Rater 2 and Rater 3 were therefore not considered to be significant. It was therefore concluded that the investigator's scoring of the pretest and posttest were reliable. Further details of the statistical analyses can be found in Appendix E.

**Posttest Procedures**

These followed the same format as the pretest and the same taped readings were used. One change was made: Subjects were able to bring any material related to their training programs to help them in their descriptive assessments.
Quantitative Analysis of Posttest

The summaries of scores in Tables 2 and 3 show how both groups fared in the posttest. As in Table 1 their mean scores are recalculated as percentages. Intra-group and inter-group rankings are also shown.

The mean score of the RMI Group (Table 2) was 41.3%. All but one subject (4) scored higher for the assessments of Tanya than of Justin. Three subjects could not complete evaluations of Justin in the set time (10, 11, 17). Four subjects scored over 60% in their assessments of Tanya (3, 9, 11, 15) and one in the case of Justin (3).

Table 2. Posttest Scores (RMI Group)

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Scores</th>
<th>Rankings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1) Justin</td>
<td>(2) Tanya</td>
</tr>
<tr>
<td>RA</td>
<td>33</td>
<td>51</td>
</tr>
<tr>
<td>IB</td>
<td>68</td>
<td>72</td>
</tr>
<tr>
<td>JB</td>
<td>93</td>
<td>109</td>
</tr>
<tr>
<td>JC</td>
<td>70</td>
<td>60</td>
</tr>
<tr>
<td>RJ</td>
<td>62</td>
<td>94</td>
</tr>
<tr>
<td>EL</td>
<td>21</td>
<td>64</td>
</tr>
<tr>
<td>CMcC</td>
<td>30</td>
<td>97</td>
</tr>
<tr>
<td>RMcK</td>
<td>26</td>
<td>32</td>
</tr>
<tr>
<td>JN</td>
<td>73</td>
<td>96</td>
</tr>
<tr>
<td>VR</td>
<td>22</td>
<td>66</td>
</tr>
<tr>
<td>Mean Score</td>
<td>49.8</td>
<td>74.1</td>
</tr>
<tr>
<td>(SD)</td>
<td>26.11</td>
<td>24.26</td>
</tr>
<tr>
<td>Mean &amp; Score</td>
<td>32.2%</td>
<td>49.4%</td>
</tr>
</tbody>
</table>
The mean score of the RAG Group (Table 3) was 30.2%. Except for (20) all subjects scored higher in their evaluations of Tanya than of Justin. One subject (16) scored over 60% in her assessment of Tanya. The scores for Justin were all rather low, although two showed some promise (16, 18). One subject (12) had difficulty completing the evaluation of Justin in the set time.

Table 3: Posttest Scores (RAG GROUP)

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Scores</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Justin</td>
<td>Tanya</td>
</tr>
<tr>
<td>5. SC</td>
<td>35</td>
<td>55</td>
</tr>
<tr>
<td>6. WE</td>
<td>26</td>
<td>48</td>
</tr>
<tr>
<td>7. KG.</td>
<td>22</td>
<td>60</td>
</tr>
<tr>
<td>8. JG</td>
<td>22</td>
<td>66</td>
</tr>
<tr>
<td>12. HMcG</td>
<td>21</td>
<td>53</td>
</tr>
<tr>
<td>14. LM</td>
<td>30</td>
<td>50</td>
</tr>
<tr>
<td>16. JR</td>
<td>62</td>
<td>96</td>
</tr>
<tr>
<td>18. LS</td>
<td>50</td>
<td>62</td>
</tr>
<tr>
<td>19. IW</td>
<td>28</td>
<td>70</td>
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<tr>
<td>20. MW</td>
<td>31</td>
<td>20</td>
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<tr>
<td>Mean Score</td>
<td>32.7</td>
<td>58.0</td>
</tr>
<tr>
<td>(SD)</td>
<td>13.36</td>
<td>19.19</td>
</tr>
<tr>
<td>Mean % Score</td>
<td>21.8%</td>
<td>38.7%</td>
</tr>
</tbody>
</table>
Qualitative Analysis of Posttest

All 20 subjects undertook the posttest, which attempted to assess their knowledge of the techniques of miscue analysis and their ability to interpret reading strengths and weaknesses according to the evaluation criteria previously outlined in this chapter. The posttest also provided some insight into the subjects' underlying assumptions concerning reading. Subjects' scores are given in The Quantitative Analysis.

RMI Subjects' Knowledge of the Techniques of Miscue Analysis

All 10 RMI Group subjects attempted the posttest. While all of the assessments of Tanya were completed, three subjects failed to complete their assessments of Justin in the time allotted.

Marking the Miscues

Most subjects identified the miscues reasonably well, omitting or incorrectly marking an average of 6 miscues in the first 30. The most frequent marking errors were self-corrected words or non-words which were identified as corrected partials and not coded. For example:

\[
\begin{align*}
\text{\texttt{piece}} & \quad \text{was marked as} \quad \texttt{pi-ic} \quad \text{or} \quad \texttt{pie} \\
\text{\texttt{saw}} & \quad \text{was marked as} \quad \texttt{sa-saw} \quad \text{or} \quad \texttt{so-saw}
\end{align*}
\]

A second type of error consisted of marking self-corrected miscues as insertions. For example:

\[
\begin{align*}
\text{\texttt{piece}}: \text{the written form is the reader's miscue.} \\
\end{align*}
\]

\[
\begin{align*}
\text{: denotes corrected miscue.}
\end{align*}
\]
more loudly than before became: *one* more loudly than before
not now he understood was marked as: not now he understood
out into the classroom was marked as: out into the classroom
and children of course were became: children of course were
**Oh look!** was marked as: Oh look!

These reduced the proportion of self-corrected miscues in the children's scores and thus affected the subjects' assessments of their reading strategies.

**Coding the Miscues**

Most subjects appeared to understand the coding procedures and carried out the steps as required, but as in the marking of miscues there were some inaccuracies which led to misinterpretation of the data; on average, between 5% and 10% of miscues were miscoded. Semantic Acceptability and Meaning Change were more accurately coded than Grammatic Function Similarity, Syntactic Acceptability, Graphic and Sound Similarities. In the last two, many subjects found it hard to discriminate between high and partial approximations. Errors in totaling miscues, calculating percentages and even in transferring totals to summary sheets or selecting the correct ones for interpretation were made by 4 of the subjects, and three did not have time to complete their scoring of Justin's miscues.

* denotes word inserted in text
** denotes word omitted from text
The Cuing Systems

1. The Graphophonic System is the least important of the cuing systems but three subjects still showed a tendency to overstress it. Because of errors in coding, Graphic and Sound Similarities were significantly underestimated by 7 subjects. Most realized Tanya's appropriate use of the system, although one subject felt she needed "cloze activities related to graphophonic clues". Opinion was divided over the usefulness of Justin's sounding out words. One subject pointed out that he used the tactic sensibly: "He tries to sound out unknown words but doesn't persist if unsuccessful". One subject's statement, "He has no successful reading skills apart from sounding words out," flatly contradicted another's opinion that "He does make many useless attempts to sound words out". In general, it was felt that Justin relied too heavily on graphophonic cues. Two subjects did not attempt any graphophonic coding. Only two subjects mentioned reversals, one insisting that his was a reversal of her.

2. The syntactic system received attention from all subjects, although discussion was limited. Coding was reasonably well done for Syntactic Acceptability in all but three cases, but several did not attempt to code for Grammatical Function Similarity and those who did appeared unsure of themselves. Most praised Tanya's "strengths in her understanding and use of the syntactic system", and several quoted the following example:

I understand have my
He understood why the children had been calling his name.

Two considered that Justin's grammar was below a satisfactory
standard. It is actually most satisfactory. Problems with Grammatical
Function Similarity appeared to be related to the subjects' limited
knowledge of descriptive linguistics. Two subjects did not complete
the syntactic coding of Justin's miscues.

Intonation (described as punctuation by most subjects) and
fluency concerned some. Two disparaged the children's tendencies
to overrun periods or pause in unexpected places, although the
latter usually occurred because they were trying to make sense of
the text. One suggested that Tanya should read slower "in order to
delete pauses" and another that Justin should read faster for the
same purpose. These two subjects appeared to feel that speed was
somehow the clue to gaining meaning. Two commented on the children's
fluency, or lack of it, in the retelling, but without indicating what
this signified.

3. The semantic system was better handled by most subjects than
the first two cuing systems. All stressed the prime importance of
producing semantically acceptable sentences that matched the author's
intended meaning. Only two subjects made significant semantic coding
errors with Tanya, but 5 had over 10% of semantic errors in Justin's
case, partly because of incorrectly marked miscues. Most subjects
realized Tanya's strengths in this area. One wrote "She shows a high
concern for meaning both as she reads and afterwards" and another
noted: "Tanya is achieving almost 100% semantic acceptability and
author's meaning". Justin was seen to be less able. Two did not
complete the coding for Justin in this area. All subjects were able to distinguish Semantic Acceptability from Meaning Change.

Overall, the relative importance of the three cuing systems was understood, although three subjects continued to overemphasize the importance of graphophonic relationships. Most subjects appeared to appreciate Tanya's ability to use all systems effectively. "Meaning and structure are more important cues to Tanya than graphophonic cues" stated one, while another felt "She uses her knowledge of all cue systems well." They found Justin more puzzling. One thought that "His use of the cue system was fairly effective, with good use of his knowledge of syntax", but another felt "Justin is more preoccupied with the shapes of language than with its sense." Most adopted a position somewhere in between these views.

The Strategies

Self-correction was given first priority by all subjects. They tended to underestimate the children's strengths, particularly Justin's, partly because errors in marking lowered the self-correction totals and partly because they did not remember that 35% is an average score for this strategy (K.S. Goodman & Burke, 1973). They seemed to believe that all miscues should be corrected. All subjects appeared to understand the role self-correction plays in the search for meaning. This was evidenced by comments such as "Tanya corrected a great deal in a way that showed she was expecting the story to be meaningful at all times". Several commented specifically on correction of syntactically or semantically unacceptable miscues: "She (Tanya) corrects
mainly when she thinks there is something wrong with either the syntactic or semantic information she is receiving". However, poor scoring led two subjects to believe that her self-corrections were inadequate, despite textual evidence to the contrary. Few gave credit for partial corrections and only one for corrected partials: "Many of his (Justin's) corrections are partial miscues, and therefore not coded." Justin was generally seen as having poor correction strategies. The investigator is not certain what one subject meant by stating that many of his miscues were "uncorrected successfully"; she appeared to mean "not successfully corrected."

Prediction and confirmation strategies were dealt with more briefly, and in 4 cases not at all; in two of these cases the assessments were not completed in time. Four subjects integrated all strategies briefly but perceptively and provided some examples, e.g., "Tanya is reading for meaning and using all three strategies to gain that meaning." Two touched on strategies in a manner which did not indicate clearly how far they understood the concept. One said "Her (Tanya's) strengths are in her prediction, correction and confirmation strategies" and the other stated "He (Justin) has poor prediction and correction strategies", but no further explanation was given. It is understandable that self-correction was the best handled of all the strategies, because it is the only one directly coded in the RMI.
Comprehension

This was a relatively strong area. Two subjects did not, however, have time to attempt it in their assessment of Justin, and a third did not finish. The rest stressed the importance of understanding the story and gave good accounts of the children's perceptions of plots and events, and in most cases of sequence, themes and inferences. Characters were given only limited attention. Six subjects compared aided and unaided retelling. Four rather overestimated Tanya's performance. One referred it to as "almost perfect" while another insisted that "She left out nothing of any importance." The estimates of Justin's ability were generally more accurate than in the pretest. Three commented that he understood a surprising amount of the story and one that "Justin was able to grasp the general meaning of the story." Although well understood, this section was dealt with somewhat briefly and not many examples were given to support opinions.

Summary

Except for the three subjects who did not have time to complete their analyses of Justin's reading, all completed a summary and several did it well. All emphasized meaning and most discussed pupil strengths and weaknesses to some degree and related comprehending and comprehension abilities. Tanya, the more straightforward case, was generally well assessed; she was described as "a very competent reader" whose "strength lies in the fact that she is reading for meaning. Her
comprehending and comprehension are both of a very good standard."
There was a tendency to stress Justin's weaknesses and two underrated
his strengths considerably, stating that he "is not reading for meaning
and "definitely does not read for meaning."

Nine subjects addressed themselves to building Tanya's
strengths. Six realized that she only needed extending and chal­
lenging. One stated "I really don't think she needs remediation.
Her miscues are of excellent quality." It was suggested that she
pay more attention to punctuation and read more slowly, and one sub­
ject claimed, mysteriously, that she needed "gramophonic cloze"
exercises. Of the 6 who discussed teaching strategies for Justin,
4 wisely concentrated on improving his ability to read for meaning
through cloze activities, reviewing, self-correction, and question­
ing based on plots and themes. Opinion on the need for further
phonic skills varied. One subject stated that Justin's graphophonic
strategies "have been overemployed and need to be unlearned." Another
felt he should continue to use them, but only if linked to the more
important cuing systems. Two wanted to give him remediation and
practice in word attack skills because "He needs remediation work
in the graphophonic area as he does make many attempts to sound out
words." Two felt he needed help with syntax, which is actually an
area of strength for him.
RMI Subjects' Assumptions and Values Concerning Reading

The four principles used to categorize the subjects' assumptions are given in this section of the pretest analysis earlier in the chapter.

**Reading Purpose**

All subjects articulated the view that meaning is the goal of reading, both in their discussions of comprehending and comprehension. Only two showed a tendency to believe that teaching decoding skills was the way to reach it.

**Reading Cues**

All subjects showed that they could identify the three cuing systems employed in reading, although one confused syntax and semantics and one wrote of "gramophonics." All stressed the semantic system more than syntax or graphophonics, although three were still inclined to overemphasize the importance of the latter. Only one subject discussed the interrelationship of all three cuing systems in detail.

**Reading Strategies**

Most subjects appeared to understand the role of self-correction in the gaining of meaning better than those played by the prediction and confirmation strategies. All stressed the importance of self-correction. Six commented on Tanya's strengths in self-correcting for meaning and three on her successful syntactic corrections.
Four noted Justin's failures to correct for meaning rather than his successes, and only one realized his good syntactic corrections. Five discussed his attempts to avoid miscues by using word attack skills.

Prediction and confirmation strategies were discussed, with examples, by 4 subjects, but it was not clear how well the rest understood their function or nature; they are not specifically coded in the RMI, but inferred from the categorization of patterns of miscues and comprehension. Subjects tended to make statements such as "She had good prediction and confirmation skills" and leave it at that. It appeared to the investigator that the integration of the cuing systems was better understood than that of the strategies.

