

DOCUMENT RESUME

ED 203 304

CS 006 143

AUTHOR Hoffman, James V.; Kugle, Cherry L.  
 TITLE A Study of Theoretical Orientation to Reading and Its Relationship to Teacher Verbal Feedback During Reading Instruction.  
 INSTITUTION Texas Univ., Austin. Research and Development Center for Teacher Education.  
 SPONS AGENCY National Inst. of Education (ED), Washington, D.C.  
 REPORT NO R&D-5092  
 PUB DATE Apr 81  
 NOTE 20p.; Paper presented at the Annual Meeting of the American Educational Research Association (Los Angeles, CA, April 13-17, 1981).

EDRS PRICE MF01/PC01 Plus Postage.  
 DESCRIPTORS \*Elementary School Teachers; Evaluation Methods; \*Feedback; \*Measurement Techniques; Measures (Individuals); Primary Education; \*Reading Instruction; \*Reading Research; \*Teacher Attitudes; Teacher Behavior; Test Validity; Theories; Verbal Communication

IDENTIFIERS \*Theoretical Orientation

ABSTRACT

A study was undertaken to relate the actual performance of teachers during reading instruction to their theoretical orientation as reflected on both the Theoretical Orientation to Reading Profile (TORP) and the Propositions Inventory (PI). The specific instructional behavior investigated was guided oral reading. Subjects of the study were 35 experienced second and third grade teachers whose group oral reading instruction had been either videorecorded or audiorecorded in their classrooms. The tapes were coded using the Feedback to Oral Reading Miscue Analysis System (FORMAS) taxonomy. After the tapes had been coded, each teacher was administered the TORP and the PI instruments. Interviews were also conducted with 14 of the teachers, during which each was asked to view and comment on his or her taped performance. The findings suggest that for most teachers there was no strong relationship between beliefs and behaviors. The results also brought into question the notion that teacher beliefs can be assessed through a paper and pencil task. Teachers' responses to interview questions suggested that their beliefs were situational and related in complex ways to the context of instruction. (FL)

\*\*\*\*\*  
 \* Reproductions supplied by EDRS are the best that can be made \*  
 \* from the original document. \*  
 \*\*\*\*\*

U.S. DEPARTMENT OF EDUCATION  
NATIONAL INSTITUTE OF EDUCATION  
EDUCATIONAL RESOURCES INFORMATION  
CENTER (ERIC)

- This document has been reproduced as received from the person or organization originating it.
- Minor changes have been made to improve reproduction quality.
- Points of view or opinions stated in this document do not necessarily represent official NIE position or policy

ED203304

A Study of Theoretical Orientation  
to Reading and Its Relationship to  
Teacher Verbal Feedback During  
Reading Instruction

James V. Hoffman  
The University of Texas at Austin

Cherry L. Kugle  
The Research and Development Center  
for Teacher Education

April 1981

Report No. 5092

"PERMISSION TO REPRODUCE THIS  
MATERIAL HAS BEEN GRANTED BY

*James V. Hoffman*

TO THE EDUCATIONAL RESOURCES  
INFORMATION CENTER (ERIC)."

This study was supported in part by Contracts and Grants for the National Institute of Education to the Research and Development Center for Teacher Education, The University of Texas at Austin. The opinions expressed herein do not necessarily reflect the position or policy of the National Institute of Education and no official endorsement by that office should be inferred. Paper presented at the annual meeting of the American Educational Research Association, Los Angeles, April 1981.

2 S006143

A Study of Theoretical Orientation to Reading and Its Relationship  
to Teacher Verbal Feedback During Reading Instruction

James V. Hoffman and Cherry L. Kugle

There is a current and intriguing notion in reading education that many, if not all, teachers operate from a theoretical orientation or conceptual framework when instructing (Harste & Burke, 1977; Duffy & Metheny, 1979; Kamil & Pearson, 1979). This basis for instruction is viewed as an implicit product of a given teacher's set of assumptions, beliefs, and knowledge about reading. Such a theoretical base influences all instructional decisions made by a teacher, from lesson planning to behavioral interactions with students during instruction. Most teachers are likely unaware that they operate from a consistent theoretical base in the manner just described, and would have difficulty articulating their own theoretical orientation in any explicit or formal manner.

