DEFINITIVE CHARACTERISTICS OF FLUENT READING BEHAVIOR

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To Gene

with loving thanks

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PRESENTATION OF THE PROBLEM

Introduction

Fluent reading is a desired skill level for all readers (Gray, 1956; Kopfstein, 1978; Aulls, 1982). Researchers since 1949 have used the term fluency and/or fluent reading. Numerous investigations have been conducted to identify possible causal links and correlates of reading behavior (Samuels, 1973). The research has noted the criticality of fluent reading as being inescapable due to its strong relation to reading rate and comprehension. Furthermore, the research has strongly suggested that teachers should be made aware of its definitive characteristics and learn how to teach them. However, the research has not yet established a definition of what fluent reading behavior encompasses.

Researchers have suggested that the reader needs to break out of a nonfluent, word-by-word, badly phrased manner of reading because it limits the grasp of content and the pace at which the amounts of reading material that are presented in the course of the education can be processed (Biemiller, 1977-1978). Some researchers

contended that in order to become a fluent reader, the child must develop the skills that will allow him to discern the features of the written language as well as learn how to attend to the meaning carried in the printed message, rather than be halted by the print or the process. In order for appropriate instruction to be developed and designed for the nonfluent reader to acomplish the task of accessing meaning in print, an understanding of what a fluent reader does while reading needs to be determined.

Need for the Study

In the last century, Spencer (1852) pointed out that the more time and attention that was required to receive and to understand a sentence, the less time and attention could be directed to the retention of the idea and the degree to which it could be conceived. Early in this century, Huey (1908) described the reader who fails to understand that reading should be for meaning, as one who reads in an "...unnatural, wooden fashion..." (p. 318). Researchers have explored reading faults such as inadequate phrasing (Clay and Imlach, 1971; Stice, 1978; Kleiman, Winograd, and Humphrey, 1979; Kleiman, 1982; Collins, 1982;, Karlin, 1985;), word-by-word reading (Duffy and Durrell, 1935; Daw, 1938; Lloyd, 1964; Rode, 1974-1975; Biemiller, 1977-1978), and reading rate (Blommers and Lindquist, 1944; Tinker, 1945; Shores and Husbands, 1950; Daves, 1986; and Allen, 1988).

Researchers have taken the position that fluent reading behavior is essential. Gray (1956) held that an important goal in reading instruction was to have children develop the ability to read fluently during both oral and silent reading. Kopfstein (1978) referred to fluent reading as "...the ultimate goal of all reading instruction" (p. 195). Aulls (1982) held that the development of reading fluency was a major stepping stone towards the enhancement of reading comprehension.

In an attempt to classify students' reading behavior practices, Burkhart (1945) conducted a survey of reading specialists to ascertain which factors of reading were considered to be significant reading behavior. The results of the survey indicated that the ability to read rapidly (41%) and the ability to pronounce well and be fluent in reading (54%) were not considered to be highly important. But the survey did establish that correct phrasing and grouping of words were desired reading behaviors.

Mitchell (1978) developed a model of the fluent reader and Aulls (1978) suggested a scale for observing the various stages of reading fluency. Stage seven of Aulls' scale indicated three behavior characteristics: phrase reading, preservation of all punctuation and use of acceptable expression. But these three investigations of fluent reading did not provide a sufficient definition of fluent reading behavior.

Various researchers have approached the remediation

of nonfluent reading behavior by focusing on the subject's reading rate, the level of comprehension of the text, the subject's response to word configuration, the subject's ability to phrase text, as well as a wide variety of unique methodologies of fluency training. These researchers have attempted to provide empirical evidence that fluency is a valuable instructional objective and that instruction in fluency improves overall reading ability (Neville, 1968; Dahl and Samuels, 1974; Martin and Meltzer, 1976; Morgan and Lyon, 1979; Dowhower, 1987). The foundation of LaBerge and Samuels' (1974) argument for automaticity in reading is based on the idea that fluency in reading is desirable. Their study strongly suggested that automaticity is learned through repeated readings.

Johnson (1983) contended that the development of fluency enables the reader to attend to meaning which then leads to increased comprehension, as meaning-getting, which is the purpose of reading. Other research demonstrated the correlation between the various aspects of fluent oral reading and comprehension (e.g. Dearborn, Johnston, and Carmichael, 1949; Clay and Imlach, 1971; Stice, 1978; Kleiman, Winograd, and Humphrey, 1979; Dowhower, 1988).

Aulls (1982) reported that there is no evidence in research to delineate the degree of minimal fluency needed for readers to transfer fluency skills to silent reading. But Schneeberg (1979) maintained that due to the continuous interaction among the literary processes, growth in one

enhances development in another. Powell (1976) supported this when he noted that success in reading has the ability to affect a student's adademic success. Further, Schreiber (1980) suggested that "...identifying the factors that facilitate or hinder progress to reading fluency is socially as well as intellectually significant" (p. 177). Mitchell (1982) held that research in reading needs to identify definitive characteristics of fluent reading in order to specify which reading skills are necessary to develop fluent reading behavior.

Gliessman's (1959-1960) study noted that improper phrasing and word-by-word reading appear to interfere with sentence processing. Lloyd (1964) found that this word-by-word reading places each word into a separate phonological phrase that does not allow the reader to discover the phrasing that the author intended and could hamper accessing the intended meaning. Rode (1974-1975) wrote that this lack of fluent phrasing can be corrected through chunking written language into meaningful units which allows for text comprehension. Biemiller (1977-1978) noted in his study, this "...slow, arduous process.." (p. 226) of reading word-by-word affects the reader's time to such a degree that it could serve as a constraint on the amount of educational material that could be covered.

Tragically, as Allington (1983) has noted, fluency in reading is seldom treated in the classroom because it rarely appears as an instructional objective for disabled readers.

It is not discussed in teacher manuals, or placed in daily lesson plans, or even included in designing either individualized educational plans, or remediation tasks. When teachers become aware of the absence of fluent reading, they often address it by emphasizing the concept of reading with expression (Schreiber, 1980). As some children become aware of the need to read with expression, their attempts at "this kind of oral reading sounds as though someone were trying to read a grocery list four words at a time, and putting in expression not warranted by the disassociated content" (Bond and Tinker, 1973, p. 415). Aulls (1982) noted further that most teachers misdiagnose the problem and conclude that more word identification cues are needed. He pointed out that "this conclusion may in fact be the primary reason a poor reader does not become a fluent reader or does not learn to adequately comprehend material beyond fourth-grade difficulty" (p. 623).

Among this array of postulated reasons and suggested treatments to correct a child's nonfluent reading behavior offered by the literature, Frenzel's (1978) humorous statement appears to address these approaches to resolving the lack of fluency in question: "Contrary to the preachment of some peddlers of panaceas, no one attack is adequate" (p. 627). This lack of direction may be due to the absence of the identification of the specific facets of fluency that most impact the child's reading behavior based upon a meaningful definition of fluent reading.

When evaluating the research that has demonstrated (1) the correlation between fluency and reading rate, (2) the correlation between fluency and comprehension, (3) the fact that disabled readers are seldom appropriately remediated in the classroom for the lack of fluency, (4) that the research has not developed a definition of the term reading fluency, and (5) in order to provide continuity of meaning, it seems that further study is necessary to determine a definition of fluent reading behavior. The definition would serve to provide guidance in developing appropriate instruction and methodology that would most assist the reader in the development of reading fluency.

Purpose of the Study

The research reveals that the terms fluency, fluent reading, and the lack of fluency in reading, are widely used. Each researcher who used or referred to the term(s) in some way, considered it important. Each researcher emphasized different ideas as to which element(s) is/are the critical factor(s) or component(s) in establishing fluency in reading. Therefore, this study was designed to help develop a definition for fluent reading behavior.

Statement of the Problem

This study was designed to survey various professionals who are considered to be experts, based upon their contribution and work in the field of reading, to

assist in developing a definition of reading fluency. Additionally, this study will address these questions:

1. What descriptors of fluent reading behavior are related to the ability to phrase text meaningfully?

2. What descriptors of fluent reading behavior are related to the rate at which text is read?

3. What descriptors of fluent reading behavior are related to the influence of the print of the text?

4. What descriptors of fluent reading behavior are related to instructional techniques?

5. What descriptors of fluent reading behavior are related to comprehension?

6. What descriptors of fluent reading behavior are related to knowledge of word identification skills?

7. What descriptors of fluent reading behavior are related to conceptions about the reading process?

Delimitations

Scope of the Study

This study examined the characteristics of reading that are ascribed to fluency. A questionnaire was mailed to qualified reading experts selected by their recognized contribution to the field of reading.

Assumptions of the Study

It is assumed that the participant's qualifications

are as publicly stated and that indeed they qualify as an expert in the field of reading based upon their qualifications. It is assumed that the persons responding by mail were those to whom the questionnaire was mailed and/or those whose name appears on the data. It is also assumed that the items marked by the respondents represent their qualified expert opinion and that they marked the items accordingly.

Limitations of the Study

This study is limited by the sample of reading experts which participated in the survey. The reading experts who participated in the study were selected to represent the breadth of reading philosophy currently espoused in American education. A different result may have emerged if the survey group had been comprised of other members or if other items had been included in the questionnaire. This study is limited to the opinions of the respondents of the group surveyed and does not include independent verification that students determined to be fluent readers actually exhibit those behaviors.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

This review of the literature on reading fluency focused on oral reading because it is more readily able to be examined. The review revealed that many studies have examined the various aspects of oral reading fluency. These studies tended to fall into these broad categories: aspects that influence text phrasing, including chunking; speed or rate of reading with the related aspect of automaticity; elements of instructional methodology including time allocated for reading, and a variety of methods that suggested different approaches to provide for instruction in developing fluency. There were numerous other studies that are tangentially related to fluency, but this review will include only those that examined factors which may assist in the development of a baseline definition of fluent reading behavior.

Text Phrasing

A wide variety of research has been conducted to explore the effects of text phrasing, and internal and

external punctuation on the flow of reading. Some research has examined the surface structure of the text. Bolinger (1975) noted that although various punctuation marks, capitalization, and text features, such as paragraphing and indentation, serve as general guides to reflect the author's indended inflection in written discourse, "writing never really got around to providing a regular way of marking accent..." (pp. 471-472). Because poor readers frequently fail to develop a sense for sentences (Gleissman 1959-1960), this handicaps their ability to chunk words into meaningful phrases and clauses, which is an essential aspect of comprehending written discourse (Daw, 1938; Fries, 1963; Klieman, 1982). This lack of text information contributes to nonfluent reading for some readers (Klieman, et al, 1979). As a reader is able to attain facility in recognizing those unmarked text elements of written language, the ability to read in larger word phrases develops. Schrieber (1980) viewed this phrase development as a key to improving overall reading response.