Reading Assessment

All subjects' posttest assessments closely followed the RMI format and the investigator's guidelines. Apart from relatively brief references on the part of some subjects to elocutionary and attitudinal factors, only aspects of reading described in the RMI were discussed. Subjects appeared to be aware of the purposes of the RMI, and to concur with the model on which it is based. Nevertheless, it was not possible to be entirely sure from their assessments to what degree they were using the RMI because they were convinced of its validity as an assessment approach and how far they were simply following instructions. Further indications of their beliefs are given by their personal comments, which are discussed later in the chapter.
RAGSubjects' Knowledge of the Techniques
of Miscue Analysis

All 10 subjects completed the posttest, using the Reading Appraisal Guide procedures. None confused these with the scoring system of the Neale Analysis of Reading Ability or Informal Reading Inventory, which had been examined during the training program and which were widely used in the pretest.

Marking the Miscues

Most subjects identified miscues with reasonable accuracy, but mismarked an average of 12% of those identified. The pattern of errors was similar to that in the RMI Group in that some corrected miscues were marked as insertions or corrected partials.

Coding the Miscues

All subjects appeared to understand the coding procedures and were able to follow them. As with the marking, errors led to misinterpretation of the data. Coding for Meaning Retained/Lost and Self-correction was better done than coding for Language Retained/Lost. There were few errors in computing percentage scores. In the Reading Appraisal Guide, coding of language and meaning (or syntactic and semantic acceptability and meaning change) is carried out at word level, instead of at sentence level as in the Reading Miscue Inventory. Furthermore, self-corrections are not counted in the computation of the percentage scores for retention or loss of language or meaning. Consequently the scores tend to give a depressed picture of the
reader's ability to deal with the text, because they deal with initial attempts but not the final versions. How this affected the RAG Group's interpretations will be discussed hereafter.

Interpreting the Miscues

Miscues are not coded for graphophonic approximation in the RAG, and this cuing system is only mentioned briefly in the section on Interpretation of Miscues in the manual. This may be why subjects gave little attention to the area. Four omitted it and 4 made brief comments to the effect that Tanya did not rely on phonic cues but Justin relied on them too much. In consequence, the average standard was low.

Coding for Language Retained/Lost was variable: Percentage scores were noticeably too high or too low in half the assessments, because of both marking and coding errors. It appeared that some subjects were not quite sure what "language" meant in relation to meaning in this context: "Justin's Language Retained is only 12% which indicates that he is not understanding what he is reading", and "He has shown that he knows how language should sound, but he is relying on this and thus losing the meaning." Most subjects provided percentage scores and a brief comment on whether these indicated any strength or weakness. Only one subject made a precise comment: "Her reading is generally grammatically consistent. She self-corrects errors involving tense and person to satisfy her demands that what she reads should sound grammatically correct." Two showed awareness that
the percentage scores did not give a full account of Tanya's strengths in this area. "Even though Tanya's Language Retained was only 40% I still think her grammatical skills are very good," stated one, and the other commented "Tanya is reading fairly well for Language Retained if we consider her miscues that were successfully corrected where language was lost."

Coding for Meaning Retained/Lost was better done, although percentages were more than 10% too high or too low in 6 of the assessments. With one exception the discussions concerning the children's reading for meaning were at least adequate, but affected by the way in which percentage scores for meaning are calculated in the RAG. Four showed awareness of this; two commented "Tanya's low percentage of Meaning Retained is surprising in view of the sound understanding she demonstrates" and "If the corrected miscues are taken into account, this (Meaning Retained) is an area of strength." However, almost all believed that Justin "did not use meaning as a reading cue" or "is not demanding that what he is reading makes sense."

Assessment of the children's ability to self-correct was affected by inaccurate marking and coding. All subjects discussed self-correction and several commented on relative strengths in syntax and meaning, for example: "Effective self-correction indicates that Tanya does read for language and meaning" and "Justin corrected 20% of his miscues and these were all where language was concerned." Only two discussed both prediction and confirmation strategies, one
noting that "The strategies of anticipating words and reviewing helped Tanya to understand the story more than spelling out - happily not used."

Seven of the group were concerned with the children's elocution; two believed that Tanya's rapid reading caused her to miscue, and one that Justin's slow reading "doesn't allow him to retain meaning." Three complained that Tanya's or Justin's "ignorance of punctuation" affected their understanding of the text.

Seven subjects downgraded Justin's ability to use reading cues and strategies, making such comments as "He needs to make some sense of what he reads" and "His concern for meaning is minimal." Tanya was better assessed, being underestimated by only two subjects.

**Comprehension**

This was one of the best sections. Discussions were mostly brief and included characters, main events and sub-plots in all cases. Some discussed sequence, inference and sense of reality. The scoring was realistic in 5 of the assessments, but in the other 5 no score was given. There was a tendency to upgrade Tanya, who was described as "excellent" and "faultless", and downgrade Justin, who "could hardly remember anything about the story", "missed the main idea" or "had no idea of the theme and couldn't infer anything from the story."
Summary

Integrated summaries were attempted by all subjects, but were often brief and confused. Three were adequate. Nine subjects made recommendations for building strengths. Five realized Tanya only needed extension and encouragement to continue her reading development; four suggested punctuation, cloze and self-correction exercises which she did not really need. Five believed that Justin needed simpler reading material, and 6 suggested activities to encourage reading for meaning. Three wanted to wean him off phonics but two felt he should combine word attack and use of context clues in his reading.

The suggestions that both children needed to improve their syntactic and semantic cuing resulted at least partly from the deflated Language and Meaning Retained scores of the RAG, which do not take self-correction into account. Two subjects compensated for this by including self-correction in a second set of scores, but most either accepted the scores, or ignored them and relied on their own "gut feeling."

In three cases subjects expressed contradictory views in different sections of the assessment; one castigated Justin for "lack of concern for meaning", but later noted "his awareness of loss of meaning but an inability to utilize 'fix up' strategies successfully."

Overall, subjects were able to follow procedures in the manual. Their interpretations appeared to suffer somewhat from deficiencies in the instrument itself as well as from their inexperience in using it.
Only one subject was well able to compensate for these deficiencies; she had previously attended an inservice on the RAG. While Tanya's reading ability was reasonably well assessed by several subjects, Justin proved more difficult for them to evaluate.

RAG Subjects' Assumptions and Values Concerning Reading

Reading Purpose

All subjects articulated the view that meaning is the goal of reading in their comments on the children's comprehending and comprehension ability. The quality of their assessments varied considerably. Justin was underrated by most, while Tanya's ability to read for meaning was generally recognized.

Reading Cues

Subjects were able to identify the syntactic (language) and semantic (meaning) systems, but four ignored graphophonic cuing, which is not coded in the RAG. In their discussions of syntactic and semantic cuing, most indicated in some way that the latter was the most important. Of those who discussed building strengths, most emphasized syntactic and semantic cuing strategies, although not always appropriately for the child concerned.

Reading Strategies

The subjects' knowledge of the functions of the three strategies in the reader's search for meaning was patchy. The importance of self-correction was well understood, and several subjects
differentiated between Tayna's language and meaning corrections. However, none gave the children credit for partial corrections or corrected partials. Four subjects noted Justin's successful language corrections but one insisted that he had no correction strategies at all.

Prediction and confirmation were mentioned by several subjects, but only two attempted to integrate all three strategies in their assessments of the children's reading.

Reading Assessment

The subjects' views of the validity of miscue analysis are partly indicated by the fact that all followed the Reading Appraisal Guide format closely in their assessments, but it is difficult to tell whether they did so totally from conviction, or because they realized it was expected of them. Their interpretations and recommendations were generally in conformity with the Goodman model of reading on which the Reading Appraisal Guide is based, even though they were not always consistent or appropriate. Their verbally expressed feelings about the teaching and assessment of reading and their performances on the practicum assessment will be further discussed in this chapter.

Quantitative Comparison of Pretest and Posttest

The pretest and posttest scores of each group were compared.
### Table 4: Comparison of Pretest and Posttest Scores

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Pretest %</th>
<th>Posttest %</th>
<th>Difference %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. RA</td>
<td>12</td>
<td>28</td>
<td>16</td>
</tr>
<tr>
<td>2. IB</td>
<td>18.3</td>
<td>46.7</td>
<td>28.4</td>
</tr>
<tr>
<td>3. JB</td>
<td>47</td>
<td>67.3</td>
<td>20.3</td>
</tr>
<tr>
<td>4. JC</td>
<td>43.3</td>
<td>43.3</td>
<td>-</td>
</tr>
<tr>
<td>9. RJ</td>
<td>23</td>
<td>52</td>
<td>29</td>
</tr>
<tr>
<td>10. EL</td>
<td>15.7</td>
<td>28.3</td>
<td>12.6</td>
</tr>
<tr>
<td>11. CMcc</td>
<td>19.7</td>
<td>42.3</td>
<td>22.6</td>
</tr>
<tr>
<td>13. RMck</td>
<td>18.3</td>
<td>19.3</td>
<td>1</td>
</tr>
<tr>
<td>15. JN</td>
<td>60.7</td>
<td>56.3</td>
<td>-4.4</td>
</tr>
<tr>
<td>17. VR</td>
<td>25.3</td>
<td>29.3</td>
<td>4</td>
</tr>
<tr>
<td>Mean % Score</td>
<td>28.33</td>
<td>41.28</td>
<td>12.95*</td>
</tr>
<tr>
<td>(SD)</td>
<td>16.9</td>
<td>14.99</td>
<td></td>
</tr>
</tbody>
</table>

*p <0.05

Table 4 compares each RMI subject's mean percentage scores on the Pretest and Posttest. The overall mean gain for the group was 12.95%. The pattern of individual scores was generally consistent with the group result. Six subjects' scores improved by over 10%, but four of the scores showed little variation between pretest and posttest.
Figure 3 shows the RMI Group's gains in graphic form. Both pretest and posttest score distributions are positively skewed.

The question asked in this study concerning the RMI Group is whether the subjects would significantly improve the scores on their assessments of two readers between the pretest and the posttest.

The Direct Difference Method, a two-tailed t-test for repeated measures, was used to compare the difference between pretest and posttest mean scores. While a one-tailed t-test would have been adequate, it was decided that a two-tailed test was preferable, as being the more conservative measure. Significance level was set at 0.05. Critical $t$ is 2.262.

Calculated $t$ was 3.351.

The difference between the pretest and posttest mean scores for the RMI Group was therefore considered to be significant.
### Table 5: Comparison of Pretest and Posttest Scores

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Scores</th>
<th>Pretest %</th>
<th>Posttest %</th>
<th>Difference %</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. SC</td>
<td></td>
<td>30</td>
<td>30</td>
<td>-</td>
</tr>
<tr>
<td>6. WE</td>
<td></td>
<td>24.7</td>
<td>24.7</td>
<td>-</td>
</tr>
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<td>7. KG</td>
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<td>28.3</td>
<td>27.3</td>
<td>-1</td>
</tr>
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<td>8. JG</td>
<td></td>
<td>24.7</td>
<td>29.3</td>
<td>4.6</td>
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<tr>
<td>12. HMcG</td>
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<td>38</td>
<td>24.7</td>
<td>-13.3</td>
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<td>14. LM</td>
<td></td>
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<td>16. JR</td>
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<td>52</td>
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<td>.7</td>
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<td>18. LS</td>
<td></td>
<td>26</td>
<td>37.3</td>
<td>11.3</td>
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<tr>
<td>19. IW</td>
<td></td>
<td>20</td>
<td>32.7</td>
<td>12.7</td>
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<tr>
<td>20. MW</td>
<td></td>
<td>30</td>
<td>17</td>
<td>-13</td>
</tr>
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</table>

**Mean % Score**

<table>
<thead>
<tr>
<th></th>
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<th>28.57</th>
<th>30.24</th>
<th>1.67*</th>
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<tr>
<td>SD</td>
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<td>10.68</td>
<td>9.55</td>
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</table>

*NS

Table 5 compares each RAG subject's mean percentage scores in the Pretest and Posttest. The Group's mean gain was 1.67%. The pattern of individual differences was generally consistent with the group result. Only three subjects made gains above 10%, and two made losses of more than 10%. The scores of the other five varied little between Pretest and Posttest.
Figure 4: Comparison of the Distribution of Pretest and Posttest Scores (RAG Group)

Figure 4 shows that distributions of scores in pretest and posttest are similar. They are positively skewed.

The question asked in this study concerning the RAG Group was whether the subjects would significantly improve the scores on their assessments between the pretest and the posttest. The Direct Difference Method was also used to compare the difference between pretest and posttest mean scores. Significance level was set at 0.05.

Critical $t$ is 2.262.

Calculated $t$ was 0.545

The difference between the pretest and posttest mean scores for the RAG Group was therefore not considered significant.
Qualitative Comparison of Pretest and Posttest

RMI Group

Although three subjects were unable to finish their assessments of Justin, the posttests were measurably superior to the pretests. Subjects demonstrated that they were able to carry out the miscue analysis procedures, although their assessments were in many cases affected by inaccuracies in marking and coding of miscues and calculating percentage scores.

The relative importance of graphophonic, syntactic and semantic cuing was better understood in the posttest than in the pretest. There was less emphasis on graphophonics, and syntactic cuing, which was largely ignored in the pretest, was much better assessed. However, a number of subjects appeared to be unsure of the nature of Grammatical Function Similarity and the reasons for coding it. Semantic cuing was better handled in the pretest than the other cuing systems, and therefore improvement was less noticeable.

Of the reading strategies, self-correction was the most effectively assessed in both pretest and posttest, but in the latter there were more attempts to relate it to syntactic and semantic acceptability. Only two subjects integrated the three strategies well in both pretest and posttest. Others showed awareness in the posttest that they should be discussing prediction and confirmation, but could not do much more than identify the strategies.
Assessment of the retellings did not change markedly. There was continued emphasis on events rather than characters. Plot and theme were discussed only in the posttest, where there was somewhat less emphasis on elocution and more on content.

The subjects' ability to integrate their findings and summarize strengths and weaknesses improved noticeably during the RMI program. All subjects learned to assess patterns of miscue analysis and compare comprehending and comprehension ability. Overall, there was less emphasis on deciphering words and more on understanding the story in the posttest. However, interpretations still tended to be brief and not well supported by examples. In the posttest a much higher proportion of subjects recommended building the children's strengths than in the pretest. Suggestions included extending reading in interest areas, and a range of meaning-oriented strategies. This contrasted with the pretest preoccupation with elocutionary standards. Only two subjects stressed phonics skills.

It was evident from the pretest that this group always believed in the importance of reading for meaning, although not all subjects stressed it very strongly and a number leaned towards traditional skills-based teaching approaches. The posttest showed a sharpening of focus on particular aspects emphasized in the Goodman model of reading rather than a change of attitude towards the purpose of reading, and a move towards meaning-oriented strategies for testing and teaching. In both pretest and posttest there were many misconceptions and misinterpretations and most subjects produced better
analyses of Tanya, a good reader and reasonably easy to assess, than of Justin, whose reading required more sophisticated interpretation.