The relationship between theoretical orientation and observed behaviors, as well as that between implicit understanding and explicit awareness which guides action, can be explicated by analogue to an approach to understanding language use. With this approach, psycholinguists have attempted to relate a native speaker's knowledge (language competence) of the rule structure (grammar) of a language to the use of this knowledge in generating speech and communication (language performance). It is only as the result of considerable study, introspection and inference that we can begin to make explicit statements about the characteristics of this language grammar. Such statements must be of sufficient rigor and precision to allow one to make predictions about language behaviors and then seek out confirmation of the predictions in naturally existing phenomenon. While researchers have had only limited success in specifying the exact grammatical characteristics of given languages, the

existence of a generative rule governed basis for language use has been substantially validated.

If teachers do in fact possess a theoretical orientation which is at the heart of the instructional decision making process, it would seem a worthwhile goal to devise means to facilitate the identification, characterization and study of the range of possible orientations. At the applied level such an exercise might permit teachers to examine and subsequently adapt their own profile toward one they view as more internally consistent and/or desirable. At a more theoretical level such an explicit representation would facilitate research into the effects of various orientations in relation to selected learning outcomes.

There are at present two distinct but potentially complementary approaches to determining a teacher's theoretical orientation to reading. The first involves inference of a particular orientation based on direct observation of decisions made during instruction--decisions ranging from materials selection to time allocations (Harste & Burke, 1977). These authors argue that orientations operating in reading instruction can be observed and classified along a continuum of emphasis on different units of language, ranging from isolated elements (phonics) to larger units (whole language/integration of meaning).

The second approach to determining a teacher's theoretical orientation has focused on efforts to develop a paper-pencil type task in the form of an inventory or test. Information gained from administration of such instruments has been used to make inferences regarding a teacher's theoretical orientation, and to examine the translation of that orientation into behavior during instruction. Two instruments have been developed with such a purpose in mind. The first of these is the Deford (1978) Theoretical Orientation to

Reading Profile (TCRP), which contains items reflecting accepted practices and beliefs about reading. The TCRP was designed within the framework proposed by Harste and Burke (1977). Research with this instrument indicates that it is a one-factor test measuring instruction in reading characterized by a continuum from isolation to integration of language (DeFord, 1978). Research findings also indicate a fairly high agreement between teacher profiles generated by this instrument and holistic ratings made by independent observers of the selected teachers during actual instruction.

The second instrument has been developed as part of the Conceptions of Reading Project at the Institute for Research on Teaching. The purpose of this instrument is to characterize teacher beliefs about reading in terms of standard instructional models (i.e., basal text, linear skills, natural language, interest-based and integrated curriculum models). Research with the "Propositions About Reading Instruction Inventory" has led the authors to conclude that it is an efficient and reliable tool for assessing teacher beliefs about reading (Duffy & Metheny, 1979). These researchers have found that teachers seem to consistently group themselves into two or more general categories: a "content-centered" conception (which includes both the basal text and the linear skills models) and a more "pupil-centered" conception (which includes interest-based, natural language, and integrated curriculum models). They have also concluded that, to the degree teachers do make distinctions among belief systems, they tend to distinguish more between the basal text and linear skills conceptions than between the more humanistic, "pupil-centered" conception.

Buik, Burke and Duffy (1980) reported findings from a study which attempted to relate the reading conceptions of 23 elementary school teachers to instructional practices. They found only superficial support for the

hypothesis that teachers operate from implicit theories of reading during actual instruction. Teachers' decision making seemed more related to such factors as the curriculum (i.e., the adopted basal series) and the effort to maintain "activity flow."

The research findings to date with respect to teacher's theoretical orientation toward reading and instructional practices are mixed. While teachers with markedly different or "extreme" orientations appear to organize and guide reading programs in ways consistent with their beliefs, the "typical" teachers' belief systems have only minor or unclear relationships to practice. It may be that the techniques used to observe instruction in these studies were insufficiently focused or precise to make fine discriminations among belief systems.