Burkhart (1945) found that being able to understand what is being read was considered more important than any other reading skill. Fries (1963) explored this point when he examined the unmarked elements of written language which impinge upon reading fluency. He believed that meaning in written language could be supplied in terms of important sequences of stress, pause and intonation. Clay and Imlach (1971) examined this concept. They analyzed the reading

behavior of 103 seven-and-one-half year old children for the variables of juncture, pitch, and stress, seeking possible effects on oral reading fluency. This sample consisted of 59 boys and 46 girls from one large urban school in Auckland, who were at the same level and were instructed in the same reading method. Twelve of the sample came from non-English speaking homes. Their mean reading age was 7.53 (SD. 1.5 years), which was close to their mean age.

Each subject read from four standard selections taken from story books with the difficulty range from easy to relatively difficult, to allow for a show of the range of reading skill development. The four variables examined for their effect on oral reading fluency were: sequential decoding, sentence structure, sentence length, and special features of story format, such as indentation. Each subject read orally, was tape recorded, and was timed. Four scores were obtained from the tapes: accuracy, rate, juncture, pitch, and stress. Inferior and superior readers were determined by the reading score plus speed score based on the mean reading score of 47.0 (SD. 35.9). Four quartile groups emerged.

The statistical results consistently showed that low or poor readers read less words, had little pitch movement when meeting the end of a phrase or sentence, had stress on every word (4.7 for highest group), and had juncture at 1.3 words (7 words for highest group). These results point to

a sustained or rising pitch so that the motor task of saying the words became the pace for the reading. These children appear to have failed to establish contextual anticipation, the ability to predict ahead in order to increase processing time and the reading span. The authors reported that the consistency of juncture, pitch, and stress were related to the reading of extended discourse, which points to the complexity of the reading process. The study's results also suggested something about how the reader organized his reading. The more time given to the processing of the surface details of print the less chunking of language was occurring, but the study did not explain the nature of that relationship, nor did it provide a definition for fluent reading behavior.

Lloyd (1964) suggested intonation as a means of assisting the child in organizing his reading because it could assist the child in developing phonological phrasing. This would help the child avoid the individual stress per word, as in the word-by-word manner of reading which blocks the grouping of words into meaningful phrases, and thereby hampers the gleaning of most meaning from the reading.

Martin (1972) suggested rhythmic patterns in oral speech as a bridge to developing appropriate phonological phrasing. Stice (1978) felt that if children could translate written language into something that more closely resembled their own oral language, the retrieval of the meaning would be accomplished with greater facilitation.

Stice (1978), in her study, defined intonation as the juncture, stress, and pitch operating within word, phrase, and sentence boundaries. With this in view, a comprehension test of real contrastive stress was developed, field tested, and audio-taped for use with 324 sixth-graders from three middle-schools located in two adjoining north Florida counties. A forty-five minute session was used for the administration of the contrastive stress test. For screening for the study, the subject's score from the Comprehensive Test of Basic Skills, Level 3, Form 1, 1972 edition, for silent reading comprehension was used, if the score was six or less months old. The final sample consisted of 304 sixth-graders with a boy-girl ratio of 50-50 and a black-white ratio of 40-60, respectively.

The application of the Kuder-Richardson (KR-20) test to the 304 scores for the listening test yielded an intra-test reliability coefficient of .92. The sample's total mean for the 304 scores was 50% with the highest raw score for any one child being 63 and the lowest raw score 9. These scores reflected the dialect preference of some members of the sample. The Pearson product moment coefficients of correlation of the two sets of scores reflected a relationship between reading skill and the knowledge of oral intonation. Stice concluded that intonation was a linguistically significant part of language and it was a potential instructional element for assisting the developing reader in learning about his

language.

Kleiman, Winograd, and Humphrey (1979) included intonation, stress, and rhythm in their study of text phrasing. They felt that these elements provided information about the boundaries of phrases and clauses that were not available in written language. They held that these boundaries would aid the child in separating sentences into appropriate meaning units that would eliminate the necessity for the reader to hold the individual words of the sentence in the working memory. They believed that phrasing was not always necessary for comprehension to occur due to the redundancy of syntactic and semantic information or sentence punctuation. Nevertheless, for some readers this may not be enough to prevent comprehension difficulties, especially in an ambiguous sentence such as "I fed her dog biscuits" (p. 3).

The study developed by Kleiman, et al (1979), had a text phrasing and a non-text phrasing set of conditions. They administered the experimental phrasing conditions to two sets of fourth-grade subjects. This grade level was selected because the researchers felt that by fourth-grade level most children were able decoders, but still commonly read in a word-by-word fashion.

The Stanford Diagnostic Test had been administered previously and half of the children were assigned to above average and half to below average reading groups. The above average group had a mean national percentile score of

77.9 (SD. 11.8), and the below average group had a mean score of 29.8 (SD. 15.4). The above average group had 13 boys and 7 girls and the below average group had 11 boys and 9 girls. A separate adult group of 20 community college students established the criteria of word group boundaries by marking the phrase boundaries of the 48 sentences of the contrastive test. A 50 percent criterion of agreement was used to determine the appropriate boundaries for the test items.

In the text-phrased condition, the subjects were orally given the sentence twice from a taped recording with a professional native speaker. The subjects used their copy to read along with the tape on the second reading and marked the phrase boundaries for each item. In the non-text phrased condition, the subjects were given written copies of the sentences that were paired with the oral ones. The children were asked to circle any difficult word and to mark the text phrase boundaries. No difficult words were marked. The analysis of the data was separated into five types of sentence structure to determine which particular position in the sentence needed to be the focal point. The frequency of the phrase element of the text was the focus point of the analysis of the 107 phrase boundaries. The analysis showed that the subjects marked the phrase boundaries more accurately in the text-phrased condition than in the non-text phrased condition, at $p < .001$. There were no other differences of statistical

significance between the two groups at any measurement. These results are consistent with the hypothesis that the absence of phrasing information in text contributes to meaning difficulty for some children.

Collins, (1982) in a related text phrasing study, reported on a two-year study of two school districts, one in inner-city Chicago and the other in California. The focus of the study was the verbal interaction of children in first- and third-grade classrooms. The California study used racially mixed first grade subjects comprising a high-ranked reading group of white students from middle-class backgrounds and a low-ranked reading group of black students from working-class backgrounds.

Analysis of audio-tapes of four reading lessons revealed that different instructional strategies were used with each group. The emphasis on decoding skills was stressed throughout the year, regardless of the difficulty of material, for the low-ranked group. For the high-ranked group, emphasis on comprehension and learning the conventions of expressive intonation was stressed. Samples of reading were taken periodically throughout the school year. Even when the content for both groups was similar, the emphasis remained the same for the respective groups. Text phrasing instruction was provided for the high-ranked group whenever they read in a word-by-word fashion, but the low-ranked group was given more instruction in phonographeme and vocabulary cues in response to their

word-by-word style of reading.

In a Chicago study of third-grade black children, the high-ranked group was relatively prosperous and from a well-educated background, and the low-ranked group was from an unskilled, poorly educated, working-class background. The analysis of the four-month study of the audio-taped samples revealed that the teacher used different questioning strategies with the two groups and less time was spent with the low-ranked group and more importantly, this group had less access to comprehension practice.

The study reflected that due to the individual differences in the text phrasing of the student's responses, a teacher will sometimes tend to respond differently when the response does not match her expectation. The results of these two studies revealed the significance of text phrasing both in reading instruction and in oral language. Children in low-ranked groups were not instructed in the appropriate text phrasing or in aspects of intonation nor was appropriate text phrasing modeled by the teacher in direct instruction settings. Collins argued that the language phrasing difference affects instructional behavior of teachers and ultimately affects the educational outcomes of the students.

Chapman (1979) suggested that the reason some children develop facilitation with reading and other children do not is due to insufficient language competence to handle the complexities of extended discourse. His definition of

fluency included the use of larger text units than letters or words and the use of various types of texts because these more nearly replicate the child's actual educational experience. His study sought to explore the subject's use of anaphora in the use of pronouns in text.

His study was conducted in England with 74 eight-year-old fluent and non-fluent readers, none of which were physically or mentally handicapped. The sample had a mean age of 8.47 years with a mean reading age of 8.64 years based on the Schonell Graded Word Reading Test (GWT), (using revised scoring by Young and Stirton, 1971). Children were placed into groups A or B based upon teacher evaluation of the subject's reading fluency. The placement was confirmed by Schonnel's GWT. Group A had a reading mean age of 9.56 years and Group B had a reading mean age of 7.52 years. The groups were further sub-divided so that there was equivalent reading ability in each sub-group.

Teacher written stories based on primer format were used in a modified cloze procedure with the targeted pronouns omitted. One-half of the subject's copies had the omitted pronuouns supplied at the bottom of the page of text in a random order, and the other half of the subject's copies did not. Subjects wrote the deleted pronoun in the space provided. A thirty-minute time limit was used because speed was considered an important factor in Chapman's definition of fluency.

The inquiry was designed to accommodate unequal

cell frequencies due to the subjects' absences. The data were analyzed with a two-way analysis of variance at p <.001. Mean scores on the seven stories were significant as were the fluency and word conditions. The joint additive of fluency and the word condition was significant but interaction effects were not significant. The results supported the argument that anaphoric elements (specifically the relationship between the pronoun and its antecedent) serve as a major distinguishing factor in the reading performance of fluent and non-fluent readers. Additionally, the results suggested that because text has "...abstract cohesive features..." (p. 411), the perception of these affect reading fluency.

In summary, the researchers (Table I) have examined the impact of text phrasing and its connectedness with reading fluency. All of the studies strongly suggested that the ability to phrase text effectively may be a characteristic of fluent reading behavior. Chapman's definiton may not have considered all the factors that encompass fluent reading behavior. Another aspect of text phrasing which may impact fluent reading behavior is referred to as chunking.