Of the 10 subjects in the RMI Group, 6 improved noticeably during the program; three subjects' assessments showed minimal change in scores but some in method. Only one subject performed very poorly in both tests; her posttest marking and coding were above average, but she seemed unable to interpret the information gained from them.

RAG Group

The RAG Group's posttests did not show significant overall improvement in comparison with the group's pretests. The subjects apparently understood the format of the instrument they used and all but one were easily able to carry out the procedures in the time allotted, but with variable effectiveness. It was clear that in the posttest the emphasis on reading for meaning was even stronger than in the pretest; it was stressed by all subjects, instead of only two-thirds of them. However, not all were very clear as to how readers could best gain meaning from the text.

Marking the miscues was done reasonably well, and showed that the subjects had improved their ability to identify miscues. Coding was variable and indicated some uncertainty as to what was meant by "Language Structure". Having a precise scheme for marking and coding miscues should have been to the subjects' advantage, despite their relative inexperience of it. The Reading Appraisal Guide's
method of scoring tends to give a depressed picture of the reader's strengths and weaknesses in the areas of Language and Meaning. Only two subjects were clearly aware of this and compensated for it in their assessments of Tanya, and two more realized that Tanya's Meaning Retained scores did not give a true picture of her ability.

In the pretest subjects tended to overemphasize the importance of graphophonic cuing. Since miscues are not coded for graphophonic approximations in the RAG, several subjects ignored this area in the posttest, and others barely touched on it. Syntactic cuing, which was largely ignored in the pretest, was better evaluated by most subjects in the posttest. However, they tended to underestimate Justin's strengths. Semantic cuing was treated as important in both pretest and posttest and was the most effectively assessed of the three systems. As with the syntactic system, subjects tended to underestimate the children's strengths in this area, particularly in Justin's case.

The importance of self-correction as a strategy was emphasized by all subjects in both pretest and posttest; in the former, comment was general, but in the latter several subjects discussed Tanya's specific strengths in language and meaning correction, and noted Justin's language corrections. Prediction and confirmation were commented on in the pretest, often in different terms, but in the posttest only two subjects attempted to discuss them in any detail. No suggestions for the assessment of these strategies are given in the RAG manual.
Assessment of comprehension was the subjects' strongest area in both pretest and posttest. In the latter, more attention was paid to characters, and plot and theme were discussed as well as events. However, somewhat less attention was paid to responses to questions and to differences between aided and unaided retelling. Assessments in the pretest were variable, but in the posttest there was an overall tendency to upgrade Tanya and downgrade Justin.

Most subjects attempted summaries in the pretest. All did so in the posttest but they tended to be brief and the standard was not high overall. In the pretest the few who suggested means for building strengths emphasized teaching subskills, especially word attack skills, and only two mentioned comprehension. In the posttest 9 subjects made specific recommendations. Those whose views were in keeping with the Goodman model of reading suggested that Tanya only needed extension and encouragement, and that Justin could be given easier material and taught meaning-oriented strategies to counter his dependence on sounding out words. However, several suggested exercises to improve Tanya's already excellent semantic cuing and Justin's above-average syntactic cuing. As previously suggested, they may have been misled by the RAG scoring system as much as by poor interpretive skills.
Quantitative Comparison of Posttests
(RMI Group and RAG Group)

Figure 5: Comparison of Distributions of Posttest Scores

Figure 5 compares the RMI and RAG Groups' Posttest distribution of scores. The RMI Group's superior gains can be seen.

The main question that this study seeks to answer is whether the gains made by one group during the program are significant over the gains made by the other group. The investigator compared the gains (that is, the differences between the pretest and posttest mean scores of each subject) made by the RMI Group (see Table 4) with the gains made by the RAG Group (see Table 5). A two-tailed test for independent samples was used and the significance level was set at 0.05. Critical t is 2.101. Calculated $t$ was 2.287. The difference between the gains made by the RMI Group and the gains made by the RAG Group between pretest and posttest was therefore considered to be significant. Specific formulas are given in Appendix E.
Table 6 gives a breakdown of scores into the average number of points gained in the five main categories of assessment by the following groups:

- The whole group in the Pretest: Column (2)
- The RMI Group in the Posttest: Column (3)
- The RAG Group in the Posttest: Column (5)

It can be seen that the RMI Group made gains during the program not only in the overall scores but also in each section of the assessment. The RAG Group made some gains in three sections and losses in two.

The posttest differences between the two groups in the areas of Semantic Cuing and Comprehension are relatively small, while those in Graphophonic and Syntactic Cuing and Summaries are larger. These differences are discussed further in the qualitative comparison.

Table 6: Breakdown of Pretest and Posttest Scores (RMI and RAG Groups)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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<tbody>
<tr>
<td>Graphophonic</td>
<td>20</td>
<td>6.2</td>
<td>8.7</td>
<td>4.6</td>
</tr>
<tr>
<td>Syntactic</td>
<td>20</td>
<td>4.25</td>
<td>8.55</td>
<td>5.85</td>
</tr>
<tr>
<td>Semantic</td>
<td>30</td>
<td>10.35</td>
<td>11.95</td>
<td>9.7</td>
</tr>
<tr>
<td>Comprehension</td>
<td>30</td>
<td>10.3</td>
<td>12.85</td>
<td>11.5</td>
</tr>
<tr>
<td>Summary</td>
<td>50</td>
<td>11.6</td>
<td>19.9</td>
<td>13.7</td>
</tr>
<tr>
<td>Total Pts.</td>
<td>150</td>
<td>42.7</td>
<td>61.95</td>
<td>45.35</td>
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</tbody>
</table>
Qualitative Comparison of Posttests
(RMI Group and RAG Group)

Since its purpose is to discover whether teachers using the Reading Miscue Inventory would make better assessments of children's reading than those using the Reading Appraisal Guide, a comparison of their respective performances on the posttest is central to this study. Not only their scores, but the manner in which the subjects carried out their assessments, are of interest.

Differences in The Groups' Performances

It was noticeable that the RMI Group required more time to complete the posttest than the RAG Group. Seven of the RMI Group took the full 2 hours to complete the assessment of Justin. One of them did not complete the coding and wrote the summary in note form during the last few minutes. Two were unable to complete a fair portion of the assessment. Only three needed the full time to finish their assessments of Tanya. The average time for these was 1 hour, 35 minutes. In contrast, all 10 subjects in the RAG Group completed their assessment of Tanya within the time limit, taking an average of 1 hour. Two were somewhat pressed to finish their assessment of Justin; the average time for that was 1 hour, 25 minutes.

Amounts written were similar across the two groups, being approximately 400 - 450 words, with a slight tendency for subjects to write more about Tanya. It appears that the RMI Group took longer than the RAG Group to mark, code and interpret miscues. Both groups found Justin more difficult to deal with than Tanya and both groups tended to downgrade him.
Marking and Coding

Despite the more complex nature of these tasks in the Reading Miscue Inventory, posttest standards were similar across the two groups, although they differed considerably within each group. The RAG Group made slightly fewer errors in identifying miscues than the RMI Group, while the RMI Group were a little more accurate in coding miscues according to the categories specified in their instrument. Most subjects appeared to understand their respective systems, but they could not yet use them accurately. The RAG Group, who were dealing with a simpler system, understandably made fewer errors in calculating and transferring percentage totals.

The Cuing Systems

Performances within each group varied greatly. Between-group differences were most noticeable in the areas of graphophonic and syntactic cuing where the RMI Group performed considerably better; however, in the more important area of semantic cuing, the two groups were closer together.

1. Graphophonic cuing: The RMI Group showed greater improvement in this area. In both groups less emphasis was placed on this system than in the pretest. The RAG subjects had no means of coding for graphophonic approximations and 4 ignored them. Except for three who continued to overstress a word attack skills, the RMI Group showed a better understanding of this system's relative importance. Most realized Tanya's strengths but were divided over Justin's use of the system to gain meaning in his reading.
2. Syntactic Cuing: Both groups showed a better understanding of the importance of language structure by paying more attention to this system than in the pretest. However, there were some misconceptions. It was evident that some of the RAG Group were uncertain about the exact meaning of "language" as used in their assessment instrument and the RMI Group were unsure of Grammatical Function Similarity. One member of the RAG Group and 4 of the RMI Group discussed the children's strengths and weaknesses in some detail, but others were content to give percentage estimates and make brief comments. The RMI Group were aware of Tanya's strengths but tended to underrate Justin, while the RAG Group tended to underrate them both.

3. Semantic Cuing: This was the best understood of the systems in both pretest and posttest. Coding was fair in both groups' posttests and most subjects understood the prime importance of using this cuing system efficiently in the search for meaning. Again, Tanya was better assessed by the RMI Group, as the RAG Group tended to underrate her. Members of both groups were inclined to make exaggerated comments about Justin's weaknesses.

The Strategies

These were somewhat less well handled than the cuing systems, with the exception of self-correction. All subjects showed an understanding of the importance of this strategy in the search for meaning. However, scoring was affected by marking and coding errors, particularly in the RMI Group, who were using a more complex system. Both
groups tended to underestimate the percentages of corrected miscues. In both Groups, several noted Tanya's successful corrections for syntactic and semantic acceptability, but inaccurate scoring caused two subjects in each group to believe that her self-correcting strategies were inadequate, despite textual evidence to the contrary. Most subjects felt that Justin performed poorly in this area. Four in the RAG Group but only one in the RMI Group noted his good syntactic corrections. Several in each group commented on his lack of success in correcting for meaning and a few insisted that he had no self-correction strategies at all.

The best and worst evaluations of self-correction came from the RMI Group, while those in the RAG Group were more consistent overall. This was not so in the case of prediction and confirmation strategies. Four of the RMI Group discussed these perceptively, although only two of them gave examples. Two simply mentioned them. In the RAG Group, three subjects mentioned these strategies, but only two attempted any discussion.

**Comprehension**

This was the area in which the two groups were closest, and scores did not differ greatly between pretest and posttest.

In both groups, understanding was emphasized by all subjects. There was still relatively little comment on character, but plots, themes and events were discussed more fully than in the pretest. Both groups tended to overestimate Tanya's retelling, which was
good but not exceptional. The RMI Group's estimates of Justin's retelling were generally fair, but the RAG Group were inclined to downgrade him.

**Summary**

All subjects except those who could not complete the assessments attempted to integrate information in some form of summary in the posttest and half of them did it at least adequately. All stressed meaning to at least some degree. The RMI Group's performance was superior; only three of the RAG Group produced adequate summaries.

Nine subjects in each group suggested activities for building Tanya's strengths. Six in the RMI Group and three in the RAG Group realized that she only needed extending and encouraging. Two RMI and 5 RAG subjects were unnecessarily concerned with her expression, i.e., teaching her to read more slowly and recognize punctuation marks. Four of the RAG Group thought she needed cloze exercises to improve her self-correction skills. Overall, the RMI subjects appeared to have a better understanding of her needs.

Six RMI Group and 9 RAG Group subjects discussed teaching strategies for Justin. Six of the RAG subjects felt he needed simpler reading material and meaning-oriented activities such as cloze exercises to help improve his reading; 4 of the RMI Group suggested similar strategies to help him gain meaning. Both groups were divided over whether he should be encouraged to continue using
the graphophonic cuing system in conjunction with the other systems, or persuaded to abandon it. Two of the RMI Group just wanted to give him plenty of practice in word attack skills, which was not indicated from his reading performance. Three of the RAG Group and two of the RMI Group wanted to improve his syntax - one of his areas of strength. Overall, the activities suggested by the RAG Group were rather more detailed and appropriate, perhaps because they had more time to spend on discussing them.

Summary of Differences in the Groups' Performances

In summary, emphasis on meaning was better articulated in the posttest than in the pretest by both groups. All subjects were able to follow the procedures laid down for their respective instruments, but most made scoring errors. The RMI Group improved in all areas of interpretation, the RAG Group only in some. While the group's averages were similar in the important areas of semantic systems, self-correction strategies and comprehension, the RMI Group showed superiority in treatment of the graphophonic and syntactic systems, and in prediction and confirmation strategies. In the most important aspect of all, the integration and summarizing of information, the RMI Group showed greater strength overall, but not in recommendations for building strengths. The degree to which the instruments contribute to the subjects' results will be discussed more fully in Chapter 5.
Summary of Quantitative and Qualitative Analyses of Data

The investigator used both quantitative and qualitative analyses to determine whether in-depth training in the use of the Reading Miscue Inventory enabled the RMI Group to carry out more effective evaluations of children's reading and retelling of a story than training in the Reading Appraisal Guide enabled the RAG Group to do. Results showed that the RMI Group as a whole performed significantly better in the posttest than in the pretest, while the RAG Group did not. Comparisons of the two groups' pretest-posttest mean gains showed the RMI Group to be significantly superior to the RAG Group in their ability to interpret the information gained from analyses made with their respective assessment instruments.

Anecdotal Data

In addition to the pretest and posttest the investigator had three sources of information on the subjects' ability to use miscue analysis techniques and their assumptions concerning reading. These were:

1. Spontaneous verbal comments made by subjects during the program.
2. Practicum assessments carried out by subjects during the program.
3. Informal discussions with both groups at the conclusion of the program.
These anecdotal data provided support for the quantitative and qualitative analyses of the pretest and posttest, as well as helping to clarify a number of issues in the study.

Subjects' Comments Made During the Program

Spontaneous verbal comments made by the subjects were noted by the investigator during the course of the group sessions and individual conferences. She was careful not to ask subjects directly for their views on reading, and some volunteered more than others. The subjects' comments mainly concerned the changes that the program had made in their ideas of the reading process, and the instruments' effectiveness for telling them about the way children read. Excerpts from the views of the two groups are given in the following sections.

RMI Group

The RMI Group produced the most comments, and in general they were more favorable towards the instrument they were using than those from the RAG Group, except for their complaints about the time needed for RMI assessments. "It really makes you see what reading's all about, what the child's doing... it's put me off phonics forever. I've heard kids sounding out words so often and not getting the meaning." (high school teacher). "It's made me look at reading in quite a different light. I think it's worth doing, seeing what kids actually do when they're reading." (emergency teacher). "It does take rather a long time, but you get interested in some of the things they do, trying to work out why they do them... they told me
this kid was a slow learner, the worst reader in the class... his miscues are really good and most of them don't even count (i.e., don't distort meaning). He knows the story really well. He sounds awful, though, doesn't he?" (reading consultant), referring to the child chosen for her reading assessment practicum. "I think I know a lot more about how children read... I'm glad I took research with you." (teacher of the moderately retarded).