#### Objective

This study was designed primarily to relate the actual performance of teachers during reading instruction to their theoretical orientation as reflected on both the TORP and Propositions Inventory. The instructional behavior under study was guided oral reading. The selection of this particular instructional context was based on a consideration of five factors. First, group oral reading instruction--as best as we can tell from survey reports--is a very common element in most primary reading programs (Austin & Morrison, 1963; Howlett & Weintraub, 1979). The topic of oral reading instruction is, therefore, one of practical concern. Second, oral reading instruction has clear and well defined task characteristics, about which most teachers and students share a common understanding. In this regard, the task of oral reading is highly amenable to classroom observation (Doyle, 1979). Third, recent advances in the study of oral reading by Goodman (1967) and his associates (Goodman & Burke, 1972) point to the wealth of qualitative

information embedded in student's oral reading performance. Such information is likely indicative of a child's developing competence in reading, and reflective of the instruction a child has received (Harste & Burke, 1977). Fourth, the conceptual framework for studying teacher feedback to oral reading proposed by Hoffman (1979), as well as the development and validation of an observational system for characterizing teacher feedback (Hoffman & Baker, 1980, 1981) provide a direct means for analyzing the verbal interactions that are associated with student miscues during oral reading instruction. Fifth, and finally, the authors of both the TORP and Propositions Inventory have suggested that error correction by teachers is one of the clearest ways in which a theoretical orientation is manifested (Barr & Duffy, 1978; DeFord, 1978).

#### Research Hypotheses

Based on a careful examination of the two instruments under study as well as a general review of basic psycholinguistic principles of reading instruction, it was hypothesized that during oral reading instruction, teachers with a higher meaning orientation on the TORP and the whole language subscale of the Propositions Inventory should:

1. ignore more student miscues which result in little meaning change than teachers who have a skills or phonics orientation;
2. wait longer to respond to miscues which change meaning than teachers who have a skills or phonics orientation, thus providing the student with an opportunity to self-correct his/her own miscues;
3. respond to student miscues with contextual clues as opposed to focusing student attention on the grapho-phonetic level of the text word.

## Methods and Procedures

### Instruments

TORP. The TORP consists of 28 items reflecting belief-systems felt to be operating during reading instruction. Items are responded to on a scale of one to five, with lower ratings indicating more agreement with the statement. The total scores calculated for each respondent are felt by the author to be a general indicator of the respondent's theoretical orientation to reading. Scores in the lower range (0-65) indicate a phonics orientation, in the middle range (65-100) a skills orientation, and in the high range (100-140) an orientation toward whole language.

PRI. The PRI consists of 45 items reflecting five conceptions of reading: basal text, linear skills, interest-based, natural language, and integrated curriculum. Respondents indicate strength of agreement or disagreement on a five-point scale. The nine items reflecting the five conceptions listed above are totaled separately, resulting in five "subscale" scores for each respondent; lower scores indicate more agreement with the conception of reading reflected by the subscale.

FORMAS. The FORMAS taxonomy is a low inference coding instrument designed to represent the salient characteristics of teacher verbal feedback to student miscues (Hoffman & Baker, 1980; 1981). This instrument provides information relative to five major clusters of teacher-pupil verbal interactions which surround the mistakes made during oral reading (Figure 1). These are: (I) the characteristics of the miscue itself; (II) the way in which the student initially attempts to deal (if at all) with his or her own miscues; (III) the characteristics of teacher verbal feedback if offered; (IV) the feedback offered by other students in the reading groups; and (V) whether and, if so, by whom the correct word is identified.



Procedures. The subjects for this study were 35 experienced second and third grade school teachers whose group oral reading instruction had been either audio or video recorded in their actual classrooms. The reading groups were composed of four to eight students, with a broad range of ability levels represented. The tapes were coded using the FORMAS taxonomy. Coders were trained experts in the FORMAS system; reliability between the coders was checked periodically using procedures established by Hoffman, Gardner and Clements (1980) and found to be in excess of .30 levels of agreement on all major categories coded.

After the tapes had been coded, the participating teachers were individually administered the TORP and PRI instruments. Nine of the second grade teachers and five of the third grade teachers were invited to the research center for individual interviews. During these interviews the teachers reviewed and commented on their taped interactions in the reading group with the researchers.

### Results

Table 1 shows the means and standard deviations for the scores on the TORP and the five cluster scores for the PRI. In addition, correlations among the scores are presented. As shown in the table, there was a significant positive relationship between scores on the TORP and the linear skills conception on the PRI. There was a significant negative relationship between the scores on the TORP and the natural language conception on the PRI. These results are as expected since higher scores on the TORP represent an orientation toward a whole language conception, while higher scores on the PRI subscales represent disagreement with that subscale. Thus, the positive correlation between the TORP and the PRI linear skills conception is interpreted as follows: teachers who agree with a natural language

orientation (high TORP scores) disagree with a linear skills approach, (high PRI linear skills scores). In the same manner, the negative correlation obtained indicates that teachers who have a whole language approach to reading as measured by high scores on the TORP tend to agree with (i.e., have lower scores on) the natural language conception of the PRI. Conversely, lower TORP scores, which indicate a phonics orientation, are associated with disagreement to the items reflective of a natural language orientation on the PRI.