Chunking as an Element of Fluent Reading Behavior

The concept of chunking is supported by a number of researchers: Huey, 1908; Burkhart, 1945; Anderson and

TABLE I

TEXT PHRASING ELEMENTS THAT EFFECT FLUENCY

STUDY	YEAR	TOPIC	FINDINGS
1. CLAY & IMALACH	1971	Text Phrasing	Time given to processing impedes chunking
2. STICE	1978	Text Phrasing	Relationship between reading skills and knowledge of intonation
3. KLEINMAN, WINOGRAD & HUMPHREY	1979	Text Phrasing Instruction	Absence of text phrasing information contributes to word grouping difficulties for some children
4. COLLINS	1982	Text Phrasing Instruction	Not included in lower reading group instruction; affects overall educational outcomes
5. CHAPMAN	1979	Text Elements which Affect Fluency	A major distinguishing factor in reading performance of both fluent and non-fluent readers

Dearborn, 1952; Gray, 1956; Miller, 1956; Bond and Tinker, 1973; Rode, 1974-1975; Golinkoff, 1975-1976; Doehring, 1976; Powell, 1976; Kleiman, et al, 1979; Just and Carpenter, 1980; Schreiber, 1980; Schreiber and Reid, 1980; Aulls, 1982; Collins, 1982; Mitchell, 1982; Snow, 1982; Chapman, 1983; and Zutell, 1988. The ideas suggested by these authors point to a relationship between developing fluent reading through reading in larger text segments and an increase in level of reading comprehension.

Huey (1908) wrote "...the reader's acquirement of ease and power in reading comes through increasing ability to read in larger units" (p. 116). Bond and Tinker (1973) related the clustering of words together for improvement in silent reading and increased speed in reading. Rode (1974-1975) reported that reading in larger word units occurs most naturally around fourth-grade or about ten years of age. Golinkoff (1975-1976) noted chunking as a sign of good comprehenders because it allows them to minimize frequent pauses and avoid word-by-word decoding. Powell stated that when a child is clustering words, he is really clustering his ideas and assimilating them within his knowledge structure. Schreiber (1980) held that chunking allows the child to attain a level of automaticity. Aulls (1982) argued that the inability to chunk material interferes with comprehension strategies. Mitchell (1982) reported that chunking allows the reader to use higher levels of a comprehension taxonomy, such as drawing

inferences, imaging scenes, and appreciation of nuances of meaning. Zutell (1988) referred to chunking as one aspect of fluent reading behavior.

Numerous ideas have been proposed in response to the idea of grouping words into meaningful thought units. Dearborn and Anderson (1937) proposed that this could be developed through the expansion of a subject's size of reading fixation. These authors were not the first to suggest the idea, but they elaborated on the concept through extensive studies of students from elementary grades through college. Using photographic instruments elaborate for their day, they prepared various exercises and methods of modifying eye movements. They attempted to train the movements of the eye when it is reading down a column of print; the reader attempted to keep pace with each new appearing phrase. This style of presentation was similar to the Star Wars-style of presenting line after line of story print with the previous lines still present on the screen but moving to a different line position than the one where it was originally presented. The selections were approximately 2,000 words in length with shorter stories for younger children. The authors felt that with proper training in eye fixations, proper phrasing of words in sentences would develop. This photographic approach reflects the concept of chunking words meaningfully together or a clustering or grouping of words together to enhance meaning.

Another facet of grouping words to aid in building fluency was examined by Resnick (1970). This study investigated the degree of perceptual control necessary for appropriate syntactic units to become evident. Four groups of ten subjects each, from grades three and four, and a group of ten college students participated in separate but similar experiments. The elementary groups viewed text from a screen and attempted to recall words and phrases when the screen blacked out for a measurement of eye-voice span. Each subject read 54 passages, which were tape recorded. The measurements taken included the eye-voice span and a measure of the number of trials on which the subject stopped reading at a phrase boundary. The process was the same for the college students, except for the added condition of perceptual strain created by having to read the slide upside down.

A one-way analysis of variance revealed significance for both measures at $p < .01$ and $p < .05$ respectively. As expected, the elementary subjects under the normal condition did not do as well as the college subjects, whose eye-voice span and the number of stops at phrase boundaries were significantly greater. The scores for the college subjects in the perceptual strain condition were much lower on both measures than their peers in the standard condition. These scores were not significantly different from the elementary groups. As was expected, the elementary grade levels did not differ significantly from

one another.

The results from this study appear to demonstrate that perceptual difficulty significantly reduces the size of the processing unit (i.e., eye-voice span) for skilled readers, and that this affects pausing at the appropriate phrase boundary. The results suggested the need for practice to produce appropriate syntactic units for students that have perceptual difficulty.

Rode (1974-1975) explored the effect of simple grammatical structures on children's oral reading as effected by eye-voice span. The investigation sought to clarify some of the variables that influence decoding of meaning units to determine specific factors that constitute a meaning unit for beginning readers. The sample consisted of 54 subjects, 18 in each of three groups, drawn from third- through fifth-grade classes in a suburban Cleveland, Ohio, metropolitan area. The sample came from average reading groups and had mean chronological ages of 9.25, 10.33, and 11.16 years respectively. Their mean intelligence quotients, as measured by Kuhlman-Anderson were 111 (SD. $\pm$ 7.99); 110 (SD. $\pm$ 9.89); and 113, (SD. $\pm$ 8.93) respectively. The groups were balanced equally with males and females at each grade level.

The experiment consisted of 48 target sentences with three sentences per slide for presentation on a screen that was lit with a light device that had six light-out positions to measure eye-voice span. The light-outs

occurred after the first word in either a noun or verb phrase. After a short training period, each subject read from the screen while the light was on and then reported as many words as he could recall beyond the one he was reading when the light went out. The words that the subjects reported were tape recorded, either a combination or a two-word noun phrase followed by a three-word phrase followed by a three-word verb phrase, or the reverse of this pattern. Scores for all subjects were derived and an eye-voice span was calculated for each subject for each critical light position. A major consideration was whether the type of phrase or syntactic unit could affect the eye-voice span consistently across the age groups.

An analysis of eye-voice spans for the noun and verb phrases indicated that differences in eye-voice span between groups were significant at $p < .01$, with the noun versus verb phrases markedly significant and the eye-voice span for verb phrases considerably constricted. The data reflected in the analysis of this study seem to indicate that older readers chunk a unit of meaning, even though the mean differences for the eye-voice spans were not markedly different for third grade subjects and fifth grade subjects. However, the older subjects' eye-voice span did extend to the syntactic boundary indicating at least a four-word eye-voice span.

An interesting finding was that children attempted to complete the syntactic unit even when they were uncertain

of the correct replication of the visual stimulus. This finding indicates that some readers tend to draw meaning from their reading even when they focused on another task. Some reading errors in the study suggested that subjects were predicting textual content. These factors of reading tend to confirm the previous authors' concepts of chunking as an integral element of comprehension.

In summary, studies (Table II) have explored aspects of the text and its impact on comprehension of meaning. The findings of these studies tended to support the position of phonological processing abilities, i.e. chunking, as a probable characteristic of fluent reading behavior. The findings of the studies appear to suggest that the development of a larger eye-voice span could be helpful in the task of grouping words meaningfully. The results of these studies further suggest that when children are able to group words into meaningful phrase units they are better able to extract meaning from the text. These studies supported Aulls' (1978) position that phrasing is a desired aspect of fluency. Additionally, these studies suggested that students appear to use other reading skills to assist in gaining meaning from the text than phrase units or the chunking of words. This implies that other reading skills are needed in addition to the ability to phrase text meaningfully. It also implies that a fluent reading behavior may include more elements than text phrasing.

TABLE II

CHUNKING AS AN ASPECT OF TEXT PHRASING

STUDY	YEAR	TOPIC	FINDINGS
1. RESNICK	1970	Phrase Perception Control	Perceptual difficulty significantly reduces size of the processing unit
2. RODE	1974-1975	Eye-Voice Span	Older readers cluster words better

Reading Rate as an Element of Fluent Reading Behavior

Huey (1908) posed a question early in this century that researchers have continued to address:

> It is perfectly certain that words are not perceived by a successive recognition of letter after letter, or even by any simultaneous recognition of all the letters as such. By whatever cues the recognition may be set off it is certainly a recognition of word-wholes, except when even these recognition units are subsumed under the recognition of a still larger unit. The only question is as to what parts are especially operative as cues in setting off this recognition (pp. 111-112).

To many researchers, the answer to the question Huey (1908) posed, appeared to be found in the rate or speed at which a child reads. O'Brien (1921) held that a rapid reader is one who had mastered the reading mechanics such that he could concentrate on the author's ideas. Dahl (1974) supported rate when she defined fluency in terms of a rate measure and equated speed of reading with fluency. Golinkoff (1975-1976) called for additional research to examine whether slow decoding rates affected the organization of text and the extraction of meaning. Moyer (1982) suggested that fluency in oral reading primarily involves accuracy and speed. She agreed with Dahl (1974), and LaBerge and Samuels (1974), that "...achieving fluency implies a decrease in errors and an increase in speed" (p. 620). But others (Fries, 1963; Schreiber; 1980 and Allington, 1983) disagree.

Allington (1983) noted that reading speed and fluency are correlated but not the same. In a comprehensive review of the many theories of the development of fluency, Stanovich (1980) lists speed of recognition, "...an independent issue of automaticity" (p. 60), as significant because it quickly gets information into short-term memory which aids the integration of comprehension.

Shores and Husbands (1950) examined the question of speed in reading. They took the position that, in reality, it was the reading material that was a more significant factor in the determination of both the rate of reading and the level of comprehension. They also believed that the purpose for reading highly influenced the rate of comprehension.

The purpose for their investigation was to determine the rate of reading and comprehension in a problem solving situation with elementary children. The sample consisted of a total of 90 fourth-, fifth-, and sixth-grade students, one classroom each, with no specialized grouping being employed. After field testing the procedure on eighteen other students of similar general ability, a passage of approximately 700 words was selected from science text material commonly found in the subjects' grades. Twenty multiple choice questions were developed with a problem solving aspect as the major thrust. Records were made of rate in seconds for actual reading time, working time, and total time.

Coefficients and correlations were developed between rate of reading and comprehension. There was no significant correlation between the original reading time and the comprehension time nor between the working time and the comprehension time. These findings tended to support the position that there is little or no relationship between measures of rate and measures of comprehension.

The findings of this study indicated that some readers may be the fastest readers with some materials and yet with other materials, or purposes, they may even be slower than some of the more inefficient readers. This may even occur because reading is more than the processing of visual information. The study also demonstrated that speed or rate of reading is not a measure of fluent reading behavior because the difficulty of the text impinges on the stage of fluency (Aulls, 1978) and the best readers' rate of reading.

Biemiller (1977-1978) held the view that a child needs to achieve an adequate speed of reading for successful reading achievement. He investigated the speed at which subjects access unrelated letters and words, and simple text across age changes. His study has implications for several aspects of fluent reading behavior in addition to speed. The sample consisted of subjects from three schools: the Laboratory School, Institute of Child Study in Toronto, Canada; the Blythwood Public School in the City of Toronto, and the Rawlinson Public School in the Borough of York. These schools represented a wide variety of backgrounds and

socio-economic status of the sample. Due to the wide variety of abilities and language development, a variety of reading instruction methods were employed. Various children comprised the sample for different years. Adult students and staff from the Institute participated as subjects in the adult sample. The study was conducted from 1969-1975.