One subject stressed the need for underlying concepts of reading: "I like the program because of its emphasis on theory. I'm rather theory oriented and there isn't enough in the reading courses here. There was nothing on the reading process as such in the course I took (in 1982)." (reading consultant).

A number discussed the instrument's practical usefulness for themselves. Time and complexity were frequently mentioned as drawbacks of the Reading Miscue Inventory, despite its acknowledged value as an assessment instrument. One stated "It's time-consuming, but I can't see any better way of assessing reading. It's the only test that looks at all aspects instead of just lumping all the scores together." (primary teacher). "I really like this, even if it takes a lot of time," said another (high school teacher), and a third commented "It's quite good, but I don't know if I could get many of our kids to read enough for it. It would be useful to know about if I go into an S.E.U. (Special Education Unit, staffers by teacher consultants)." (teacher of the mildly handicapped).
However, the two S.E.U. consultants, though finding the RMI valuable for insights into the reading process, had reservations about its everyday usefulness. "It's a pretty complicated method, isn't it? I don't know if we'd have the time for it in the S.E.U.... the BRIM (Brennan Record for the Interpretation of Miscues) and the RAG are a lot quicker to use," said one of the consultants. He had used the BRIM but instead he now plans to use Section I of the RMI to code Syntactic and Semantic Acceptability and, in addition, he intends to calculate the number of fully and partially corrected miscues per sentence and total them on the Section I coding sheet. He believes he can get graphophonic data directly from the worksheet instead of coding it formally. The second S.E.U. consultant sometimes uses the BRIM, and found the RMI very time-consuming. Her pretest demonstrated a sound understanding and application of the Goodman model of reading, and as using the RMI did not improve her score in the posttest, it appears that the simplified method served her needs. However, she did find the RMI most satisfactory for the problem reader she chose to assess in her practicum.

Several subjects had difficulties learning the procedures of the RMI; yet, of the 4 who had problems keeping up with the rest of the group during the marking and coding sessions, three were among its most enthusiastic supporters. The fourth complained "It's difficult, isn't it? I get so muddled with all the different names. I keep having to look things up!" (full-time student).
One member of the RMI Group voiced the need for some preliminary information for teachers: "You need to know a lot about a child before you start. What do you do if you don't know the child? You might think he was trying when he really wasn't." (primary teacher).

RAG Group

The RAG Group subjects were also concerned about the time needed to make assessments with their instrument. "I've enjoyed this. It's pretty relevant, isn't it? The trouble is, it takes a lot of time. You reckon we'll ever be able to do a miscue in under 4 or 5 hours? If we could, it'd be really useful for some of our problem kids." (youth training center teacher). "It's useful to teach us about reading... I don't think many teachers would have the time to use it, though." (teacher of the moderately retarded). "It really takes too long. It's not much use for our children; a lot of them can't even talk properly, let alone read." (teacher at an autistic center).

Several subjects complained about ambiguity and lack of detail in the RAG instruction manual. Johnson suggests "If you are unsure how to mark a miscue in any of the above three sections (Language, Meaning, Self-Correction), talk to another teacher about it. If necessary, talk with the child about it." (Johnson, 1979, p. 36). This was considered particularly unhelpful. One subject worried "It's hard to decide what Language Retained and Language Lost really means, isn't it? and making sense is really the same as meaning." (high
school teacher). This last referred to Johnson's statement that one should ask whether a miscue sounded like language or made sense as language in order to decide whether language was retained.

In their practicum assessments, subjects found questioning after the retelling very difficult. The RAG manual gives minimal directions, apart from stating "Ask for elaboration on certain points." (Johnson, 1979, pp. 30-31). "My questions were awful," said one subject (special school teacher). "He kept looking at me as if I was stupid." "I kept saying 'Um! 'Um!'" wailed another. "It's so hard to know what to ask!" (autistic center teacher).

Feeling that her duty to her students transcended her desire for experimental purity, the investigator decided to give the fuller RMI Guidelines to both groups. After using them, several of the RAG Group were happier about their questioning, and felt they had developed more useful teaching strategies.

One section of the RAG that met with considerable approval was the preliminary interview: "The interview was good - I found out quite a lot about the child," said one subject (full time student). Others commented that it enabled them to evaluate children's oral language (kindergarten teacher) and establish rapport, as well as learning something about their reading habits and preferences.

Several subjects commented that the practicum assessment was easier than the pretest and posttest because they were able to work with children rather than tapes. They felt that observing the children and interacting with them provided useful information which they did not get from disembodied voices reading and retelling a story.
Practicum Assessments

Practicum assessments did not form part of the data used in the quantitative analysis. They provide further information that reinforces qualitative data gained from the pretest and posttest.

Subjects were required to carry out an independent assessment of a child's reading and retelling of a story, using the instruments in which they had been trained.

Most of them assessed children with whom they normally worked. Where it proved difficult for subjects teaching in preschools, autistic centers or schools for the moderately retarded to find children capable of reading stories of any length, they selected pupils from their neighborhood primary or elementary schools.

In view of the limited time available, the investigator suggested the use of a story from the Reading Miscue Inventory Kit (Y. Goodman & Burke, 19/2), or "Henry With the Hair". These had proven suitable for miscue analysis, and worksheets for them were already prepared.

Subjects carried out the taping and assessment of the children's readings at school or in their own homes. All subjects had approximately 4 hours of individual consultation with the investigator, during which their tapes were replayed and their marking and coding of miscues and questioning of the children were reviewed.

Because there had been insufficient time to do this in the group sessions, the investigator discussed means of building reading strengths with all subjects, and reviewed the assessment guidelines used in the pretest.
Subjects were asked to record the total time needed for assessment procedures. This included: The interview or conversation with the child prior to testing; taping the reading and retelling; conducting the questioning; carrying out the miscue analysis, and writing a descriptive assessment based on the investigator's guidelines. It did not include time spent in consultation with the investigator. The RAG Group took an average time of 8 hours, 30 minutes to complete their assessments. The RMI Group took an average of 23 hours, 30 minutes.

There appear to be several reasons for the length of these periods. Firstly, these were the subject's first attempts to carry out independent assessments with the instruments specified, and many were still unsure of the procedure. Several were so nervous they had to stop taping after the retelling in order to prepare themselves to ask probing questions. Three did the questioning over again because they were unhappy with their first attempts.

Secondly, subjects were required, for the purpose of the study, to write detailed and formal descriptive assessment of readers' abilities. Teachers using the RMI do not usually do this, but work directly from the Summary and Profile Sheet to develop teaching strategies for the readers they have assessed.

Thirdly, because the RAG Group included taping and assessment of preliminary interviews of readers in their overall times, the RMI Group were asked to include times of their pretest conversations to establish rapport with their readers.
These factors do not explain why the RMI Group took so much longer than the RAG Group to carry out their assessments. Most RMI subjects needed about 18 hours; one stated that she took approximately 48 hours!

RMI Group

The practicum assessments showed that the subjects understood the cuing system, except for some confusion between Syntactic Acceptability and Grammatical Function Similarity. Readers' ability to self-correct was sometimes downgraded because subjects forgot that 35% is an acceptable rate of self-correction. Despite discussions with the investigator, only 4 subjects were able to produce reasonable evaluation of readers' prediction and confirmation skills. Subjects made better assessments of readers' understanding of the stories than they did in the posttest: It may be that doing their own questioning focussed their attention on comprehension. Summaries varied considerably. Most subjects' suggested meaning-oriented strategies for helping readers build strengths.

Three of the RMI Group, who scored poorly in the posttest because they failed to complete assessments of Justin, gained satisfactory scores in the practicum assessment. This indicated that their low posttest scores were the result of lack of time rather than lack of ability.

Overall there was a wide range of scores within the group. This was at least partly due to the range of readers chosen: Some
were children whose assessment presented few problems while others were far more difficult to evaluate.

RAG Group

Readers' ability to use the cuing systems was often underestimated because the RAG scores for language and meaning do not allow for self-corrections. Some subjects were not sure of the precise meanings of the terms Language Retained and Language Lost, so they merely gave percentage scores without attempting to interpret them.

Although self-corrections were accurately scored, most subjects were unaware of acceptable levels. "He needs to increase self-correction a great deal" was said of a reader who effectively corrected 36% of his miscues.

Assessment of comprehension was generally satisfactory, perhaps for the same reasons as in the RMI Group. All subjects attempted summaries and made recommendations for building readers' strengths. About half of the latter were appropriate and specific.

Overall, the subjects did better in their practicum assessments than in the posttest. The investigator's help with marking and coding probably gave them more accurate bases for interpretation. They also had additional information from their interaction with the children before and during testing, which they did not have when working from tapes in the posttest. These factors may have increased their intuitive awareness of their pupils' reading ability and countered the effects of the misleading RAG scores to some degree.
Group Discussion After The Posttest

Discussions were held with each group at the end of the program, during which informal surveys were made to ascertain the subjects' beliefs about the strengths and weaknesses of both the program and the instruments they had learned to use. The investigator made notes of the subjects' comments, since they expressed some objections to discussions being taped.

RMI Group

Most subjects agreed that the program was too short, and in consequence the investigator had to move through the material too rapidly. Learning the mechanics of miscue analysis took up so much time that there was not enough left for interpretation and revision. They would have liked to go over the reading model again before the posttest and relate theory and practice more thoroughly. All subjects felt that the practicum assessment had been valuable. Some thought it had taken up too much time but others wished they could have done more independent assessment. Subjects were also concerned that there was not time to evaluate and return assessments before the posttest. This would have given them valuable feedback concerning their strengths and weaknesses. For example, one RMI subject, in scoring Section I, did not include sentences without miscues. This error could have been easily rectified before the posttest, had the investigator seen his completed coding sheets in time.
A feeling of pressure was an adverse factor for 7 subjects in the pretest and posttest. They complained of insufficient time in the latter to organize material, and look things up in the manual or their notes. Some left out sections of the coding in order to be sure of finishing their descriptive assessments in time. Typical comments were: "I just panicked when I saw how late it was!" "I know I repeated myself." "I didn't know whether to finish the coding or just leave it and guess." Most would have preferred untimed tests with the use of individual tapes so that they could work at their own speed.

Five felt that using taped readings and not being able to see and talk to the readers was a major difficulty. Surprisingly, only one subject was aware of problems with marking and coding, although several had deliberately not coded Grammatical Function Similarity because they found it confusing. Four felt they had serious difficulties interpreting readers' miscues because of lack of experience and uncertainty about some concepts in the inventory.

Subjects were happy with the instructions and examples provided in the manual. As one said "There are tight rules you can follow." However, they were critical of the coding sheets, which they believed could be better designed. This matter is discussed in detail in Chapter 5, under Strengths and Weaknesses of the Reading Miscue Inventory. All of this group believed the program had reinforced, clarified or added depth to their views on reading rather than changing them. Most felt they had learned new assessment skills.
RAG Group

Only two subjects were concerned with lack of time. The main concern was the lack of clear directions in the manual. Subjects complained that they had to work out how to mark, code and interpret miscues from the rather limited examples, because instructions were brief and sometimes ambiguous. It was not clear to some what "language" and "sense" meant in Section I, there were no instructions for graphophonic coding and hardly any for the retelling, particularly the questioning.

Most subjects had not realized, until it was pointed out to them, that only initial miscues are coded under Language and Meaning Retained/Lost, and therefore readers' ability to use syntactic and semantic cues and gain meaning are underrated. They suggested this might be countered by having a second score in each category which allowed for corrections.

The whole group approved of the preliminary interview, and one said that interviews should have been included in the tapes used for the pretest and posttest. Subjects disagreed as to whether it would be advisable to have parents' and teachers' responses to some interview questions as well as those of the readers. They also disagreed on the value of the manual's suggestions for helping problem readers, and the sample case studies provided. Some believed that these were badly organized and did not always relate closely to the miscue analyses, but others found them helpful for providing ideas and examples.
Like the RMI Group, the RAG Group felt that the program had given them a further understanding of the reading process. A need for further assessment experience was voiced, and they would have liked to go over the Goodman model again after they had completed their practicums, in order to relate the two more closely.

Summary of Anecdotal Data

The investigator attempted to avoid making overt judgments concerning the relative merits of the Reading Miscue Inventory and Reading Appraisal Guide in the presence of any of the subjects until the tests and practicum assessments had been returned at the end of the program. The advantages and drawbacks of both instruments were then fully discussed. It is possible that some of the views expressed may have been modified to match those of the investigator, but she does not believe this to be so, because the subjects' anecdotal reactions in general supported the findings from her evaluations of their written assessments.

Generalizability of Results

The investigator and the subjects of this study are Australians by birth or adoption, currently working within the Victorian education framework. The reading climate in Victoria differs from that found in many parts of the United States, and exposes teachers to different influences. Hence their reaction to the Goodman model of reading, miscue analysis and the training programs carried out in this study
may not be generalizable for North American situations. Since this study is mainly directed towards the Australian education community, this is not a serious problem. The purpose of the following discussion is to allow North American readers to make the necessary adjustment for differences in educational climate.

A survey of recent publications from the Victorian Education Department and its various agencies, perusal of recent numbers of popular educational journals and examination of a range of Special Education Unit pamphlets and curriculum statements from Victorian schools provide a broad indication of what educators are saying and doing about reading in that state.

Among the most quoted authors in the reference lists of the above sources one finds the following: Mark Brennan, Marie Clay, Brian Cambourne, Kenneth and Yetta Goodman, Donald Graves, Don Holdaway, Barbara Johnson, Max Kemp, Peter Rousch, Des Ryan and Frank Smith. These educators all have a holistic view of reading, i.e. that it is a psycholinguistic guessing game in which the reader's main goal is the gaining of meaning. They advocate learning to read and write in natural, meaningful context, as speech is learnt, and favor the language experience approach, individualized and interest based reading and the discovery method of writing. These views contrast with the focus on skills-based teaching strategies prevalent in many parts of North America. A view of reading that is popular in Victoria has been summed up by Lorraine Wilson, author of a local publication on teaching reading. She derided the "back to front approach to
literacy" of "these teachers who proceed from the study of single letter-sound correspondence to the study of words and then to the study of sentences," and emphasized the superiority of the "natural way of the language experience approach to reading." (Wilson, 1979, p. 67). Similar views have been emphasized in recent Education Department publications. They are also put forward by contributors to widely read journals, as well as by many teacher consultants in Special Education Units, and planners of school curriculums.