As described previously, there were three hypotheses of interest in the current study. These were that teachers with a higher meaning orientation on the TORP and whole language subscale of the PRI should:

- (1) ignore more student miscues which result in little meaning change than teachers who have a skills or phonics orientation;
- (2) wait longer to respond to miscues which change meaning than teachers who have a skills or phonics orientation, thus providing the student with an opportunity to self-correct his/her own miscues; and
- (3) respond to student miscues with contextual clues as opposed to focusing student attention on the grapho-phonetic level of the text word.

In order to examine the first question, a percentage of the number of times no feedback was given to miscues with low meaning change was calculated for each teacher (No feedback/LMC). Similarly, the measure of interest for question two was the percentage of times the teacher waited longer than three seconds to respond to miscues with high change in meaning (Wait/HMC). Finally, the number of times the teacher gave contextual cues to miscues, relative to all instances of sustaining feedback, was calculated (Context/SF). In all

these measures, the number of miscues which the student immediately self-corrected was subtracted from the denominator since in these cases the teachers had no opportunity to give feedback. These measures of interest were correlated with the scores from the TORP and PRI; the results are presented in Table 2. It should be kept in mind that the actual frequencies upon which these percentages are based may be relatively small. For example, teachers offered sustaining feedback to miscues on an infrequent basis. When this type of feedback is further classified by form (i.e., attending, grapho-  
phonic, or context) the numbers become reduced even further.

As can be seen in Table 2, the only teacher feedback variable which was significantly associated with teacher beliefs was the tendency to wait to give feedback to miscues with high meaning change. This variable was positively correlated with scores on the PRI linear skills component, and negatively correlated with the PRI natural language and integrated curriculum scores. This implies that those teachers who respond to the PRI items in a manner which indicates their orientation toward a whole language (or meaning-driven) approach to reading instruction are more likely to wait to give feedback to student miscues which change the meaning of the text. Teachers who agree with a linear skills approach are more likely to give immediate feedback to miscues which violate the meaning of the text.

A subsample of the teachers were invited for follow-up interviews based on availability and their physical proximity to the research center. The individual interviews with the teachers were organized around a review of the audio or video taped interactions with their own reading groups. The teachers were informed that the purpose of the interview was to have them comment on their interaction strategies in order to shed light on what they might have been thinking about or what they were motivated by in choosing

specific actions. The playback of the tapes was stopped at each miscue point (if there was no verbal feedback) or at the point of feedback if it was offered to the miscue. The following set of questions were then posed to elicit teacher comments:

1. Why did you choose to (or choose not to) respond to that mistake?
2. Why did you respond at that point in the text?
3. Why did you respond in the manner you did?

In responding to Question 1, almost all of the teachers revealed a sensitivity to the meaning change characteristics of miscues in determining ones to which they would give feedback. Ignored miscues were explained by such comments as "It didn't change the meaning," "It wasn't an important mistake." Conversely, miscues which were responded to were described as "important," "significant," or "words which would be encountered again in the story." Another interesting phenomena concerning teacher selection of miscues to which they would respond was the perceived degree of teacher activity. This perceived teacher activity factor was clearly related to the ability level of the student and sometimes superseded the meaning change criterion. Teachers working with poor students sometimes explained letting a significant meaning change miscue go by because they felt they had been too active or had been interrupting too much. Teachers working with high ability students sometimes explained their feedback to relatively minor miscues by saying that "they hadn't said anything in a while."

The timing of verbal feedback (when offered) was the focus for the second question posed to the teachers. Delayed feedback was a rare occurrence for most teachers. When feedback was delayed it was usually with a high ability reader and the teachers typically explained their behavior as offering an opportunity for the student to self-correct. Immediate feedback--particularly with the poorer readers--was explained as an effort to help the student before (s)he became very frustrated.

Interesting and consistent explanations for the choice of overt feedback offered were found. Almost all of the teachers used both sustaining and terminal types of feedback. The choice between these two was most often explained in terms of the reader's abilities or behaviors rather than as a function of teacher beliefs. Terminal feedback was associated with poor readers in trouble and explained by such statements as: "I wanted to build up his rate." "We needed to keep up the pace of the lesson." "He doesn't know that word anyway." The choice of sustaining feedback was explained by such statements as: "He can figure out the word with a little help." "He just wasn't paying close attention."