A text of 100 words was developed from a story from a first grade basal reader with a second version written using the same words. A list of 50 words was selected from each story by listing every other word in the reverse of the presentation of the written text. The words were then developed into two separate lists by random placement. Additionally, two 50-letter lists were developed by a random selection of all the letters of the alphabet. All subjects were individually tested and cued to not be concerned with mistakes. Reading times were recorded and reading speeds were listed as a mean unit of time per letter or per word. The Metropolitan Achievement Tests (MAT) Primary II, Form B (1963) for the second grade subjects, and the Elementary Form B (1963) and Form G (1970) for third grade subjects were administered. The raw scores were used for the statistical analysis. A reading scale was obtained from the regular group assessment.

The data from this study was analyzed with three methods using an analysis of variance for age, achievement, sex, speed of reading letters, words, and text. For

examination of the reliability and relationships between pairs of variables, the product-moment coefficients of correlation were used. The multiple regression analysis was used to examine the contributions of letter and word speed variances and for the contributions of all three times to the MAT.

The results of these analyses show that four types of changes occur as children become more adept at reading. Children tended to speed up when identifying letters and were able to identify words eventually as readily as identifying letters. They were able to read simple text more rapidly than unrelated words and letters. The girls tended to process text and words more rapidly than unrelated words and letters. The girls tended to process text and words more rapidly than boys. Children and adults tended to be able to process text more rapidly than isolated words, but not significantly. Children who read letters slowly, read words even more slowly. The study did not answer the question as to why the good readers are as fast at identifying letters as words, but did reveal that poor readers require more time to process words than letters. This may mean that the slower children are processing additional features such as graphic stimulus and are accessing less meaning. The greater time requirement leads to less reading for the time invested and in turn may mean less opportunity to practice reading.

Katz and Wicklund (1971) investigated the possible

sources of differences in processing time of good and poor readers using an experiment in word scanning. Forty fifth-grade students were selected and grouped according to their scores on the Iowa Reading Test. The group of twenty good readers had a median score of 58 (range 54 to 97) and the median for the twenty poor readers was 25 (range 1 to 38). Each of the groups were halved such that there was one group at each level for the conditions using the grammatical sentence and one for the non-grammatical condition. Each of the condition groups were further subdivided such that five subjects received set A and the remaining group of five received set B of the condition. The conditions consisted of a set of twenty sentences in two lists with one set being grammatically correct and the other list non-grammatical in that it was a scrambled version of the first set of sentences. Using a tachistoscope, the sentences were presented after a training session similar to the actual experiment. The subjects were presented with a target word and then a sentence and asked to verify if the target word was present. The procedure was timed for speed of response from the presentation of the sentence to the verification of the target word.

An analysis of variance indicated significant effects due to sentence length, reader ability, and response type. Grammaticality did not approach significance nor did any of its interactions, measured at

$p < .01$ and $p < .05$. Both levels of readers produced median latencies that indicated rapid responses. The measurements of response for the two levels of readers were not impacted by the lack of grammaticality. In the two levels, there were no differences in their ability to group, transform, or match words. The difference appears to be possibly elsewhere in the reading process, perhaps in the response to the sentence probe, the decoding response, or in the vocal process of response.

A second study by Katz and Wicklund (1972) investigated the process of speed and letter scanning. Thirty sixth-graders and second-graders were tentatively divided into groups of poor and good readers based on available reading scores from the Iowa reading scores for the sixth-graders and the Ginn scores for the second-graders. The Wide Range Achievement Test reading section was administered to all of the subjects. Subjects were then placed in high and low groups based on the scores of the WRAT. The subjects were given a practice session and then were presented with a series of target letters followed by a group of letters and cued to verify, as rapidly as possible, the presence of the target letter in the group of letters. The responses were timed in milliseconds.

The results of an analysis of variance of the data found that there were significant main effects, response type, and scan length at $p < .001$. As expected, the

sixth-graders were able to utilize a high-speed scan based on the visual information as compared to the second-graders responses. No important differences in positive and negative latencies or in scanning letters were observed between the good and poor readers at their grade levels. The study's results support the theory for visual scanning, in that poor readers have comparable letter recognition skills, but letter recognition may not be what good readers focus on when they are reading fluently because their access to meaning was not diminished due to their lower letter recognition scores.

Perfetti and Hogaboam, (1975) investigated the correlation between comprehension and speed of word identification. They felt that, inasmuch as reading comprehension relies on the highly developed skills, one of which is the ability to convert print into language, there there was a need to examine the decoding capabilities of good and poor comprehenders such that the decoding process could be separated from text comprehension and vocabulary skills. They designed a study that included nonsense words and high and low frequency words because these words would force the reader to use his most skilled word attack strategies for decoding.

The sample consisted of sixty-four students from a parochial school in a predominantly white, Pennsylvania, working-class neighborhood. Thirty-two third-grade subjects (15 boys and 17 girls) were subdivided in groups

subjects (15 boys and 17 girls) were subdivided in groups of eight each and 32 fifth-grade students (12 boys and 20 girls), half of each were placed in the skilled group. Assignments to groups were based on scores on the reading subtest of the Metropolitan Achievement Test. Students with the highest and lowest stanines were excluded from the sample. The highest 16 subjects and the lowest 16 subjects were selected from each grade level to comprise the sample. For the third grade, the lowest group ranked in the 4-26 percentile and the highest group in the 76-91 percentile. The fifth-grade less skilled group ranked 15-30 percentile and the skilled group ranked 60-95 percentile. Subjects overlapped on the Otis-Lennon Mental Ability Test with mean scores for third grade 99-112 and 107-120 for fifth grade.

After a training session the students were cued to say, as quickly as possible, the word that was flashed on the screen. A comprehension test was administered immediately following to determine the child's comprehension of the words. A 2 x 3 factorial design with two replications was used to permit two overlapping analyses with the comparison between words with known meanings and words with unknown meanings.

The study's results supported the authors' hypothesis that skilled comprehenders are able to decode words more quickly than the less skilled comprehenders. Additionally, the skilled readers showed a superiority for decoding nonsense words and low-frequency

words than for high-frequency words, which is to say that for high-frequency words, both grade levels and both skill levels appeared to respond to at nearly the same level of accuracy.

One fact emerged from the experiment in terms of comprehension: vocabulary differences are not the factors that affect fluent decoding. "It may be that the major decoding differences among readers are in the automated utilization of redundant letter sequence as decoding units" (Perfetti and Hogaboam, 1975, p. 468).

Two experiments were conducted by Samuels, Begy, and Chen (1975-1975) to explore the differences in word recognition strategies and word recognition speed. The authors suggested that the skilled or fluent reader was one that could use context and a minimal visual cue as a word recognition strategy. In a midwestern suburban school district in the final month of school, subjects were compared on word recognition speed and ability to generate a word using only partial word cues such as first and last letters and word length. Subjects were selected by classroom teachers on the basis of Metropolitan Achievement Test scores that were a year or more above grade level. The subjects were not evaluated for problems that physically or emotionally might influence their performance in the experiment. A repeated measures 5 x 5 Latin square design was used for the Speed of Word Recognition Test. In this study, each subject was given all five treatments. The

results of the study under all five conditions showed that the better readers had recognition speeds which were faster than the less efficient readers, with significant differences on four of the five conditions at $p < .001$.

The results of the 2 X 3 factorial analysis of variance with repeated measures indicated that more capable readers did significantly better at $p < .001$. According to the authors, an important finding of this study is that better readers are more able to generate a word when supplied with context and partial cues from the target word. The context supplied in this study was limited to matched pairs of words which were placed randomly in all five treatments. It appeared that some memorization by association could have contaminated the results inasmuch as the matched pairs of words were not uncommon pairings, i.e., dark-night, deep-snow, black-cat, soft-pillow (p. 79).

Terry, Samuels, and LaBerge (1976) conducted two experiments to investigate latency in word recognition. Their second experiment investigated how fluent and less fluent readers may differ with word recognition processing strategies. The sample consisted of 20 undergraduate students and 20 fourth-grade students. The fourth-grade subjects were pretested with a tachistoscope a week prior to the experiment to measure their knowledge of the words to be used in the study. Nouns from the previous study were selected after a practice with the procedure using a

different set of nouns. Each subject was given the visual stimulus and asked several questions about what he saw. This procedure continued until the subject could recognize each word correctly twice.

The results of the study revealed that the adults had a 31% partial perception of one or more letters as compared to 14 percent for the children $p < .01$. Even though a slower rate of flash was used with the children to determine their knowledge of the words, the children and the adults processed at the same rate. However, in the conclusion of this study, the authors noted that the adult readers were visually processing information faster.

The implication, in regards to fluent reading behavior however, points to something other than word recognition speed, (i.e., Allington (1983) stated that "...merely learning to recognize words quickly [does] not produce fluent reading" p. 557). But, speed appeared to be a behavior characteristic which is present when students are reading fluently.

The identification process was examined with a speed measure by Perfetti, Finger, and Hogaboam (1978). To test the hypothesis that differences in reading comprehension skills are largely due to differences in knowledge and use of language, and the extent to which this information is automatically accessed, these researchers developed four experiments, using colors, digits, pictures and their associated words, and categories (such as seasons and

animal names).

The sample consisted of 32 third grade subjects, half skilled and half unskilled readers, as measured on the reading subtest of the Metropolitan Achievement Tests, Form H, 1970, administered in the fall semester. The skilled group included 10 girls and 6 boys with a mean reading subtest percentile of 78.44 (SD. 13.92) and a mean IQ, measured by the Otis-Lennon Test of Mental Ability, Elementary Level I, 1967, administered the previous year, of 114.44 (SD. 10.31). The less skilled group included 9 girls and 7 boys with a mean reading sub- test percentile of 15.15 (SD. 12.47) and a mean IQ score of 103.5 (SD. 8.29). Three subjects' IQ scores were not available for this group. Each experiment had a different design and purpose. The comparative results found that only the tasks that required words had significant differences between the skilled and unskilled readers. The number of syllables with words presented adversely affected the less skilled reader. Overall, it appeared that the less demand on the process of identification, the less delay in response. This delay remained to be identified, but the study established that latency differences and name retrieval differences were not major factors. In the use of constraining knowledge, such as in given written words, unskilled readers were able to process equally as well as skilled readers.