The annual epidemics of standardized testing that ravage United States school districts do not occur in Victoria, where the view that everything of educational value can be objectively assessed is not generally held. While standardized achievement tests are sometimes used for initial placement, teachers and reading consultants tend to prefer informal assessment. Some employ a jumble of word lists, phonic tests and cloze exercises, or have children read from story books and answer questions about the text. Others prefer informal reading inventories or graded passages such as the Neale Analysis of Reading Difficulty, which allow a very limited form of miscue analysis. Although many Victorian teachers are probably aware of miscue analysis techniques and their relationship with the reading model that underlies them, the Reading Miscue Inventory is not widely used. In-service courses to teach it (some of dubious quality) are given from time to time, but it is generally regarded as too difficult and too time-consuming for regular classroom use.
It is therefore not surprising to find that, as in the United States, simplified forms of the Reading Miscue Inventory have appeared. Two of these, the BRIM (Brennan Record for the Interpretation of Miscues - See Appendix A) and the RAG (Reading Appraisal Guide) are quoted in the reference lists of a number of popular texts on reading, and have modest but steady sales.
CHAPTER 5

SUMMARY AND CONCLUSIONS

This chapter will commence with a brief statement of the study's purpose and an outline of its findings. A more detailed examination of the implications of the findings will follow, consisting of a discussion of the strengths and weaknesses of the Reading Miscue Inventory and the Reading Appraisal Guide in a teacher education program, and an evaluation of such programs' effects on the subjects' use of the instruments and views of the reading process. Recommendations concerning the instruments and future graduate college programs in reading will be made. In conclusion, implications for future research in reading will be suggested.

Purpose of the Study

The Reading Miscue Inventory is an effective but complex instrument for assessing reading ability, and training in its use is both exacting and time-consuming. A number of simplified forms of the inventory have been developed, and appear to be quicker and easier to use. The question is whether they can be effectively used by teachers who have been given training in these versions of miscue analysis and an overview of their theoretical bases.

The purpose of the study is to examine the differences in the effectiveness of two graduate reading programs:
1. Training in the assessment of reading problems with practice in the Reading Appraisal Guide, a modified form of the Reading Miscue Inventory, such as might reasonably be provided in a standard graduate college course.

2. Training over the same period of time in the use of the Reading Miscue Inventory.

Findings of the Study

Both qualitative and quantitative analyses were made of the data collected. The quantitative analyses of pretest-posttest differences in each group's scores showed that the RMI Group made significant gains, while the RAG Group did not. A comparison of the differences between the pretest and the posttest scores of the two groups showed that the RMI Group's mean gains were significantly greater than those made by the RAG Group.

In addition to the quantitative analysis, written and oral statements made by the subjects during the pretest, the posttest and the training programs were qualitatively analyzed and compared. A summary of the changes in each group follows.

Changes in the RMI Group

Most subjects made measurable gains during the program in their ability to use the Reading Miscue Inventory. All subjects learned to use the marking and coding procedures. Knowledge of the relative importance of the cueing systems improved considerably and subjects developed further awareness of the importance of readers'
use of strategies. However, while correction was well handled, the assessment of prediction and confirmation strategies was not completely understood by some subjects.

Comprehension assessment was always reasonably well done, although comments tended to be brief. Most subjects developed the ability to make summaries of information gained from the miscue analyses and retellings that showed greater concern with meaning and less with peripheral matters. Subjects' recommendations for building readers' strengths generally moved from a focus on skills to meaning-oriented strategies.

However, a lack of sophistication in the use of the instrument was apparent in both the practicum and posttest assessments. Although subjects took a long time to complete the assessments, they tended to be limited in scope. There were many inaccuracies and misconceptions, especially related to readers who were more difficult to assess.

A sharpening of focus and a deeper understanding of the aspects of reading stressed in the Goodman model were noticeable among the subjects during the program, rather than major changes in their attitudes towards reading.

Changes in the RAG Group

Subjects who learned to use the RAG did not demonstrate an overall improvement in their ability to use these adapted miscue analysis techniques for the assessment of children's reading. They were able to learn the marking and coding procedures of the Reading Appraisal
Guide but their understanding of the cuing systems was variable; the importance of the semantic system was always realized and subjects improved their understanding of the syntactic system, but the importance of the graphophonic system was at first overemphasized and later largely ignored. Of the reading strategies, understanding of self-correction developed during the program, but prediction and confirmation strategies received little attention.

Retellings were adequately assessed; summaries tended to be brief and sometimes contradictory, and subjects were inclined to downgrade the children's abilities. Recommendations for building readers' strengths showed increasing emphasis on meaning-oriented strategies.

The subjects' belief that meaning is the goal of reading was emphasized more strongly as the program continued, although their ability to diagnose strengths and weaknesses of particular readers did not improve significantly.

Comparison of RMI and RAG Group Gains

The RMI Group required more time to complete their assessments than did the RAG Group because they were using a more complex instrument; nevertheless, standards of marking and coding were similar in both groups. In their treatment of the cuing systems the RAG Group were hampered by a coding method which ignored graphophonic cuing and tended to downgrade readers' syntactic and semantic ability. The RMI Group had a better grasp of the relative importance of the
cuing systems. Both groups understood self-correction ability better than the use of prediction and confirmation strategies; the RAG Group generally ignored the latter.

There was little inter-group difference in comprehension assessment, but the RMI Group produced better summaries of readers' strengths and weaknesses. Both groups' recommendations for building readers' strengths became increasingly meaning-oriented and less concerned with isolated skills teaching, but were not always appropriate for individual readers' needs.

Both groups' training programs appeared to strengthen the subjects' adherence to the Goodman model of reading, but the RMI group developed better assessment abilities. Although there were indications of more meaning-oriented approaches to teaching reading, the program was too short in duration to allow for the direct implementation and assessment of teaching strategies.

Conclusions Drawn From the Study

Both quantitative and qualitative analyses of the data provided an answer to the main question posed in this study by showing that the group trained in Miscue Analysis as reflected in the Reading Miscue Inventory was able to make significantly better assessments of children's reading ability than the group trained in the Reading Appraisal Guide. Implications for the instruments themselves and the subjects using them will be discussed in this section.
Relative Effectiveness
of the Two Instruments

Although the Reading Miscue Inventory is more complex and
required considerably more time for the subjects to master than
the Reading Appraisal Guide, this study showed it to be the superior
instrument for two main reasons: Firstly, the RMI manual provides
clearer and more detailed instructions and examples to help subjects
administer and score readings and retellings, and interpret informa-
tion gained from them. Secondly, the information gained is more closely
related to aspects of the reading process emphasized in the Goodman
model of reading. As previous investigators (Steinruck, 1975; Feely,
1977; Jongsma, 1978) have found, its use is likely to change subjects' views of reading and teaching strategies in ways that are compatible with the model.

The respective strengths and weaknesses of the two instruments will be discussed in the following pages, and recommendations made for their future use.

The Reading Miscue Inventory

The investigator believes it requires time and perseverance
to learn to use the RMI effectively, although no more than are needed for other specialized diagnostic instruments such as the Illinois Test of Psycholinguistic Abilities and the Wechsler Intelligence Scales.

Instructions are clear and detailed, but the complex system for marking, coding and interpreting miscues can be confusing for
inexperienced users. Subjects had demonstrable difficulty identifying miscues and deciding how they should be marked, whether they should be included on the coding sheets and, finally, how they should be coded. The variety of conclusions they reached concerning the same miscues clearly indicated how differently even qualified and experienced teachers respond to the same kinds of information. They need careful training in order to be able to make the fine discriminations necessary for miscue analysis, rather than simply counting miscues as "errors".

Readers' use of the cuing systems and strategies is assessed at word and sentence level. Some subjects had difficulty coding graphophonic approximations, i.e., distinguishing between high and partial similarities in the text and the readers' responses. The manual gives good instructions and examples, but not for very short words.

The heart of miscue analysis is the coding of Syntactic and Semantic Acceptability and Meaning Change in Section I. Y. Goodman (1982) believes it is worth coding up to 75 sentences because the process is quick and easy; this did not prove to be the case with the inexperienced subjects in this study, so the investigator decided to let them code 50 of the 68 sentences in "John, the Mouse Who Learned to Read." That also made it easier to calculate percentage scores.

Subjects had problems coding for language structure. For Syntactic Acceptability, some found it hard to separate syntax and meaning. Grammatical Function Similarity caused considerable problems, as coding requires a good understanding of descriptive linguistics.
This the subjects did not have, beyond a general idea of basic parts of speech and simple sentence structures, but it was hardly the fault of the instrument. They were usually able to decide whether miscues were semantically acceptable, but had difficulties estimating the degree of meaning change these caused in a passage. Furthermore, in Semantic Acceptability, "Yes" denotes a good miscue, while in Meaning Change it indicates a bad one. Y. Goodman (1983) believes this makes coders stop and think, but the investigator felt it only confused her subjects.

A minor difficulty in Section I is the lack of instruction for dialect and repeated miscues in the manual. They should be counted, but not coded as unacceptable miscues (Y. Goodman, 1982).

While miscues related to the three cuing systems are entered on coding sheets, the only strategy to be directly coded is self-correction. Prediction and confirmation are briefly referred to in the Rationale for Section I. They were either ignored or barely mentioned by half the subjects in their practicum and posttests, probably because they tended to follow directions for administering and scoring the test very closely, and these strategies did not appear in either. Yet the syntactic and semantic acceptability of initial miscues indicates readers' ability to predict meaning, and the correction, or otherwise, of unacceptable miscues shows how well meaning is being confirmed. The subjects were actually assessing prediction and confirmation strategies, but some did not appear to be aware of this.
In the comprehension section, subjects found the detailed instructions given for outlining and questioning most helpful as the latter was an area of difficulty for several of them. The manual only gives scores for character and events, because Y. Goodman (1982) has found that attempting to score plot, theme and inference is difficult, and the final scores tend to be the same whichever way one does it. The investigator's scoring of Tanya's and Justin's retellings, using both methods, confirmed this view. Subjects believed that just noting plot, theme, inferences and misconceptions on the Retelling Score Sheet provided useful information for summaries.

Adding scores, calculating percentages and transferring them to the Summary and Profile Sheet gave rise to many errors, and in some cases these resulted in serious misinterpretations. The format is complex; there are 19 sets of scores to total and percentage on the coding sheets, of which 15 must be transferred to the Summary and Profile Sheet. The terms Y (Yes), P (Partial), and N (No) are used on the coding sheets while High/Some/None are used in the instructions for graphophonic coding. On the Summary and Profile Sheet Same is also used for Yes and Minimal for Partial in some cases. These tended to cause further confusion among subjects.

The summary sheet records scores, and the manual provides 12 questions related to readers' use of cues and strategies, but most subjects did not find these very helpful. The investigator provided guidelines to help subjects integrate and summarize information gained from their assessments of different areas. These were based on
criteria given in the section on Evaluation Criteria in Chapter 3. Suggestions for building readers' strengths (Y. Goodman & Burke, 1972, chs. 11-14) focus on meaning-oriented strategies and are carefully related to specific reading behaviors discovered in the assessment. The program did not allow time to deal with these in detail, but subjects read them and found them useful guides.

The Reading Appraisal Guide

This instrument is a simplified form of the RMI and therefore quicker to use. However, the short cuts are often achieved at the expense of precision and depth. Insufficient instructions and examples, and attempts to eliminate or combine RMI questions can result in misinterpretations, and the instrument tends to downgrade readers' ability. The investigator believes that these flaws contributed to the RAG Group's disappointing performance in the posttest.

The RAG has one section that the RMI does not: A structured preliminary interview. The subjects believed this gave them useful information about readers' attitudes and preferences.

Marking and coding are simpler than in the RMI. Directions are brief and subjects found that examples given were not sufficient to supplement them. Graphophonic cuing is only mentioned under Interpreting the Miscues, and coding is limited to language (syntax) and meaning. The language category created problems for some subjects because the term is so broad. Furthermore, it is created by combining Syntactic Ability and Grammatical Function Similarity,
which are not synonymous: A miscue may be syntactically acceptable but have a different grammatical function from the text. The instructions' reference to language "making sense" served to add to some subjects' confusion between the language and meaning categories.

The meaning category appears to be synonymous with Meaning Change in the RMI, but Johnson states that "When miscues show that language has been lost, meaning has also been lost" (Johnson, 1979, p. 34), which equates it with Semantic Acceptability. The two can differ: A semantically acceptable sentence may change the meaning of the passage considerably. Most subjects assumed the term referred to story meaning, and coded it that way.

Miscue Acceptably Self-Corrected was an easy category to code. It is the only one of the strategies mentioned in the instructions, and so it is not surprising that most subjects ignored prediction and confirmation.

The worst fault of the RAG is that only initial miscues are coded for language and meaning: Self-correction is not taken into account in the scores. This means that readers who correct many of their unacceptable miscues are underrated.

Subjects found directions for the retelling were too brief. They provided no instructions or examples for questioning, an area of difficulty for most.

An advantage of the RAG is that all coding appears on one tally sheet, which makes comparing scores easy. One can see at a
glance which language or meaning miscues are corrected. Some sub-
jects used this information to their advantage, although no atten-
tion is drawn to it in the manual.

Two case studies provide examples for writing summaries of readers' strengths and weaknesses. However, these were a mixed blessing because subjects tended to copy sections of them. The manual provides a chapter on helping children with their reading. The suggestions for developing positive attitudes are useful but the section on improving reading strategies consists of a hetero-
genous conglomeration of material (Unknown Words, Questioning, Confidence, Nouns, Cloze Technique, Wrong Words, Corrections and Memorization) which needs to be reorganized.

Recommendations Concerning the Two Instruments

The following recommendations are made for the Reading Miscue Inventory and the Reading Appraisal Guide.

The Reading Miscue Inventory

1. Pretest interview: More detailed suggestions for creating a comfortable climate and discovering readers' attitudes to reading could be given by expanding the Guide (Goodman & Burke, 1976, p. 5).

2. Coding Graphophonic Approximation: The manual could in-
clude examples of words with only one or two parts.

3. Coding Dialect and Repeated Miscues: Separate instructions for dealing with these should be included for Section I. Instructions given for Section II do not apply.
4. Coding Grammatical Function: Some teachers need a fuller explanation of this item. Examples in the manual (Goodman & Burke, 1972, pp. 56-57) could indicate the functions of both "Reader" and "Text" words that are compared.

5. Coding Syntactic and Semantic Acceptability: In order to speed up procedures, the number of sentences coded in Section I should be reduced to a maximum of 50.

6. Coding for Meaning Change: The category should be renamed Meaning Retained so that, in line with Syntactic and Semantic Acceptability, "Yes" will indicate an acceptable miscue (in which the author's meaning is retained) and "No" an unacceptable miscue.

7. Coding Prediction and Confirmation Strategies: Fuller instruction could be given on assessment of these strategies from information gained in Sections I-III; spaces on the Summary and Profile Sheet should be provided for brief indications of readers' performance.

8. Coding Sheet format: For greater ease of scoring, the coding sheets for Sections I, II and III should allow for coding of 25 miscues/sentences per page instead of the present 22/23. Spaces for total scores should be enlarged for Questions 1-4.