The form of sustaining feedback (in particular, context versus grapho-phonetic prompts) seemed to be, more so than any other behavior, tied to the teacher's belief system. In commenting on these types of prompts, teachers came closest to talking about what they "thought" about reading. Teachers who relied on context emphasized the importance of meaning and comprehension goals. Teachers who relied on grapho-phonetic prompts emphasized decoding. Unfortunately, the relatively few instances of sustaining feedback in the sample reduced the power of the statistical tests to reveal the relationships implied by the teachers' comments.

After listening to and commenting on the tapes, the teachers were asked how they had arrived at the feedback strategies they used in the classroom. Not one teacher reported having been given guidance in either preservice or inservice teacher training programs. All teachers reported that they had arrived at their strategies based on personal experience and a developing sense of what worked best for them. Despite the fact that all of the teachers relied on guided oral reading as a regular part of their program, few felt at all confident that their feedback strategies were as good as

they should be. In the course of the interviews it became clear that most of the teachers had a basic feedback routine (or more precisely a set of routines) which they relied on during guided oral reading. The particular routine used was a function of (1) student or group ability performance characteristics and (2) teacher beliefs about reading. How these two factors interact with one another to produce specific types of behavior during oral reading instruction is unclear at this point.

### Conclusions

It would be easy to conclude that for most teachers there is no strong relationship between teacher beliefs and teacher behaviors. It would be more reasonable based on the findings from the focused interviews, however, to bring to question the notion that we can validly assess beliefs through a paper-pencil type task. At best we are looking at what teachers think they should be doing or how teachers perceive we would like them to respond. At worst, we are artificially forcing teacher beliefs to fit one or another conceptual model for the teaching of reading. Many teachers found the completing of the TORP and PRI instruments a frustrating experience. The most common response to an item was "it depends." That is, beliefs are situational and relate in complex ways to the context of instruction. The data from the focused interviews is far more enlightening with respect to teacher beliefs as they relate to teacher actions than either the TORP or the PRI. Here, there seemed to be clear areas of relationship between teacher beliefs and feedback particularly with respect to timing and form of sustaining feedback. The fact that timing was significantly related to two of the subscales in the PRI suggests that it has strong explanatory power. The fact that the form of sustaining feedback--in particular context versus grapho-phonetic cues--was explained most often in the interviews in

terms of teacher beliefs as they relate to student needs points to another potential tie between conceptions and practice. Hopefully, future research in this area of theoretical orientation will come to focus more on the systematic observations of teachers engaged in situational teaching, complemented by focused interviews. As we grow to better understand the relationship between conceptions of teaching and situational teaching behavior, we will be in a much better position to examine relationships between teacher orientations and pupil learning as well as to embark on enlightened programs of teacher education.

## References

- Austin, M. & Morrison, C. The first R--The Harvard report on reading in elementary schools. New York: Macmillan Co., 1963.
- Barr, R. & Duffy, G. Teacher conceptions of reading: The evolution of a research study. Paper presented at the annual meeting of the American Educational Research Association, Toronto, March, 1978.
- Buik, S., Burke, E. & Duffy, G. Teacher conceptions of reading as they influence instructional decisions and pupil outcomes. Paper presented at the annual conference of the International Reading Association, St. Louis, May, 1980.
- DeFord, D. A validation study of an instrument to determine teachers' theoretical orientation to reading instruction. Unpublished doctoral dissertation, Indiana University, 1978.
- Doyle, W. Making managerial decisions in the classroom. Seventy-eighth Yearbook of the National Society for the Study of Education, Part II: Classroom Management. D. Duke (Ed.) Chicago: The University of Chicago Press, 1979.
- Duffy, G. & Metheny, W. Measuring teachers' beliefs about reading. Paper presented at the National Reading Conference, St. Petersburg, Florida, 1978.
- Duffy, G. & Metheny W. The development of an instrument to measure teacher beliefs about reading. In M. Kamil & A. Moe (Eds.) Twenty-eighth Yearbook of the National Reading Conference. Clemson, South Carolina: National Reading Conference, 1979.
- Goodman, K.S. Reading: A psycholinguistic guessing game. Journal of the Reading Specialist, 1967, 4, 126-135.
- Goodman, Y. & Burke, C. Reading Miscue Inventory Manual: Procedure for diagnosis and evaluation. London, England: Collier and McMillan, 1972.
- Harste, J. & Burke, C. A new hypothesis for reading teacher research: Both the teaching and learning of reading are theoretically based. In P. David Pearson (Ed.) Reading: Theory, Research and Practice. Twenty-sixth Yearbook of the National Reading Conference. Clemson, South Carolina: The National Reading Conference, Inc., 1977, 32-40.
- Hoffman, J. On providing feedback to reading miscues. Reading World, May, 1979, 342-350.