Moyer (1982) defined fluency in reading in terms of

accuracy and speed. In their investigation, McCormick and Samuels (1979) investigated this definition of fluency through a measurement on individual words. The sample included 26 second-grade children from a midwestern public school with ages ranging from 6.5 to 8.25 years (7.6 average), and an IQ range of 85-134 (111 average). Selections from the Gray Oral Reading Tests (1969) and selections from the Science Research Associates Achievement Series, grades 1-2, Form D, 1963, were used to develop a series of single word slides of varying lengths (2-9 letters each). These were presented visually in the same order to all of the subjects on a small screen with the time of response measured in tenths of seconds.

The data for the grade levels was analyzed separately and the relationships among comprehension, speed, and accuracy of word recognition were examined using correlation, partial correlation, and regression measures. The Pearson correlation coefficients among accuracy, latency of words accurately recognized, and comprehension were significantly correlated with each other on both grade levels' words at $p < .001$. Accuracy and latency were each significantly correlated with the total comprehension score on both word lists at $p < .006$. The results suggested high accuracy and rapid word recognition to be associated with high comprehension.

Other analyses revealed that when latency was controlled, the association between latency and

comprehension was not significant for the first-grade level word list, but was significant for the second-grade word list. The speed at which second-graders responded to first-grade words suggests that greater familiarity with these words permitted increased accuracy and comprehension, which tends to support LaBerge and Samuels' (1974) theory of automaticity. The word length analysis revealed that for beginning readers the perception unit is small, but more accurate subjects were able to process some larger units than the letter.

In terms of accuracy and speed, as related to comprehension and fluency, this study indicated that accuracy is related to comprehension. It also suggested that fluency of response is related to greater familiarity with the vocabulary presented in the first-grade word list.

In a study similar to Perfetti, Finger, and Hogaboam (1978), Stanovich (1981) added the feature of unrelated letters to investigate whether the ability to discriminate word components in a words-in-isolation context is related to the naming deficit or whether the ability to decode the word structure is the significant difference.

The sample consisted of 22 first-grade children, 10 girls and 12 boys selected from a predominantly middle-class elementary school. After testing in early summer, the teacher ranked the subjects on the basis of their reading ability. The top eleven subjects comprised the skilled group and the bottom eleven, the unskilled

subjects were administered the Reading Subtest Level I of the Wide Range Achievement Test, (WRAT) the Reading subtest (sections A and B, Primary Level 1) of the Stanford Achievement Test, and a short paragraph that was read orally and timed by the experimenter. The mean WRAT score of the skilled readers was 51.9 and the mean WRAT score for the less skilled group was 40.3. The mean grade level scores for the Stanford were 3.1 and 1.6 for the skilled and less skilled groups respectively. Mean times for the paragraph reading were 61.6 seconds and 114.8 seconds for the skilled and less skilled readers respectively. There was little overlap for most scores on all the measures for the groups.

The conditions of the experiment consisted of numbers, drawings, letters, strings of colored X's, and words, presented on slides and times in milliseconds. After practice trials, the subjects were tested individually in a single session in early summer. They were cued to respond as quickly as they identified the object.

The results of the analysis revealed that the highest intercorrelations were between pictures of objects and letters, all very common to the subjects (.84 at $p < .01$). Other analyses of the results suggest that word knowledge, in addition to speed of decoding, is an important determinant of reading skill; that general name retrieval speed does not discriminate between skilled and less skilled readers (at least for this range of investigation); that factors specific to word decoding seem to be a key

determinant; that letter naming is not a significant factor; but that the decoding of multiple letter units appears to be significant.

In summary, the research (Table III) on reading rate demonstrated that speed or rate of reading is a factor in the acquisition of fluent reading behavior. It also suggested that fluency in reading may consist of other elements of reading behavior other than/or in addition to speed of reading. Some researchers have explored the influence of print on reading behavior to ascertain what impact the print itself has on readers.

The Influence of Print on Fluent Reading Behavior

In examining reading rate and its effect on reading behavior, the influence of the print itself has been discussed by numerous researchers: Fries, 1963; Clay and Imlach, 1971; Hoskisson, 1974; Martin and Meltzer, 1976; Biemiller, 1977-1978; Just and Carpenter, 1980; and Smith, 1985. Smith (1985) contended that proficient readers come to rely less on the print and more on what they already know. The opposite point of view was held by Fries (1963) and Just and Carpenter (1980). The "...printed words themselves are usually the best information source the reader has, and they can seldom be entirely replaced by guesses from the preceding context" (Just and Carpenter, 1980, p. 352).

TABLE III

RATE OF READING

STUDY	YEAR	TOPIC	FINDINGS
1. BLOOMER & LINDQUIST	1944	Relationship reading rate and comprehension	Relationship between rate and comprehension
2. TINKER	1945	Relationship between Rate and Comprehension	Comprehension correlates well with level of comprehension
3. SHORES & HUSBANDS	1950	Reading Rate and Comprehension	Little or no relationship in measurement of rate and comprehension rate of reading
4. BIEMILLER	1977-78	Reading Rate and Successful Reading Achievement	Text is processed more rapidly than isolated words
5. KATZ & WICKLUND	1971	Processing Time	Difference not due to lack of grammaticality
6. KATZ & WICKLUND	1972	Reading Rate of Letter Scanning	Poor readers have comparable letter recognition skills
7. PERFETTI & HOGABOAM	1975	Comprehension and Rate of Word Recognition	Skilled readers decode more quickly than less-skilled
8. SAMUELS, BEGY, & CHEN	1975-56	EXP. 1: Word Recogniton Strategies and Word Recognition Rate	Better readers read faster
		EXP. 2: Word Recognition Processing Strategies	Word recognition rate not linked to fluency
9. PERFETTI, FINGER, & HOGABOAM	1978	Relationship of Knowledge and Language use with Comprehension	Word processing more significant for unskilled readers
10. McCORMICK & SAMUELS	1979	Accuracy and Reading Rate	Accuracy & latency factors in high comprehension
11. STANOVICH	1981		Factors specific to word decoding are significant for phonological processing abilities

Biemiller (1977-1978) believed that the best explanation for differences in word recognition speed "...is the failure of poor readers to extract the orthographic structure, relating letters within words, that permit more able readers to reduce the number of features which must be processed" (p. 248) for word identification. Hoskisson (1974) commented that the significance of the print of the text is not fully understood because it is not known what print form the child would naturally select in their development of reading.

Studies have examined aspects of the printed text to determine what the child selects as a point of focus for word identification. Goodman and Burke (1973) conducted an extensive investigation of patterns and reading errors in oral reading for grades two, four, six, eight, and ten from 1966 to 1972. The 94 subjects in this study included black and white students of both sexes who attended urban schools in Michigan. The groups were designated as high, average, and low readers in each of the elementary grades except for grade two. A low-average and a high- average group was designated for grades two and ten. These subjects were assigned to one of seventeen subgroups which consisted of five or six readers each. The subjects within each group were considered to be at comparable reading levels and no attempt was made to control for race or sex. The subgroups did not represent a sample of a large population.

The subjects read a selection of short stories of a

difficult level of reading, such that the task was nearly comparable for all groups. Each subject read orally the selected story and was tape recorded. A researcher also marked reading errors on a a separate copy during the oral reading. The subject was then asked to retell the story and that response was also tape recorded. The errors were analyzed according to Goodman's Taxonomy of Reading Miscues (1965) and coded for the grammatical function of each word and these data stored. A computer analysis of the statistical data was developed and used to analyze the 8,844 errors.

The results of the analysis revealed that readers with high comprehension use the least amount of graphic information. Goodman and Burke (1973) warned against interpreting high levels of proficiency as proof that accuracy was a prerequisite for proficient reading as they believed that proficiency was related to processing information efficiently. Additionally significant is the extensive study revealed no hierarchy of skills in reading development, and beyond the lowest levels of reading, no notable differences in handling graphic cues were found. This is significant in that the use of graphemic cues may be a characteristic of fluent reading behavior.

Doehring (1976) systematically assessed the acquisition of skills for rapid processing of letters, syllables, words, phrases, and sentences. He believed that children tended to process print at their highest level of

capacity corresponding to the stage of reading development that they were in, whether it be letters, syllables, words or sentences, even when the processing could be done in smaller units. "Knowledge of orthographic regularities of letter combinations" (p. 1) may not be a useful tool for the child for about three years. This study represented the first attempt to assess systematically the acquisition of various types of processing skills involved in reading. In order to assess them at the fluent level, he measured speed rather than accuracy.

The sample consisted of 150 Canadian children. Seventy-five boys and 75 girls with 5 girls and 5 boys each in the first and second halves of kindergarten, first-, and second- grade, and during the first half of grades 3-11. The children were selected on teacher recommendation, based on the criteria outlined by the author, (i.e., of normal academic achievement, free from academic, visual, and hearing problems, of normal age for grade level, neither too high nor too low in reading achievement, nor having experienced special emphasis on any one method of reading instruction, p. 6).

The experiment consisted of seven visual matching, seven auditory-visual matching, eleven oral reading, and ten visual scanning subtests and was completed in two sessions of 25 to 35 minutes each. All subjects, on all subtests, were instructed to respond as quickly as possible without making an error and to correct any errors made.

Response speeds and latencies were statistically analyzed by analysis of variance for all grades in which complete data had been obtained for a given task and in which accuracy was sufficiently high on all subtests of this task. Sex differences and grade by sex interactions were not found to be significant. Differences between the first and second sets of material were significant only for auditory-visual matching. There were no consistent practice or fatigue effects operating on the tests with repeated measures. Differences among subtests and among grades and the interactions of subtests and grades were highly significant for all tasks. There was a rather steady decrease in latency scores on all subtests until about grade seven, with no consistent changes thereafter. Despite the somewhat inconsistent grade-by-grade decrease in latency, there were substantive systematic changes in patterns of latency from grade to grade.

Differences between subtests which did not overlap vertically were significant at $p < .05$. Word reading speed appeared to be increased by the semantic-syntactic information in meaningful discourse from first grade on, with the latency for word recognition in meaningful discourse becoming less than letter-reading from second grade on. The information from groups of words as chunked units, can be used to increase the rate of processing print from the first year of formal reading instruction.

The results of this study revealed the quick

development of skills for processing print in the largest and most meaningful unit possible. It was more effective when children branch into sentence processing, than word-by-word processing. It continued to become more efficient with practice over the years of reading instruction and practice. Greater levels of processing may occur in fluent reading because the processing may be directly in terms of ideas rather than sentences. This study did not support LaBerge and Samuels' (1974) theory of automaticity, but it did speak to the development of proficient processing that develops through time which may be a characteristic of fluent reading behavior.