9. Summary & Profile Sheet: The Terms Yes/Partial/No used on the coding sheets should be retained, and High/Same and Some/Minimal avoided, here and in the manual. It has been suggested that scores be shown on bar graphs or percentage lines, as in the previous manual. Calculation of M.P.H.W. (miscues per hundred words) could also be added to the Profile.
10. Integration and Summary: The questions set out below are
designed to help teachers summarize information gained from their
analysis of the reading and retelling of a story. They are based
on the investigator's Evaluation Criteria (see Chapter 3) and the
set of focussing questions in the manual (Y. Goodman & Burke, 1976,
p. 23). The revised questions are as follows:

a) How well do readers integrate graphophonic, syntactic
and semantic cues in their search for meaning?

b) How well do readers predict, correct and confirm meaning
during reading?

c) Do patterns of miscues that are not coded relate to
meaning gain? (dialect, corrected partials)

d) How well do readers retell stories and respond to
probing questions?

e) How do readers' comprehending and comprehension abilities
match? What does this tell about their ability to gain
meaning from the text?

f) What recommendations should be made for building readers'
strengths?

The Reading Appraisal Guide

1. Marking the Miscues: Instructions should be more precise and
eamples of all types of miscues should be provided.

2. Coding Graphophonic Approximations: Instructions should be
provided for estimating readers' use of this cuing system, and for
some form of coding.
3. Coding Language: This too-broad term should be replaced by Language Structure or Syntax, and it should be based on Syntactic Acceptability alone. Instructions for coding need to be more precise.

4. Coding Meaning Retained/Lost: this category should only refer to the author's meaning in the passage; another category could be added to represent Semantic Acceptability.

5. Coding Prediction and Confirmation: These strategies should be included in the assessment of readers' abilities.

6. Scoring: Readers' initial and final versions of the text should be scored by coding for Language and Meaning Retained/Lost before and after self-correction of miscues.

7. Retelling: Directions for outlining and scoring need to be more detailed; directions and examples should be provided for questioning.

8. Case Studies: Some guidelines should be provided for writing case studies, as well as the present examples.

9. Suggestions for improving reading strategies: These should be more closely related to assessment areas.

The investigator does not consider that the use of the Reading Appraisal Guide in its present form is advantageous for teachers. However, carrying out the modifications suggested is likely to reduce its alleged advantages of speed and simplicity and cause it to resemble its parent to such an extent that there would be little point in using it instead.
Effects of the Program on the Subjects

In an effective teacher training program miscue analysis and the concepts underlying it must be taught in an integrated fashion. An understanding of the Goodman model of reading is necessary if miscue analysis is to be a meaningful exercise; in turn, using the technique gives teachers a better grasp of what is involved in the reading process by enabling them to make carefully structured observations of its operation in individual readers. With this knowledge they can develop strategies for helping readers to gain meaning from print and can continue to improve their own understanding of the reading process.

The degree to which the programs in this study succeeded in reaching the above goals will be discussed in this section. Following a brief analysis of the programs themselves, the extent of their influence on the subjects' beliefs and practices will be assessed.

The programs were carried out according to plan. The same introduction to the Goodman model of reading was given to both groups. The RAG Group program also included a session in which a number of simple reading assessment instruments were examined and their rationales discussed. They were later compared with the RAG in the ways in which they related (or did not relate) to the Goodman model.

The same taped reading was analyzed in both groups' training sessions. A "teach-it-try-it" format was followed, using the appropriate manuals, and transparencies of worksheets and score-
sheets shown on an overhead viewer. This allowed subjects to learn miscue analysis procedures through alternating exposition and group practice, with immediate feedback being provided when problems arose.

Both groups then carried out independent assessments of children, using their respective instruments and the assessment guidelines given for the pretest. Four hours of individual conference with the investigator were scheduled for each subject in order to provide assistance and assess progress in the miscue analysis and retelling. Although the practicum assessments were time-consuming, they provided needed experience for the subjects and a valuable data base for the investigator.

Except for the actual assessment instruments, the RMI and RAG programs were similar in almost every way: The instructor, the venue, the training period, the teaching methods, and the underlying model of reading.

Furthermore, the investigator found that her teaching of the RMI tended to "contaminate" her teaching of the RAG. She attempted to keep closely to Johnson's instructions for the latter, but as they are often brief and ambiguous, they did not cover many areas of difficulty for the subjects and the investigator tended to draw on her knowledge of the RMI manual for elucidation. This was particularly so in the case of the retelling, and served to bring the instruction methods in the two programs even closer together.

The investigator's conclusions are that the RMI Group's performance was superior to that of the RAG Group in practicum and
posttest because the Reading Miscue Inventory enabled subjects to use miscue analysis techniques more effectively in the assessment of children's reading than did the Reading Appraisal Guide.

The long-term effects of the programs on the subjects who took part in them will depend on a number of factors:

1. How competently the subjects are able to use their instruments for assessment of readers' ability.

2. How far the subjects accept the reading model that underlies both instruments.

3. The degree to which the subjects continue to use the instruments.

4. The degree to which subjects' future teaching strategies are influenced by their knowledge of miscue analysis and the concepts on which it is based.

These factors will be discussed in the following pages.

Subjects' Competence in Miscue Analysis

From the results of the posttest, supported by those of the practicum assessments, it appears that the RMI Group are able to use miscue analysis procedures to assess children's reading ability, although most of them still need further practice. The same is true of the RAG Group, but their assessments showed a less balanced and accurate view of readers because they had to use an oversimplified form of miscue analysis.

These oversimplifications may result in both the procedures and the reasons for using them being unclear or distorted, and assessment less meaningful. It would seem that the best solution for the
subjects is to spend more time in learning to use the more complex but also more effective instrument and practicing it in their teaching situations. In order to analyze syntactic miscues effectively, most subjects will need some training in descriptive linguistics; teachers of written and spoken language must have that base if they are to understand the language they are supposed to help children use more effectively.

**Subjects' Views of Reading**

Studies quoted in Chapter 2 (Steinruck, 1975; Feely, 1977; Geissel & Knafle, 1978) indicate that training teachers in miscue analysis strongly affects their beliefs about reading. This belief is born out by the present study. The subjects were well-disposed towards the Goodmans' work when they commenced the program, but most lacked detailed knowledge of miscue analysis or the model of reading that underlies it. Both groups reacted favorably to the training programs which, they believed, gave them a fuller understanding of how children read; several subjects in both groups felt that was of more value to them than learning a new assessment technique. The investigator believes that increased adherence to the Goodman model and improved understanding of reading were demonstrated as the program continued. Use of miscue analysis appeared to focus subjects' attention on different aspects of reading; initially they seemed to believe that good elocution led to good comprehension, and that the latter could be brought about by corrective training in word
attack skills, punctuation, sight vocabulary and reading speed. As the program progressed the general focus swung to syntactic and semantic cuing, discriminating self-correction, and use of context clues as aids to the search for meaning. There was also increased stress on providing readers with interesting and challenging material.

Both groups felt they had gained insights from the programs. However, the RMI Group's comments were somewhat more favorable, and their assessments showed a better understanding of the reading process and of individual readers' abilities than those demonstrated by the RAG Group. This indicates that RMI subjects have, in general, a rather clearer view of reading, and one more strongly influenced by the Goodman model, than RAG Group subjects.

Subjects' Future Assessment Strategies

Of the two instruments, the more complex one provided more accurate, in-depth insights into readers' strengths and weaknesses for those who were able to use it efficiently. It is therefore more likely to be used than the simplified version which tended to distort the weaker subjects' assessments, and which the more discriminating subjects found less than satisfactory.

However, there are two factors not necessarily related to their enthusiasm for the method which are likely to influence subjects in their future use of the Reading Miscue Inventory: Their pupil populations and the time available for reading assessment.
Practitioners of miscue analysis rely on readers generating at least 25 miscues while reading a passage aloud; the Goodmans suggest that suitable passages can be read within 15 - 20 minutes (Y. Goodman & Burke, 1972, p. 20), which means that readers normally have to get through several pages of print. This appears to be beyond the ability of some children, but much depends on the text used: The difficulty level, how closely the contents and language relate to readers' experience and the inclusion of clues such as pictures. Y. Goodman has found that "Teachers (of retarded and learning disabled children) have been amazed at what their kids can do when given a whole story and a teacher who doesn't interrupt." (Y. Goodman, 1983).

Nevertheless, some subjects who teach moderately retarded, autistic or very young children, and even the reading consultants who work in mainstream schools, were somewhat doubtful about the uses of miscue analysis in their settings because they often work with children who have very limited language development and can read little, if anything. The subjects working in mainstream preschool, primary and secondary schools and a youth training center were the most enthusiastic. They considered that miscue analysis would be useful, particularly for cases where observation or screen testing had not clarified reading strengths and weaknesses sufficiently for relevant teaching strategies to be developed for the children concerned.
The investigator believes that the Reading Miscue Inventory has more subtle uses than most subjects realized. Teachers who have learned from its use to make in-depth assessments of reading can employ it informally in their intuitive assessments of children reading aloud or relating what they have read in the course of their regular classroom activities. Such teachers may respond differently, by not interrupting children's oral reading, by discriminating between high and low quality miscues, and by probing readers' understanding of what they have read more discerningly. A number of educators have already drawn attention to this (Y. Goodman, 1978; D. Watson, 1982), and the most experienced teachers in the RMI Group were aware that they did not always need to carry out formal coding to assess various aspects of children's reading ability.

It appears that the Reading Miscue Inventory (and to a lesser extent, the Reading Appraisal Guide) will be used formally by subjects in mainstream schools for the most part, and informally by those in a wider range of settings.

One of the main reasons why so many modifications of the Reading Miscue Inventory have appeared is that the time needed for administering, scoring and interpreting it has been seen as a disadvantage, particularly for inexperienced teachers. Their limited practice in the training program did not teach subjects to use the Reading Miscue Inventory quickly and accurately: Even the most skilled took two hours to assess a moderately difficult case, and this when the selection and preparation of material, and the administering of the reading and retelling, had already been done for them.
Y. Goodman (1983) stated that it takes one hour for an experienced teacher to complete a miscue analysis, but for subjects involved in this study it will be a much longer process, for a long time yet. Whether they will persist in order to become really proficient is not clearly indicated by this study. What is strongly indicated is that, for reasons already given, at least one attempt to make miscue analysis a speedier process has not been very successful.

**Subjects' Future Teaching Strategies**

The program carried out in this study has provided training in the assessment of children's reading ability, and to a lesser extent in recommendation of activities for building their reading strengths. Training in the development and implementation of teaching strategies could not be included in the relatively short program, so its effects on subjects' future teaching behaviors can only be inferred.

Subjects worked diligently at learning the techniques of miscue analysis and carried out the procedures conscientiously in the practicum and posttest, but it was hard to tell whether they were convinced they were using the best method of assessing reading, or whether they were only doing what was expected of them. However, the assessments indicated improved understanding of the Goodman model of reading, and their verbal comments showed increasing approval of it. Although the program took them no further than making recommendations for building readers' strengths, these showed a noticeable trend towards meaning-oriented activities which promised well for their future teaching behavior. Yet it is a big step from internalizing
ideas in a college course to operationalizing them in normal teaching settings. Subjects will need time to consider the knowledge they have acquired, and must decide for themselves how it can be adapted to their particular situations. If the new ideas are put into practice, further changes will take place: They may be reinforced by success, further adapted, or eventually discarded.

Evidence from studies quoted in Chapter 2 (Graham & Hudson, 1978; Mitchell, 1978; DeFord, 1982) suggests that teachers' beliefs about reading strongly affect their teaching methods. The investigator believes that both groups' commitments to the Goodman model of reading are strong and will persist.

Recommendations for Graduate Reading Programs

The investigator's recommendations are as follows:

1. The Goodman model of reading is appropriate for teachers undertaking graduate college programs in reading in the State of Victoria.

2. The Reading Miscue Inventory should be used rather than the Reading Appraisal Guide for enabling teachers to improve their understanding of the reading process and their ability to assess children's reading.

3. Teachers need to have a basic knowledge of descriptive linguistics before undertaking training in miscue analysis.

4. Graduate programs in reading could follow the lines of the program for the RMI Group, with the addition of a section on the
development and implementation of teaching strategies. (The program is described in detail in Appendix C; recommendations for improvement are made in a previous section of this chapter.)

5. Sufficient practice in assessment and teaching strategies is essential. Therefore programs should allow enough time for subjects to assess taped readings individually as well as in groups before attempting real, live children. Practicum assessments should be returned before the final group session, in which the miscue analysis questions should be related to the underlying model and to relevant teaching strategies. Assessment and teaching practices could be arranged in one of the following ways:

a. By conducting a course over two terms in order to allow the subjects time for such practice;

b. By conducting a course (32 hours) on the theoretical bases, assessment and teaching of reading, and having subjects carry out a practicum in assessment and remedial teaching as part of their school-based experience, which consists of nine weeks teaching in appropriate settings.

6. If student gains during the programs are to be measured by comparing pretests and posttests of the kind used by the investigator, tests should be untimed, and subjects should have individual tapes, to allow them to proceed at their own speed.
Implications for Future Research

This study has compared the effectiveness of the Reading Miscue Inventory with one of its simplified forms as an assessment measure for a small group of teachers working in a training program over three months. Further research is needed before definite conclusions can be drawn concerning the possibility of making miscue analysis a simpler process while retaining its effectiveness as an assessment measure. Future studies could include comparisons of the effectiveness of the Reading Miscue Inventory and other simplified forms of miscue analysis for different groups of teachers with different instructors. Assessments of the long-term effects of such programs on subjects' beliefs and practices are also needed.

The investigator has conducted a follow-up study with 13 of her original 20 subjects, to assess their views of, and performance with, the two instruments after studying and practicing both of them. She would like to conduct a longitudinal study which would include training and practice in teaching strategies based on assessments made with the Reading Miscue Inventory and another of its simplified forms, the Brennan Record for the Interpretation of Miscues. This is used by some teachers in Victoria.

This study has shown that both qualitative and quantitative analysis were useful in evaluating the data. The former is the more difficult method to handle, but in the long run it has provided the most interesting insights.
APPENDIX A

MODIFICATIONS OF THE READING MISCUE INVENTORY

1. Syntheses of the Reading Miscue Inventory (RMI) and Informal Reading Inventory (IRI).

_Thomas Bean (1979): Miscue Mini-form._ Bean believed that the IRI is based on an outmoded model of reading in which the reader is seen as a passive reactor to print rather than the psycholinguistic model that portrays the reader as an active seeker of meaning. Miscues should be evaluated in terms of semantic acceptability rather than correspondence to the text. So far so good, but he provided little indication as to how this could be done. After stating that the teacher could have the child read "any oral reading passage" (Bean, 1979, p. 404), he suggested that miscues could be coded for self-correction and preservation or disruption of meaning and the information gained used for teaching strategies. The apparent simplicity of this version derives from the fact that much has been left out of it. Bean provided no evidence of its effectiveness.