- Hoffman, J.V. & Baker, C.J. Observing communication during oral reading instruction: A critique of past research and a report on the development of a taxonomy of behaviors useful in field-based research. Paper presented at the XXX Annual Conference of the International Communications Society, Acapulco, 1980.
- Hoffman, J.V. & Baker, C.J. Characterizing teacher feedback to student miscues during oral reading instruction. The Reading Teacher, scheduled for publication, Spring, 1981.
- Hoffman, J., Gardner, C. & Clements, R. FORMAS--Feedback to Oral Reading Miscue Analysis System Training Manual. Austin, Texas: The University of Texas Research and Development Center for Teacher Education, 1980.
- Howlett, N. & Weintraub, S. Instructional procedures in R. Calfee and P. Drum (Eds.) Compensatory Reading Instruction. Newark, Del.: International Reading Association, 1979.
- Kamil, M. & Pearson, P. Theory and Practice in Teaching Reading. New York University Educational Quarterly, Winter, 1979, 10-16.

Table 1

Correlations among the TORP and PRI scores

		PRI				
		BASAL	LINEAR SKILLS	INTEREST- BASED	NATURAL LANGUAGE	INTEGRATED CURRICULUM
	TORP	.17	.49**	-.11	-.47**	-.06
MEANS+	74.3	18.5	18.7	23.9	24.7	19.6
STANDARD DEVIATIONS	11.2	4.7	3.8	4.1	3.9	3.7

\*\*  $p < .01$        $N = 35$        $df = 33$

+ These values are expressed as percentages.

Table 2

Correlations Among the Teacher Belief and  
Teacher Feedback Variables

FEEDBACK VARIABLES:	1 No FDBK/LMC	2 WAIT/HMC	3 CONTEXT/SF
TORP	-.01	-.08	-.08
PRI: Basal	-.18	.06	.18
Linear Skills	-.09	.29*	-.02
Interest-Based	-.12	-.16	.14
Natural Language	-.21	-.27*	.06
Integrated Curriculum	.12	-.33*	-.08
MEAN+	65.5	5.0	24.9
STANDARD DEVIATION	31.1	8.9	27.7
N (of teachers)	33	34	33

\*  $p < .05$

+ These values are expressed as percentages.

Feedback Variables:

- 1 = Number of times teacher gave no feedback/number of low meaning change miscues (No FDBK/LMC)
- 2 = Number of times teacher waited longer than 3 seconds/number of high meaning change miscues (WAIT/HMC)
- 3 = Number of times teacher gave contextual cues/number of times teacher gave sustaining feedback (CONTEXT/FS)

I. Miscue

- A. Type: insertions; omissions; hesitations; substitutions; mispronunciations; calls for help; and repetitions.
- B. Meaning change: high and low.
- C. Syntactic acceptability: high; same; and low.
- D. Grapho-phonetic similarity: high and low.

II. Reaction (student's immediate behavior following miscue)

- A. Type: repeated attempt; continuation; immediate self-correction; pause; call for help; and no opportunity.

III. Teacher Verbal Feedback

- A. Type: no verbal; terminal (giving the text word); and sustaining (helping student to identify text word).
- B. Form of sustaining: attending (noncue focusing); simple grapho-phonetic (i.e., grapho-phonetic followed by context); and, complex content (i.e., context followed by grapho-phonetic).
- C. Timing of teacher feedback: immediate (less than 4 seconds); delayed (more than 4 seconds).
- D. Point of teacher feedback: before the next sentence break; at the next sentence break; or after the next sentence break.

IV. Student Verbal Feedback

- A. Type: none; solicited; unsolicited.
- B. Timing: less than 3 seconds; more than 3 seconds.
- C. Point: before the next sentence break; at the next sentence break; after the next sentence break.

- V. Resolution: teacher identified text word; student identified text word; or miscue left unidentified.

Figure 1. Five major clusters of teacher/pupil interactive behaviors.