Smith (1976) investigated the impact of print on a three-and-one-half year old boy in familiar environments. Smith selected an outing to a market and a department store in a non-formal setting. Using print associated with these two settings, his brief study suggested that print has a significant impact on a child at the emergent reading level. He noted that the child relied upon associations with print to ascribe meaning to a word as in naming a favorite cereal when shown a similar package. The subject also attempted to decode the print of a sign demonstrating an understanding of an emerging letter/sound awareness.

Cunningham and Cunningham (1978) investigated the question of "...fluent reading proceeding directly from print to meaning..." (p. 116). The study was conducted with 47 fifth- and sixth-graders who read at/or above grade level

and with a group of 14 graduate students. These elementary grade levels were selected because they were considered to be the youngest capable readers. The groups were stratified by random assignment of subjects to one of two groups. One group learned the pronunciation for some nonsense fish names and the other learned the unpronounceable group of nonsense fish names. The fish names were used in an imaginative story about six unusual fish. The stories included the two versions of the nonsense fish names. The resulting two stories contained a "...wanted variable of pronounceable and unpronounceable words and also an unwanted orthographic legality versus illegality" (p. 118). To assist with this last variable, an additional feature was added that taught the subject to associate his set of fish names with drawings of the fish.

After a training period, the child read the fish story assigned to his group. The subjects were cued to read for comprehension and were timed. After completing the reading the subjects were asked to match the fish with particular characteristics. Next, the subjects were presented with word cards with each fish name on a separate card and were asked to match it to the corresponding picture of the fish. Finally, the subjects were shown the cards one at a time and asked what it was. Their responses were categorized as to semantic (description of fish) or acoustic (a pronunciation of the word).

A two-way multivariate analysis of variance with

pronounceable versus unpronounceable as one factor and age as a second factor was used to analyze the differences between the time required to read the passage and the two comprehension variables. The results reflected a significant difference between the groups of words. Other analyses revealed that subjects in the pronounceable group achieved significantly greater recall as measured by the name recall task. Observations during the experiment drew the authors to conclude that, for fluent readers, in the controversy over print to meaning versus print to sound to meaning, there may be a third alternative of "...print to meaning to sound to memory" (p. 120).

In summary, in terms of reading rate as a characteristic of fluent reading behavior, the research (Table IV) suggested that when a reader is able to process print quickly or recognize a word, he is able then to read more fluently and more rapidly due to attending less to the print and more to the meaning. Instant word recognition as an aspect of print processing may be a characteristic of fluent reading behavior. A related facet of instant print processing has been termed automaticity by some researchers.

Automaticity

Automaticity, as it is related to reading rate as a characteristic of fluent reading, is a theory of reading described by LaBerge and Samuels (1974). They defined

TABLE IV

TEXT ELEMENTS WHICH AFFECT FLUENCY

STUDY	YEAR	TOPIC	FINDINGS
1. GOODMAN & BURKE	1973	Relationship of Reading Errors to Comprehension	Readers with high comprehension use the least amount of graphic information
2. SMITH	1976	Text Elements as Related to Learning to Read	Text leads to meaning in repeated exposures
3. DOEHRING	1976	Effects of Text on Reading Rate	Sentence processing more effective than word-by-word processing
4. CUNNINGHAM & CUNNINGHAM	1978	Relationship of Fluency from Print to Meaning	Fluency greater with true words than nonsense words

automaticity as behavior that can be performed without attention being directly given to the activity. Further, these authors believed that without automaticity of word processing, fluent reading could not be occurring. Although this idea did not originate with them, (cf. Spencer, 1852; Huey, 1908), LaBerge and Samuels have explained in detail the subskills of fluent reading that they believed a proficient reader incorporates at an automatic level.

West and Stanovich (1978) (Dahl, 1974; Cunningham, 1979; Spring, Blunden, and Gatheral, 1981; Aulls, 1982; and Mitchell, 1982; Wolf, Bally, and Morris, 1986) explained the functioning of automaticity in the reading act as the process whereby the reader has become fluent by automating certain low-level processes such as letter and word identification to the degree that his attention can be directed towards higher-level functions like comprehension. Frenzel (1978) stated that "...regardless of the complexity [of a reading skill] it must become habitual and an automatic procedure as the child reads independently" (p. 630). In his definition of fluency, Zutell (1988) stated that one of the facets of fluent reading was "...that reading appears fairly effortless, or automatic..." (p. 11).

West and Stanovich (1978), investigated developmental changes that the context of a sentence has as it relates to the automatic word recognition and automatic contextual facilitation. The sample included three clusters of 48

students in grades four and six and at the college level. The elementary groups were predominantly middle class and equally distributed as to sex. The college group had 22 males and 26 females. The mean age for the fourth graders was 9-9 and the mean reading scores on the Wide Range Achievement Tests for the fourth-grade was 9.9 (range of 8.8 to 10.6). The mean age for the sixth-grade was 11-6 with a mean reading score of 7.5 (range of 10.4 to 12.3) as tested on the WRAT. The college students were enrolled in an introductory psychology course and received credit towards course requirements for participating in the study. Their mean age was 20-5 (range of 18 to 32) and a mean reading score of 98 out of a possible 100 on Level 1 of the WRAT.

Three tasks were developed to measure mean times for words in congruous context, words without context, and words in incongruous context. A two-way analysis of variance was performed on the reaction data and age with the results indicating a highly significant effect at $p < .001$. As predicted, the rate at which words were read increased steadily with age. The mean length of time required to read target words was significantly shorter in the congruous context condition than in the no-context condition for the fourth-grade at $p < .001$, and sixth-grade and college students at $p < .005$.

The results of the study supported the fact that better readers make less use of context. The correlational

data suggests that word-reading latencies were less influenced by the congruous context for the skillful readers, as compared to less skillful readers. No developmental trend toward increased use of context was evident in the data but all age groups utilized context to speed processing of the target word.

The results of the analysis of the WRAT scores and the facilitation and interference scores suggest that the less skilled readers used context more than the more skilled readers. This may indicate that the word recognition process of poorer readers is not so automated and is slow enough so that there is time for context to have a facilitating effect. The study gave strong support for the idea that contextual facilitation in these students may be due to automatic activation. Further, the results strongly suggested that automaticity may be a significant characteristic of fluent reading behavior.

Two experiments were designed by Fleisher, Jenkins, and Pany (1979) to investigate the effects on comprehension of increasing the decoding speed of poor readers. Classroom teachers identified seven good readers and eleven poor readers from fourth- and fifth-grade classrooms. The fall scores on the reading subtest of the Metropolitan Achievement Test (1970) were obtained to verify teacher recommendations. A minimum criterion level of 60 percentile was established for the good reader group. Their mean reading level in grade equivalents was 7.45 (SD. 1.90) for

the fourth-grade and 7.47 (SD. 1.51) for the fifth-grade group. The maximum criterion was 40 percentile for the poor reader groups with mean reading levels of 2.62 (SD. .77) and 2.98 (SD. .77) for the respective groups.

The experiment consisted of modified passages of approximately 100 words with a readability level of 7.1 and 6.3 based on the Dale-Chall formula. Word lists of 75 words were arranged in random order, comprehension questions, and a cloze test were prepared from the reading passages. Instruction and testing of the experiment were conducted individually. Students practiced reading the word lists until a 90 words-per-minute criterion was reached. Time and errors were recorded during the criterion check. Students then received the corresponding passage and were cued to comprehension and told that questions would be asked following the reading of the passage. The examiner recorded the errors and corrected those that affected meaning of the passage. Subjects were asked twelve questions about the passage followed by a cloze test supplying answers orally.

A 2 X 2 analysis of variance was performed for each of the seven variables. No significant passage or interaction effects were noted on any of the variables. The results showed that poor readers performed significantly better with training than without training on four measures of oral reading, but did not produce differences on any of the

three comprehension measures. The speed of single word decoding for poor readers was affected by the training in that their speed was brought to the level of the good readers' speed, and to a level significantly higher than the level of the poor readers that had no training. But the results failed to indicate that comprehension performance was facilitated by the decoding training. Although significantly higher reading rates in context were found, rate did not increase comprehension. Poor readers failed to decode better with phrase training, but did significantly better in single word decoding training that appeared to transfer to context reading. It appeared that there was a minimum level of decoding speed that must be achieved before comprehension is affected positively.

A second experiment was conducted as a replication of the first, but with several changes. The decoding was continued until the poor readers could either match or exceed the levels attained by good readers and the subjects were not overtly timed during the reading of the passage, but the timing was determined later by replaying the tape of the original reading. Additionally, an emphasis on phrase reading rather than on single word decoding was included because it was thought to affect decoding speed in context. In an effort to achieve a more sensitive measure of reading comprehension, a story retell measure was added.

The subjects included nine fourth-grade and two fifth-grade good readers and 27 fourth-grade and six fifth-grade

poor readers. Good and poor readers were distinguished by their scores on the MAT and on a 127 word passage especially developed for the experiment. All subjects read a word list that corresponded to the screening passage, read the passage, then completed a cloze test on the passage. The criterion for the good and poor readers was established through the use of the word list, the passage, and the cloze test over the passage. The experiment used two passages modified from experiment 1 with the readability established with the Dale-Chall grade equivalents. The groups were randomly assigned to training or no-training groups. A posttesting procedure was conducted and measurements were taken.

The ANOVAs computed for each of the six variables indicated significant differences on all dependent variables at $p < .001$. Newman-Kuels tests were calculated to identify differences between groups. The results revealed some differences at $p < .05$. Several facts emerged from the two studies: 1) the untrained groups had highly similar single word decoding rates, but differed in context rates, 2) although the differences between poor reader groups, in context decoding, did not reach a level of significance, there was a trend that favored the groups that received training, 3) untrained poor readers appeared to benefit from context to the same degree as did good readers (experiment 2 only), and 4) trained poor readers

who achieved comparable single decoding rates of good readers, did not gain with additional context, which may reflect that they are reading context in the same manner as when reading single words. Additionally, the practice of words in isolation was successful in raising the level of poor readers' decoding speed to one comparable to that of better readers, but the comprehension scores remained unaffected.

Spring, Blunden, and Gatheral (1981) developed a study similar to Fleisher, Jenkins, and Pany (1979), but it was not intended as a replication or an extension of that study. The purpose of this study was to determine if training in automaticity aimed at decreasing whole-word reading latencies for a specific set of words, would facilitate the comprehension of a text composed students were screened as Ginn-720 reading series. The subjects were randomly assigned to experimental and control treatments with sex matched across all treatments.