_James Christie (1979): Qualitative Analysis System._ The Qualitative Analysis System is an attempt to update the IRI as a diagnostic instrument by a qualitative as well as quantitative analysis of oral reading errors, using the Goodman model. Christie suggested that anyone interested should write to him for full directions.
He concerned himself with analysis of errors for graphic similarity, context, and self-correction. Bar graphs are provided for prediction and correction scores, and he suggested remedial activities for children who overrely in particular strategies or do not self-correct when needed. As with Bean (1979) and Brennan (1979), retelling is not discussed and no evidence of the instrument's effectiveness is provided.

Florence Siegal (1979): Adapted Miscue Analysis. Siegal's rationale is that teachers want to use the RMI but find it too involved and experience interference from the IRI. Observed readings that differ from the text are categorized as Miscues (acceptable) and Misses (unacceptable). She suggested passages of 100-200 words and retelling rather than questioning. Miscues/Misses are coded in letter-sound, grammar, meaning, and dialect categories. Like Bean (1979) and Christie (1979), she strongly emphasized the need for a quick and easy process, but there is more to miscue analysis than she indicated. She provided no research basis for her adaptation.

Laura Smith and Constance Weaver (1978): An Easy Method. L. Smith and Weaver began by outlining some of the problems of the IRI: Emphasis on quantity rather than quality, word-oriented assessment, and the need to use syntactic and semantic context. They suggested using whole stories or at least long paragraphs for readings. Instructions are fair, but the two coding sheets are rather confusing, especially as there is one serious misprint in which a miscue is "semantically and syntactically acceptable, but the reader has made
no attempt to correct the miscue" (L. Smith and Weaver, 1979, p. 19),
which suggests that acceptable miscues ought to be corrected! Once
again, no evidence of the effectiveness of their version is provided,
and they give a sounder rationale for not using the IRI than for
altering the RMI.

Tortelli's Simplified Psycholinguistic Diagnosis is the oldest and
simplest of the modifications and, like the others, is an attempt
to shorten the RMI on the grounds that classroom teachers have little
time for thorough diagnosis. The method involves deciding whether
the first 10 "unexpected readings" in an orally read passage sound
like language or mean the same as the printed text. All the ones
that do are totaled, and the resultant score provides the basis for
a psycholinguistic diagnosis. No directions are provided for the
retelling. No evidence of the practical effectiveness of this
version is provided.


believed that one of the problems of the RMI is choosing passages
at appropriate levels of difficulty for readers so that they will
produce enough miscues without getting completely bogged down in
them. In a previous study Anderson (1979) presented children with
matched pairs of cloze passages from a standardized test. One
passage was read orally and the other silently; a week later the passages were reversed. Results indicated that the children used the same strategies for oral and silent reading and were able to read the oral passages without undue hesitation. Anderson concluded that the oral cloze procedure should be used to assess silent reading comprehension. He suggested a procedure in which a child reads a cloze passage aloud, replacing the deleted words. The replacements can then be analyzed, using the RMI methods, and an overall miscue score generated in the usual categories. He did not say whether he would envisage using such short passages in his miscue analysis as he did in his study, but because he is concerned with levels of difficulty, one imagines that he is thinking in terms of graded passages of limited length.

Mark Aulls (1979): Qualitative Analysis of Silent and Oral Reading (QASOR). Aulls and McLean apparently developed QASOR together but described it in different papers (Aulls, 1979; McLean, 1979) and in somewhat different ways. McLean's account appears to be the basic one, and Aulls has added some trimmings of his own. They proposed application of the technique used in the RMI (which they considered to be the only qualitative, theory-based approach to reading error analysis) to both oral and silent reading measures, using cloze passages for the latter. They proposed use of passages of approximately 1,000 words, divided into eight portions. The reader reads the whole passage silently, completing two cloze sections near the middle and end part of the whole passage, and then rereads two
designated sections of the passage aloud. A miscue analysis is
carried out on both the oral reading and the silent cloze. McLean
was content to use the Goodman miscue analysis procedures, but Aulls
included a weighted score for reading fluency and assigned semantic
(meaning) functions to nouns, pronouns, and verbs and syntactic
(grammatical) function to adverbs, adjectives, and prepositions. He
considered that prepositions do not often alter the meaning of sentences
or paragraphs. This seems rather rash: There is a lot of difference
between a plane flying over the sea and a plane flying into the sea.
Aulls and McLean believed that there is an advantage in assessing both
oral and silent reading and in using two methods (reading aloud and
clozing) to do it. Unfortunately, they do not appear to have any
evidence that it is better than other methods.

Brian Cambourne (1977): Cambourne Reading Analysis Procedure
(CRAP). The Cambourne Reading Analysis Procedure is a diagnostic
instrument designed to measure reading comprehension and is based on
psycholinguistic principles. It utilizes a miscue analysis of "not
exact replacements" of deleted words in a silent cloze exercise. It
was developed from two pilot studies that resulted in five categories
of miscues, grammatical function, syntactic approximations, semantic
approximations, maintenance of meaning, and peripheral similarity.
These studies also indicated that good readers produce better semantic
and syntactic miscues than poor readers and that poor readers produce
more partial words as miscues.
Margaret McLean (1979): Qualitative Analysis of Oral and Silent Reading (QASOR). See Aulls.

William Page (1975): The Post Oral Reading Cloze. In the Post Oral Reading Cloze procedure, the child reads a passage orally and a miscue analysis is carried out as outlined in the RMI. Page divided miscues into supercues (acceptable miscues), entropicues (neutral miscues), and altercues (miscues that alter the meaning of the text). Comprehension is assessed by having the child silently reread the passage, which has been converted into a cloze exercise. The child then fills in the blanks. Because cloze exercises result in higher scores than retelling, the scores must be adjusted. Page has carried out a number of miscue analysis studies which were mainly concerned with predicting comprehension scores for miscues and silent cloze scores from oral ones. He has found that pseudocues predict comprehension scores better than do supercues (Page, 1977) and that oral cloze predicts silent cloze results (Page, 1975). The results of his more recent study (Page, 1979), an attempt to predict silent reading cloze scores from several categories of oral reading miscues, produced inconclusive results.

3. Simplified Forms of the Reading Miscue Inventory.

Mark Brennan (1979): Record for the Interpretation of Miscues. The Record for the Interpretation of Miscues is obviously based on the Goodman Model of Reading, although Brennan did not acknowledge this.
He suggested using graded passages from an IRI until the reader is miscuing one word in five, a very high rate. The coding sheet is very similar to that of the RMI: It includes graphic similarity, phonic similarity, self-correction, grammatic function, semantic acceptability, and meaning change miscues. Percentages of errors are similarly calculated, but the bar graphs are simpler. Brennan appears to have lifted a complete section out of the RMI and simplified the coding a little. It is very similar to that of the 1976 version of the RMI (Goodman & Burke, 1976). Retelling is assumed and the instrument has been field-tested (Brennan, 1983).

M. Griffin and K. Jongsma (1980): Adaptation of the Reading Miscue Inventory. This version of the RMI is a detailed adaptation of the methods used for administering, scoring, and evaluating the retelling. It is based on the McConaughey (1980) story structure and has five major steps: (1) selection of materials, (2) preparation of a detailed outline of the major components of the test, (3) tape-recording of the oral reading, (4) presentation of a distractor to the reader, and (5) evaluation of the oral reading and retelling. The procedures are not as open ended as the ones in the RMI, and the distractor seems an unnecessary complication in an allegedly simplified form of the RMI. There is no evidence of research.

J. Hood (1975-76): Quantitative Analysis of Oral Reading Errors. Hood's test presents an assessment system for oral reading errors from the Goodman Taxonomy of Reading Miscues and a number of informal reading
inventories. The categories are: Order, rev (reversal), stem, affix, sub (substitution), nonsense, insert (insertion), omit (omission), skip, and punc (punctuation). Errors are counted at word level rather than phrase level. Hood carried out an interrater reliability study, using her criteria for "errors", and appeared to be more concerned with reliability of scoring procedures than with their validity.

Barbara Johnson (1979, 1983): Reading Appraisal Guide. The Reading Appraisal Guide is an 80-age booklet designed for classroom use with problem readers, grades 5-12. It contains an introduction to the reading process and reading attitudes, a guide to assessment (including a preliminary interview), and a reading test based on the RMI, which she considered the most comprehensive and effective way of assessing reading, but difficult to acquire. She said that the reading passage should consist of a complete story that takes 15-20 minutes to read. Miscues are coded at word level for language and meaning retained and lost, and self-correction. Scores are given as percentages of total miscues. However, she has not explained clearly what a miscue is or how each kind is to be marked, coded, and interpreted. She has provided a number of good examples and samples of completed coding sheets. Teachers can look at the case studies provided; these are related to remediation and indicate that Johnson is well aware of how miscue should be interpreted, even though she did not give detailed directions for inexperienced teachers.
to use. Unlike most other authors, she provided evidence of having field tested her system (or the Goodman system), and she is the only one of the 15 authors who tried to give the teacher a rational explanation of the reading process.


Potter's Modified Form of Miscue Analysis is not so much a simplification of the RMI as an amplification. Potter suggested that in order to discover whether readers who make syntactic and semantic miscues are relying on graphic information or context, a random list of words in the oral reading passage should be presented to them either before or after they read the passage aloud. Their in-context and out-of-context miscues can then be compared. He argued that if they identify words out of context, they must be relying heavily on graphic cues. No evidence is provided to support these assertions.
### APPENDIX B

**COMPARISON OF THE READING MISCUE INVENTORY AND THE READING APPRAISAL GUIDE**

<table>
<thead>
<tr>
<th>Area</th>
<th>RMI Items</th>
<th>RAG Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theoretical bases of assessment</td>
<td>Overview of RMI &amp; relationship to Goodman model.</td>
<td>The Goodman model; attitudes to reading.</td>
</tr>
<tr>
<td>Interview</td>
<td>Informal conversation to create a comfortable climate.</td>
<td>Structured interview on reading attitudes.</td>
</tr>
<tr>
<td>Test begins here</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identification of Miscues</td>
<td>Substitutions, omissions, insertions, corrections; intonational, dialect and repeated miscues noted separately.</td>
<td>Mispronunciations, omissions, insertions, corrections, punctuation; dialect and repeated miscues noted separately.</td>
</tr>
<tr>
<td><strong>The Cuing Systems</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Syntactic Coding</td>
<td>Grammatical Function Similarity: % Y, P, N Syntactic Acceptability: % Y, N</td>
<td>Language: % retained, lost</td>
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</table>

197
<table>
<thead>
<tr>
<th>Area</th>
<th>RMI Items</th>
<th>RAG Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Strategies</td>
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<td></td>
</tr>
<tr>
<td>1. Prediction Coding</td>
<td>(Not scored; assessed from Syntactic and Semantic Coding; see Rationale,</td>
<td>(Not scored; interpretation in sample case study.)</td>
</tr>
<tr>
<td></td>
<td>Section I.)</td>
<td></td>
</tr>
<tr>
<td>2. Correction Coding</td>
<td>Correction: % Y, P, N</td>
<td>Miscues corrected: %</td>
</tr>
<tr>
<td>3. Confirmation Coding</td>
<td>(Not scored; assessed from Syntactic and Semantic coding, Meaning Change;</td>
<td>(Not scored; interpretation in sample case study.)</td>
</tr>
<tr>
<td></td>
<td>see Rationale, Section I.)</td>
<td></td>
</tr>
<tr>
<td>Retelling and Questioning</td>
<td>Character (40%), Events (60%) scored; Plot &amp; Theme statements, Inferences, Misconceptions noted on Retelling Score Sheet.</td>
<td>Main Idea, Sub-plots, Characters, Inference scored A-F</td>
</tr>
<tr>
<td>Summary</td>
<td>Summary and Profile Sheet of Scores and M.P.H.W.</td>
<td>(Two sample case studies provided.)</td>
</tr>
<tr>
<td>Test ends here</td>
<td>Y = Yes, P = Partial, N = No</td>
<td></td>
</tr>
<tr>
<td>Suggestions for teaching strategies</td>
<td>Three chapters on reading strategy lessons.</td>
<td>One chapter on improving reading attitudes and strategies.</td>
</tr>
</tbody>
</table>
APPENDIX C

GRADUATE READING PROGRAMS

Content of Program for RMI Group

I. Group Sessions

A. Introduction: The Goodman model of reading.  2 hours
   (This is constantly referred to during the class
   miscue analysis sessions.)

1. Differences between receptive language
   (listening and reading) and productive
   language (speaking and writing).

2. The growth of language and thought in young
   children.

3. Reading as whole language: The importance
   of reading in its natural form, i.e. in context.

4. The importance of the reader's past experiences
   and home language in reading.
5. The Goodman model of the reading process:
   Interaction of reader and text; the cuing systems and the strategies.

6. The Reading Miscue Inventory: Description and relationship to the Goodman model of reading.

B. Presentation of taped reading and retelling of "Space Pet," read by Gary from the Reading Miscue Inventory (Goodman & Burke, 1972). The subjects mark the miscues on the worksheet.

C. Coding the miscues according to the guidelines for Questions 1-9: Dialect, intonation, graphic and sound similarity, grammatical function, correction, syntactical and semantic acceptability, and meaning change.

D. Assessment of the retelling: The taped retelling is replayed, analyzed, and scored from the outline in the manual under the headings of character analysis, theme, plot, events, and additional information. The reader's response to questions are included in the evaluation.
E. A reading profile of the child is completed by determining scores for graphophonic approximations, syntactic and semantic acceptability, grammatical function, meaning change, self-correction and comprehension ability.

F. An overall evaluation of the reader's strengths and weaknesses is made, and implications for future reading strategy lessons discussed.

II. Assessment Practicum

A. Each subject selects one child, preferably an elementary school pupil reading within the average range, and completes an independent Reading Miscue Inventory of the child's reading and retelling.

B. The investigator assists with the selection and preparation of a story for the reading.

C. The investigator and the subject meet regularly to discuss progress.

Total: 16 hours
Content of Program for RAG Group

I. Group Sessions

A. An overview of assessment: Purposes and procedures. 2 hours
  Purposes: comparison, placement, and diagnosis;
  The whole language versus the skills approach to assessment. Standardized and informal tests at various levels.

B. Enumeration and discussion of the following: 2 hours


2. ACER Primary Reading Survey (primary-elementary level).

3. Progressive Achievement Tests (Grades 3-9).

4. Neale Analysis of Reading Ability (Grades 2-6).

5. Informal reading inventory.

6. Cloze procedure.
C. Training in the use of the Reading Appraisal Guide

1. Introduction: The Goodman model of reading. (This is constantly referred to during the class miscue analysis sessions.)

   a. Differences between receptive language (listening and reading) and productive language (speaking and writing).

   b. The growth of language and thought in young children.

   c. Reading as whole language: The importance of reading in its natural form, i.e., in context.

   d. The importance of the reader's past experiences and home language in reading.

   e. The Goodman model of the reading process: Interaction of readers and text; the cuing system and strategies.

   f. The Reading Appraisal Guide: Description and relationship to the Goodman model of reading.
2. Presentation of taped reading and retelling of "Space Pet," read by Gary from the Reading Miscue Inventory (Goodman & Burke, 1972). The subjects mark the miscues on the worksheet.

3. Coding the miscues:
   Section 1: language retained or lost
   Section 2: meaning retained or lost
   Section 3: miscue corrected or not.

4. Interpreting the miscues: Implications of strengths and weaknesses in language and meaning retention; correction of miscues and reliance on graphic cues.

5. Assessment of the retelling and comparison with miscues.

6. Writing a case study.

II. Assessment Practicum

A. Each subject selects one child, preferably an elementary school pupil within the average range, and completes an independent assessment of the child's reading, using the Reading Appraisal Guide.
B. The investigator assists with the selection and preparation of a story for the reading and retelling.

C. Each subject has the option of selecting two tests from the list in I(B) and administering, scoring and interpreting them or of conducting an introductory interview as set out in the Reading Appraisal Guide.

D. The investigator meets regularly with each subject to discuss progress.

Total: 16 hours
Required Texts

RMI Group


RAG Group


References


Goodman, K.S. Reading: A psycholinguistic guessing game. Ibid.


APPENDIX D

ANALYSIS OF THE SELECTED READINGS

Assessment of Tanya's Reading

Graphophonic Systems

1. Graphophonic approximations of miscues:
   Graphic: Yes 52%  Partial 21%  No 27%
   Sound: Yes 38%  " 21%  " 41%

2. These showed only partial dependence on graphic cues and less on sound cues.

3. Tanya did not attempt to sound out words. In initial miscues she was more guided by syntactic and semantic cues than by graphophonic cues, e.g., in lines 1006 - 1007, having substituted "I" for "he", she changed the rest of the sentence to fit the subject pronoun. She was generally successful in her search for meaning.

4. When her predictions were unsatisfactory Tanya tended to look at the context of the miscues, rather than concentrating on miscued words alone, e.g., line 1304, where she predicted "blackboard" but corrected it to "back" which fitted in with the sentence both prior to and beyond the miscue, instead of only prior to it. Most over her final versions were meaningful, but not necessarily good graphophonic approximations.

Syntactic (Grammatical) System

1. Most sentences were syntactically acceptable (92%). If not, they were usually corrected. Only a few of Tanya's final versions were unacceptable syntactically, almost equally distributed between acceptability prior to and subsequent to the miscue.

2. Most individual substitutions were correctly inflected. About half of the original miscues had different grammatical functions from the corresponding words in the text, but in almost all cases, corrected versions were syntactically appropriate.
3. There were 15 omissions of words, of which 6 were corrected. Two-thirds of the uncorrected ones were syntactically acceptable. There was only one insertion, which was syntactically appropriate.

4. Almost all self-corrections were syntactically appropriate.

Semantic (Meaning) System

1. Tanya showed good use of prediction and confirmation strategies throughout her reading. In 87% of sentences meaning was preserved at passage level and in a few more, only at sentence level. In each of the remaining 5% of cases, the whole sentence was not meaningful.

2. There was only one specifically intonational miscue, "too!" for "to" (line 1102). Tanya's reading varied in speed and expression; she sometimes ran sentences together, and there were pauses in the midst of phrases, apparently while she worked out their meaning or considered a miscue. Direct speech was read with appropriate intonation.

3. Tanya's sentences were 92% semantically acceptable. She self-corrected approximately 52% of her miscues satisfactorily. A further 32% did not need correction, e.g. such dialect miscues as doll's house for dollhouse and around for round. The remaining 26% were uncorrected, although they were not acceptable. This indicates good correction strategies.

Comprehension (Confirmation)

1. Tanya's recall and understanding of characters were generally good. Minor misconceptions occurred, e.g., that the mouse was white as well as brown.

2. Recall and understanding of events and their relationships were generally good, although she omitted John's writing demonstration to the class and its influence on their adoption of him, and did not stress the importance of his learning to read, which was emphasized in the title and throughout the story.

3. Unaided retelling was fair, but hesitant, and there were long pauses which suggested she had difficulty recalling the story, or did not read with the purpose of remembering details. Events were somewhat confused, e.g. the biscuit hunt was repeated and the children's discovery of John misplaced.
4. With probing, Tanya produced a more ordered and better integrated version. She showed that she understood the story's implications for kindness to animals. Responses to questions were generally relevant, though sometimes very brief. Occasionally they were hard to follow, e.g., "It was written on the board and it wasn't" meaning that the word "John" was written on the board and wasn't the mouse's name being called.

Summary

1. Tanya's comprehending level was high; her miscues showed high syntactic and semantic acceptability, and limited dependence on graphophonic cues. She read for meaning, produced no non-words, a few dialect words and a number of relatively unimportant omissions.

2. Predicting, correcting and confirming strategies were good. Most of her miscues were meaningful and indicate that she was using syntactic and semantic cues rather than graphophonic ones in her prediction of the author's meaning. Self-correction strategies were effective in approximately three quarters of miscues. This shows a high correction rate. Where she did correct miscues it was almost always both necessary and appropriately done. Tanya's comprehending score showed how successfully she read for meaning. Only a small number of her sentences were syntactically and semantically unacceptable, and very few individual miscues involved major meaning changes.

3. Her strengths are her highly intelligent miscuing which indicate very good use of cuing systems and strategies. While her retelling was good, it was somewhat hesitant, and the score (70%) below what one might have expected from her oral reading performance. Initially she had difficulty recalling events exactly, but probing elicited a more ordered account and showed her ability to make inferences.

4. Tanya should be praised for her good reading strategies, and encouraged to read widely in order to develop her ability. Setting purposes beforehand and using comprehension strategies such as consciously noting main ideas and important details as she reads might be desirable when she is reading in content areas.
Assessment of Justin's Reading

Graphophonic Systems

1. Graphophonic approximations of miscues:

<table>
<thead>
<tr>
<th>Graphic: Yes</th>
<th>Partial</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>73%</td>
<td>22%</td>
<td>5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sound:</th>
<th>&quot;</th>
<th>&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>49%</td>
<td>44%</td>
<td>7%</td>
</tr>
</tbody>
</table>

2. This indicated heavy reliance on graphophonic cues, especially graphic cues. Distortions in meaning, evident from the comprehending scores (semantic acceptability 57%, no meaning change 52%) and comprehension scores (retelling 53%) indicated that the high levels of graphophonic approximation were not always accompanied by meaning gain.

3. It appears that non-word substitutions, which were mostly attempts to sound out words he did not know, affected the meaningfulness of Justin's reading. He used phonic strategies for sounding out words in single sounds, digraphs or syllables, in approximately 25% of miscues. In only two cases did this result in appropriate self-correction (excitement, piece) so this strategy did not effectively help him gain meaning. He was inconsistent at times, e.g. wrote was read as wort, wote, would, wanted - and correctly as wrote.

4. Justin sometimes seemed to focus on the sounds and structures of individual words rather than seeing them in context. Since his understanding of the story was only fair it appears that these strategies may have impeded him in his attempt to gain meaning from the text.

Syntactic (Grammatic) System

1. Seven of the miscues resulted in sentences syntactically correct up to and including miscues, and two were correct including and beyond miscues. Most sentences (70%) were syntactically acceptable, which indicates Justin's effective use of the syntactic system.

2. The ratio of correct to incorrect syntactic inflections in substitutions was 2:1, even when meaning was distorted. The grammatical functions changed in approximately half the miscues, but the sentences were mostly syntactically correct.
3. Justin neither inserted nor rearranged words, and omitted three words and two lines. Omissions were syntactically appropriate.

4. Justin attempted to correct approximately 50% of his unaccept­able miscues. Almost all self-corrections were syntactically appropriate.

Semantic (Meaning) System

1. A few sentences were changed in meaning prior to and including the miscue. Three times as many sentences were changed including and after the miscue, which indicates limited use of prediction strategies. In some cases, sentences were not meaningful, or did not fit into the context of the story. However, approximately half of the miscues did preserve meaning both at sentence level and in the context of the whole story. This indicated that Justin knew how to use prediction and confirmation strategies, but had difficulty applying this knowledge in some parts of the story. He sometimes appeared to self-correct silently, e.g. he read *she* for *shy* but knew the mouse was shy.

2. Justin made only one definite intonational miscue. In general, he read slowly and jerkily, without much expression. This is not surprising, since he is not a fluent conversationalist and the passage appeared to be rather difficult for him, both for reading and retelling. In the easier parts he read with some animation and more attention to punctuation cues.

3. Most of Justin's semantic miscues required self-correction. He attempted to correct nearly half of them, and was approximately 50% successful, which means that a quarter of the total number of miscues were corrected. This indicates that self correction is not a major strength, but Justin is aware of the need to use the strategy and can do so in some cases.

Comprehension

1. Overall recall and understanding of characters were good although some details were lost.

2. Recall and understanding of events, plot and theme were fair overall but individual events were telescoped and confused and part of the plot was ignored. The significance of certain events and their relation to the plot were not understood, i.e. that the children calling "John" were reading and not summoning the mouse. Justin realized that the story emphasized the importance of reading, but appeared unsure whether it could be true.
3. Justin's unaided retelling was poor. All characters were included and he was aware of their interaction, but events were mis-ordered and much detail was omitted. The end was related first, all the action appeared to take place on a Monday, and the mouse's literary ambitions were only mentioned at the end of the account.

4. With probing, Justin's recall of the story appeared to improve; he understood the major theme, despite some confusion about what the mouse was doing in the classroom in the first place, and why he began reading and writing. The beginning and end of the story were recalled well. His response to questioning was cooperative, even when he was obviously unsure of the answers, e.g., when he was asked whether a mouse could read. His replies were thoughtful, and he wanted to please the tester. He saw the story as a laudable means to improve children's reading, rather than entertainment.

Summary

1. Justin frequently resorted to phonic strategies for deciphering unknown text, and graphophonic approximations were high in his miscues. Most miscues were substitutions; their syntactic acceptability was good, but meaning was often lost. There was a relatively high rate of miscuing, but even in different passages he persisted; the 67th sentence had 14 miscues in 27 words. It appears that the story was hard for him to encode fluently, which limited his understanding of it to some degree.

2. Justin used graphophonic and syntactic cues more than semantic cues for predicting meaning. He read one word after the other in deliberate fashion. He attempted to correct 42% of his miscues, which indicated that he was seeking meaning but he corrected single words rather than whole phrases. He did not always know whether his strategies had been successful and approximately 30% of the final versions of his sentences changed the meaning of the story, or where not themselves meaningful at all. His retelling indicated that his comprehension and comprehending levels were similar.

3. Justin's strengths are in persisting with the reading task, even when in difficulties, and his cheerful optimism concerning reading. He eagerly volunteered to read, responded earnestly to questioning about the story, and delivered a short speech on the usefulness of reading practice in improving children's skills! His syntactic ability is a strength, too, and self-corrections show he searches for meaning with some success. Weaknesses include over-dependence on unsuccessful phonics strategies and limited use of semantic cues. These factors reduced his success in gaining
meaning from the text. During the retelling, he did always not express himself clearly but his understanding of the story was fair overall. It is hard to tell from one reading whether these are consistent patterns or whether some of them occurred as a result of the difficulty level of the story. Justin's reading strategies may be better with different reading material.

4. Justin has a good attitude to reading and should respond to appropriate teaching. He should be encouraged, and praised for his efforts. Easier material and help in developing more meaning-oriented reading strategies should assist him to become an efficient and effective reader.
APPENDIX E

STATISTICAL FORMULAS

Pretest and Posttest Interrating

The Direct Difference Method (t-test for repeated measures) was used for statistical analyses of differences between the investigator's ratings and those of either interrater.

Formula for calculating the sum of squares:

\[ \sum d^2 = \sum D^2 - \left( \frac{\sum D}{n} \right)^2 \]

Formula for obtaining the standard error of the mean difference:

\[ s_D = \sqrt{\frac{\sum d^2}{n(n-1)}} \]

Pretest-Posttest Differences

The same method was used for a statistical analysis of the pretest-posttest differences in the scores of both the RMI and RAG Groups.

Comparison of Pretest-Posttest Differences

The t-test for independent samples was used for a statistical comparison of the pretest-posttest differences of the two groups.
Formulas for obtaining sums of squares of the RMI & RAG Groups:

\[ \sum x_1^2 = \sum x_1^2 - \frac{(\sum x_1)^2}{n_1} \quad \text{and} \quad \sum x_2^2 = \sum x_2^2 - \frac{(\sum x_2)^2}{n_2} \]

Formula for obtaining the value of \( t \):

\[ t = \frac{(\bar{x}_1 - \bar{x}_2) - (\mu_1 - \mu_2)}{\sqrt{\left( \frac{x_1^2}{n_1} + \frac{x_2^2}{n_2} \right) \cdot \left( \frac{1}{n_1} + \frac{1}{n_2} \right)}} \]
APPENDIX F

SCORE SHEET FOR MARKING PRETEST & POSTTEST

<table>
<thead>
<tr>
<th>Area</th>
<th>Points</th>
<th>Tanya</th>
<th>Justin</th>
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<tbody>
<tr>
<td><strong>Graphophononic System</strong></td>
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</tr>
<tr>
<td>1. % high, low, partial similarity</td>
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</tr>
<tr>
<td>2. Appropriate approximations</td>
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</tr>
<tr>
<td>3. Meaning/phonics emphasis</td>
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<td>4. Word orientation</td>
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<tr>
<td><strong>Syntactic System</strong></td>
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<td>2. Inflections, rearrangements, omissions, insertions</td>
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<td><strong>Semantic System</strong></td>
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<td>2. Intonation</td>
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<td>3. Self correction</td>
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<td><strong>Subtotal</strong></td>
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<td><strong>Comprehension</strong></td>
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<td>1. Character</td>
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<td>3. Unaided retelling</td>
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<tr>
<td>4. Questioning</td>
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<tr>
<td><strong>Subtotal</strong></td>
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<td><strong>Summary</strong></td>
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<td>1. Total miscue pattern</td>
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<td>2. Comprehending/comprehension</td>
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<td>3. Awareness of strengths/weaknesses</td>
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</tr>
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<td>4. Building strengths</td>
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<td>5. Integration</td>
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<tr>
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<td><strong>Total</strong></td>
<td><strong>150</strong></td>
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