The treatments consisted of individual training for one group in automaticity using randomly ordered word lists from two lengthy reading selections. This training was timed and a baseline was established, then the comprehension test in the modified cloze format was given after the automaticity training. Control subjects did not have automaticity training.

A 2 X 2 analysis of variance was used and no main

effects were yielded from a preliminary analysis for sex, therefore, the data for boys and girls were combined. In the training to automaticity phase, the experimental groupimproved two-tenths per second per word across six trials. The greatest improvement appeared to diminish after three to five trials. The study failed to find support for the hypothesis of automaticity and was in agreement with the results reported by Fleisher, Jenkins, and Pany (1979). This study failed to demonstrate the theory that a decrease in word-decoding latency will in itself improve comprehension, which may in turn, be linked to phonetic processing skills.

In summary, these studies (Table V) explored the aspect of automaticity as a means to assist students in achieving greater facilitation in reading. Most of the studies reflected a positive result using the repeated reading method. The study by Spring, Blunden, and Gatheral (1981) indicated minimal gain in automaticity using word lists. Although the results of the studies taken as a whole reflected mixed results, the majority of the findings supported the concept of instant word recognition as a facilitator for ease of reading. These findings appeared to indicate that automaticity in word recognition is a skill that more capable readers have and use. Further, these studies suggested that having and using a large, instant-word recognition vocabulary may be a characteristic

TABLE V

AUTOMATICITY

STUDY	YEAR	TOPIC	FINDINGS
1. WEST & STANOVICH	1978	Relationship of sentence structure with automaticity of word recognition and contextual facilitation	Better readers make less use of context and more use of word recognition
2. FLEISHER, JENKINS, & PANY	1979	EXP. 1: Relationship of comprehension with decoding rate	Training did not produce differences on comprehension measures; comprehension not facilitated by decoding; phrase training did not increase decoding skill
		EXP. 2: Phrase reading as related to decoding rate and comprehension	No gain with additional context may reflect word-by-word pattern of reading
3. SPRING, BLUNDEN, & GATHERAL	1981	Relationship in training in automaticity of word lists facilitates comprehension of extended discourse using same words	Failed to substantiate theory that decreased word latency improves comprehension

of fluent reading behavior.

The Influence of Instruction in the Development of Fluent Reading Behavior

Time Allocated for the Reading Task

The allotment of time for reading has been examined as a possible factor in the development of fluent reading. Huey (1908) wrote that "...the best way for the child to become familiar with them [the words] is by much reading" (p. 293). In a variety of studies, numerous authors have continued to support Huey's statement. Mackworth (1972) held that because a poor reader read less, "...often very much less, and so never builds up the highly over-learned associations that predict probabilities" (p. 720). Hoskisson and Krohm (1975) stated emphatically, "Pupils need practice in reading!" (p. 835). Powell (1976) connected the time element with repeated readings and reported that for automatization, the number of repetitions needed is "...probably larger than most people currently believe" (p. 12). Allington (1977) has continued to state that in order for a poor reader to "...develop the ability to read fluently, it requires the opportunity to read" (p. 58), especially if the reader is going to "...develop traits associated with good reading, particularly fluent and rapid oral reading" (p. 60). Biemiller, (1977-1978) reported that poor readers receive too small amounts of

actual reading practice "...which in turn reduces opportunities both for extracting intraword structure and possibly for increasing general identification speed" (p. 250). Anderson (1981) concluded that in regards to skill-oriented reading programs, reading practice may need to be included to build fluency. Spring, Blunden, and Gatheral (1981) affirmed that "...automatic phonetic processing could only be achieved after much more extensive practice in reading meaningful text" (p. 785).

Hunt (1970) and McCracken (1971) proposed two similar concepts to provide students with more time to read during class time. Hunt called his idea the Uninterrupted Sustained Silent Reading (USSR). McCracken modified this title to Sustained Silent Reading (SSR). Both of these concepts seek to provide uninterrupted reading times of 20 to 30 minutes per day in the classroom setting for the students to practice silently reading material of their choice and interest. As this program has been in use in children's reading programs, children's attitudes and appreciation of reading have modified positively, especially for those children who have experienced reading as an unpleasant and unrewarding task. McCracken (1971) stated that wherever SSR was introduced, it was reported "...unanimously that SSR works and that it worked almost instantaneously once it was initiated" (p. 525).

Allington (1980) examined the amount of actual reading

of connected discourse, orally or silently, that was assigned during classroom reading instruction. The number of words children read in good and poor reading groups were compared to identify whether the amount of actual reading would vary even though the time allocated for the reading instructional time was relatively identical. Twenty-four first- and second-grade teachers from four school districts were observed during instruction of both their good and poor reader groups. Notations of the number of pages read or an audio-tape recording of the reading instructional sessions were made, and the number of words read by students during this instructional period were computed.

The results of an analysis of variance on the mean number of words read by students in both groups was statistically significant at $p < .01$, with the good reader group reading more than twice as many words per seesion as the poor reader group. Other observations noted that the instruction which the poor group received was much different than the instruction received by the good reader group. It is evident that youngsters will "...not learn what they are not taught and will never equal the learning rate of better readers if they proceed at half the pace" p. 875).

In summary, the amount of time provided for reading instruction is significant. Allington's (1980) findings were similar to what Collins (1982) found. The research

of LaBerge and Samuels (1974) supported the concept of time on task as a factor in developing reading skills for fluent reading. It may well be that one factor which affects the development of fluent reading behavior is the opportunity to read more.

Instructional Methodologies to Develop Fluent Reading Behavior

A vast array of studies have been conducted throughout the years in regard to understanding and exploring methods that may enhance a reader's skills in processing the written language. Some additional articles have explored ideas and concepts, such as Johnson, Johnson, and Kerfoot's (1972) Massive Oral Decoding 59 Technique, which was an intensive treatment to assist children with reading difficulties to internalize decoding skills. These authors felt that "adequate comprehension can be attained only when fluency of decoding provides children with the same fullness of meanings which they would receive if the material had been read to them" (p. 422). Other researchers used computers to assist the instruction (Carbo, 1978; Reitsma, 1988). The most common element of the studies in direct instruction is the modeling of fluent oral reading.

Teacher Modeling

Methods of direct instruction in fluent reading

that have incorporated teacher modeling have been widely investigated in the research. The methods include echoic reading, assisted reading, impress or neurological-impress reading, listening while reading, read-along-together, (i.e. either with someone or with a prepared tape recording), and paired reading.

Daw (1938) designed an investigation to determine to what extent the reading difficulties of the primary grades persist in in grades four and five. One-hundred students in fourth- and fifth-grade were surveyed under natural classroom conditions using the eighteen difficulties that were listed in the study conducted by Duffy and Durrell (1935).

The results of the survey revealed that inadequate phrasing and lack of expression were among the five errors which were the most frequently observed in the classrooms. The lack of phrasing seemed to be due to the student's inability to recognize small phrases and to identify longer phrases and clauses. This appeared to affect the child's interest level and comprehension. Daw (1938) suggested that teachers model appropriate phrasing and encourage practice periods in an effort to transfer the practice to the daily oral reading. D. D. Smith (1979) designed two experiments to evaluate the effect of the teacher modeling fluent reading based on speed , (at a rate of 100 words-per-minute) for three disabled readers in learning disability classes. In the first experiment the subjects

were two eight-year-old children. A baseline reading rate was established for each of the subjects. The treatment consisted of the teacher modeling fluent reading for one-minute followed by the child reading for an allotted time, beginning in the text where the adult had stopped. The results of a post-evaluation revealed that both children benefitted from the treatment as evaluated by a decreased number of errors and an increased number of words read correctly in one-minute.

A second experiment was similar, but differed in the addition of four other conditions. The results of the modeling plus error correction plus previewing the story, revealed the greatest decrease in errors and the greatest increase of words read correctly per minute. The results of these experiments supported the importance of fluent modeling with nonfluent readers as well as the importance of establishing a background for the text prior to reading.

Neville (1968), (based on Gliessman's (1959-1960) and Lloyd's (1964) suggestions that intonation patterns helped the young reader to unify words into thought units), developed an experiment with 96 first-grade subjects from one large school in Canada. The purpose of the study was to investigate the affect of echoic response before silent reading and its effect on word recognition, comprehension, fluency, and vocalization.

The subjects ages ranged from 5-8 to 6-8 with none having learned to read before entering school. The

Pinter-Cunningham Primary General Ability Test Verbal Series, Form A; the Harrison-Stroud Reading Readiness Profiles, Auditory Subtests 4 and 5; and the Murphy-Durrell Reading Readiness Analysis learning rate subtest were administered to the children. The scores from these three tests were converted to z scores with their total used as a composite score. The subjects were then assigned to groups on the basis of their gender and their composite z score being above or below the median composite score. Each group had 16 students. Three training modes were selected for use before silent reading: silent (no oral response), oral (oral response), and echoic response (teacher oral modeling).

A three-factor Lindquist Type III analysis of variance was used for the main analysis with a required level of significance of $p < .05$, except for the test of homogeneity which was raised to $p < .025$. The results of the analysis revealed that both groups that had the oral response and the teacher oral model were superior in the fluency of their reading when compared to the silent or no oral response group. Improvement in fluency failed to improve other reading skills, particularly comprehension, but part of the difficulty was due to the means with which the base reading level of the subjects was determined in comprehension and fluency. Also, the fact that the subjects were at the beginning stage of reading development affected the results in relationship to

comprehension gains.

A variation of the echoic reading method developed by Heckelman (1962) was called the neurological-impress method. He first began to use it in 1952 with a teenage girl reading at the third-grade level. In this case study, he read in unison with her for a total of twelve hours over a period of three months, with each session one hour in length. The results demonstrated a three-grade level improvement.

In 1962, this method was attempted with 24 high school students whose grade levels ranged from 7.0 to 10.0, and who were reading at least three years below the actual grade expectancy. The subjects had IQ scores of 90 or above on the Wechsler Intelligence Scale for Children and there were no known disorders or organic brain damage or severe functional personality problems. The Bender Visual-Motor Gestalt, the California Test of Personality, Intermediate Form, and the Gilmore Oral Reading Test were administered to these subjects. The subjects were divided into eight groups according to reading grade level.

The seven and one-fourth hours of instruction consisted of the instructor and the student reading selected material orally in unison. The instructor would read at a slightly faster pace than the student and they would reread the passage several times until a fluent normal pattern was established. The repeated readings did not continue past the first few sessions. The student was not corrected when

The instructor also cued the subject by using his finger in a sliding motion under the words being read.

The results of this study showed a dramatic increase in one case (5.9 grade levels) and overall the group had a mean increase of 1.9 grade levels. These gains were significant both at $p < .001$ and $p < .005$.

Hollingsworth (1978) implemented a variation of the neurological-impress method by introducing an EFI Multi-Channel Wireless Language System, which allowed the child to hear his own voice in the place of the other reader. Twenty fourth-, fifth-, and sixth-grade children were randomly selected to participate in the investigation. Their IQs ranged from 79 to 128 on the Peabody Picture Vocabulary Test. The Gates-McGinitie Reading Test Survey D, Form 1, was administered as a pretest. The subjects listened to a variety of tapes each approximately 12 to 15 minutes long and read into the microphone of the wireless. They could hear the recorded voice as well as their own. A control group continued with the regular classroom program and had the same amount of reading instruction time as the experimental group.

An analysis of covariance was conducted. The results revealed a significant difference at $p < .05$ between the two groups as measured by the Gates- McGinitie, Form 2 posttest. The experimental group's mean score reflected one-year's progress in one semester compared to the control group of .04 mean score during the same length of time.

In several articles and studies, Hoskisson (1974, 1975, 1979) outlines assisted reading and its application to classroom and family settings. The basic assumption of assisted reading is that children are able to process written language in much the same way they process oral language. Assisted reading appears to be a more natural extension of what parents already do, which is read to their children. Its implementation in elementary settings produced a "...smoother, more fluent pace for reading by listening to the taped reading of the teacher" (Hosskisson and Krohm, 1974, p. 834).

In individual case studies, Hoskisson (1974) described the results of several children's encounters with assisted reading. One four-year old boy after one year of assisted reading was measured at high second-grade on the Stanford Achievement Test, Primary I Battery (SAT). Two other children, ages seven and nine, in separate studies, had assisted reading implemented at home because the children had marked accents and refused to participate in reading at school. At the end of the sessions, the children's oral reading rate was assessed and an error analysis was done. The SAT was given in pre- and posttesting sessions.

The results revealed that the nine-year old boy showed gains in word recognition, paragraph meaning and vocabulary. The error analysis reflected more correction of errors, less errors at the end of the study, and more of the errors were similar graphically or aurally. His

reading rate had also improved.

The seven-year old girl's error analysis reflected noincrease in self-correction, but most errors did not distort meaning and were graphically or aurally similar. The percentage of errors decreased throughout the duration of the study. Her reading rate increased and her SAT scores reflected gain from pre- to posttesting.

Read-Along Methods. Hoskisson and Krohm (1975) investigated a classroom application, which they called "reading by immersion." The subjects were a second-grade class that had been placed in a basal text program. Children used tape recorders to listen to taped read-along stories that were on or just above their reading level as determined by the particular basal text they had been assigned. The evaluation of the program revealed that best results occurred when the modeled taped-reading was paced to match the level of fluency of the student.

Neville and Pugh (1978) investigated the reading while listening method that is similar to the assisted reading of Hoskisson (1974). The sample consisted of two groups of twelve children labeled P and B which were matched to a control group. Group P had eight boys and four girls with reading ages of 8-1 to 8-7 (mean of 8-4). Group B had twelve subjects with five boys and seven girls with reading ages of 9-2 to 10-1 (mean 9-5). These two groups of subjects were screened from 160 new first-year students

with the GAP Reading Test; a cloze test which had been used previously. The sample came from an industrial city in the north of England and were mainly from lower middle-class home of predominantly European origin. The study was 18 months long.

During a period of training, the groups received two training sessions per week for eight weeks in both terms of the school year. A new story was covered in the first session, or part of the story was introduced while the subjects looked at their books. A tape recording was used and the subjects followed along in the written copies. During the second session, a repeat of the story was listened to and some follow-up activities were available.

The subjects were posttested and the results revealed that the improvement in the scores on the GAP seemed to suggest that the reading while listening was as effective as other intensive teaching activities using tapes and texts. The one group that had one more additional session per week than the group that did not, seemed to benefit more. The authors concluded that the listening while reading may be of assistance to students who are "...at a critical point in the development of fluency in reading (p. 49).

Schneeberg (1977) evaluated a four-year listening-while-reading program that she conducted in Philadelphia with five inner-city schools using two groups of students who had been exposed to the listening-while-reading

activity for several years. Grades three and four read 70-80 books and grades one and two read 30-50 books. The method used teacher- prepared tapes that ran about ten to twenty minutes and were used in conjunction with the book read on the tape. Children self-selected the book, listened to the companion tape and matched words in print with words on tape. The teacher led a discussion or a writing activity followed the reading.

The results of the study revealed that the group withthe longest exposure to listening-while-reading had a gain of 13 percentile points as measured by the California Achievement Test, 1970 edition. Other changes observed were in the affective domain, i.e., as attitudes about reading and about themselves as a reader were significantly more positive.

Chomsky (1978) investigated a method similar to Huey's (1908) imitative method of teaching reading that she called the "...memorization of a text" (p. 289). The sample consisted of five third-grade students, three boys and two girls of normal intelligence and with no apparent speech or language problems. All the subjects were reading about one to two years below grade level. The children were evaluated on the Metropolitan Achievement Test, the Wide Range Achievement Test, the Gates-McKillop Diagnostic Tests, and the Durrell Analysis of Reading Difficulty, with pre- and posttested measures on all the tests. The study attempted to increase fluent reading in slow readers who

who had been selected on the basis of their level of reading development. The procedure used the process of memorizing a book through the use of repeated listenings with the aid of a tape recorder (with ear-phones) and a copy of the book. The children were instructed to listen and read along on a daily basis until oral reading fluency was achieved for that book. The child reread any part of the book he felt unsure of or that he wanted to hear again. The children then read for the experimenter from the book that they had repeatedly practiced reading on their own.

The results revealed that there were marked changes in attitudes about reading and some of the children began to choose reading as an elective activity for free time in the classroom. Less and less analytical assistance was required from week to week during the follow-up period. Also, writing began to be used as an activity by the children. The results of the study reflects that this method of memorization may assist some children who are experiencing difficulty in reading.

Morgan and Lyon (1979) investigated a method similar to the read-along-together methods, called paired reading. This was designed to meet two basic criteria of flexibility and capacity to adapt to the the changing needs of individual children's reading performance and simple enough that it required a minimum of supervision and training.

A small pilot study was conducted with four children, three boys and one girl, ages 8-3 to 11-1 with a reading

age range of 7-0 to 8-1. The children's mothers served as the modeling, reinforcing adult. The material consisted of previously unread 100 word passages from the child's text. After 12 to 13 weeks of 57 to 78 sessions, an evaluation of the effectiveness of the tutoring was done using the Neale Analysis of Reading Ability scores during pre- and posttesting.

The results revealed that with the tutoring, all four children progressed in both reading accuracy and comprehension scores. The group averaged 11.75 months progress in 6.25 months of tutoring in reading. This small pilot study may not constitute definite evidence, but it does indicate that paired reading can be helpful for some children experiencing difficulty in reading at their grade level.

In summary, the various methods of instruction (Table VI) in fluency training demonstrated the value of an adequate behavior model whether it be a teacher in a classroom setting or a parent in the home. These studies further suggested that fluency can be developed in the reader and that non-fluent reading behavior can be corrected. One method that has drawn the attention of many researchers in recent years is the methodology of repeated reading to correct non-fluent reading behavior.

TABLE VI

EFFECTS OF INSTRUCTIONAL TECHNIQUES ON READING FLUENCY

STUDY	YEAR	TOPIC	FINDINGS
1. ALLINGTON	1980	Time a Factor in Developing Reading Fluency	Poor reader groups read less (by half) than better reading group
2. SMITH, D.D.	1979	Individualized	Modeling and previewing story assists reader in decreasing reading errors
3. NEVILLE	1968	Echoic Reading	Superior in fluency; but failed to affect comprehension
4. HECKELMAN	1962	Neurological-Impress Method	Significant improvement in limited time frame
		EXP. 2: Neurological-Impress Method with Finger Highlighting	Significant improvement
5. HOLLINGSWORTH	1978	Neurological-Impress with Audio Equipment Feedback	Significant improvement
6. HOSKISSON	1974-75, 1979	Assisted Reading	Significant gains
7. HOSKISSON & KROHN	1975	Reading by Immersion	Significant gains
8. NEVILLE & PUGH	1978	Audio-Assisted Reading/Listening	Useful at a critical point in the development of fluency in reading
9. SCHNEEBERG	1977	Audio-Assisted Reading Using Teacher-Prepared Tapes	Most substantial gain for students with longest treatment; influenced attitudes about self and about reading
10. CHOMSKY	1978	Memorization of Text through Repeated Readings	Influenced children's attitudes about reading; able to read text without aid; influenced writing
11. MORGAN & LYON	1979	Paired-Readings	Good gain in both reading accuracy and comprehension

Repeated Reading Method

The idea that one does better at the later trial is not a new concept in how children learn. Goldscheider and Muller (1893) stated that we perceive better because of the habit of memory or as Huey (1908) reported, "...we perceive better at the later trial" (p. 105). In recent decades, researchers have focused on the use of repeated reading to aid children's reading perceptions. Since the appearance of LaBerge and Samuels' theory of automaticity in 1974, a number of studies have been conducted to investigate its application to reading processes, specifically repeated reading and its affect on nonfluent readers.

Smith's (1976) study (cited earlier in the review of the literature in relationship to print), found also, that with repeated exposure to the same words in the same form (i.e., color, style, size, etc.), children learn to attach the same meaning to those repeated representations. The findings of this study supported the hypothesis that fluent reading of words may develop from repeated exposure to the same word form.

Christensen (1974) evaluated the errors of second-grade students on repeated passages at the instructional and frustrational levels. The 19 subjects were from parochial and public schools and were reading within a year and a half of the 2.5 reading level. The screening was with the McCracken Standard Reading Inventory. Stories from the

Stuever Reading Test (1960) were selected and a B-R-S Error Analysis was used to evaluate the subjects' reading errors. Each subject read the four stories and errors were recorded. The subjects were cued to read as well as possible. The errors were analyzed according to the B-S-R Error Analysis at $p < .05$.

The results revealed that the only significant change from the rereadings was in the area of refusal to read a word. The error pattern (subdivided into 21 major and minor categories) was stable across all four readings. She suggested one silent reading at the instructional level, rather than just the oral reading. The results indicated an increased rate with two readings, more fluent reading occurring, even when the amount and kind of error had not changed.

Gonzales (1974) in a similar design and methodology of study using third-grade students at the developmental reading level, found that the repeated reading of a passage at frustration level had diminished errors sufficient to suggest that an 89 percent level of word recognition could be acceptable for instructional level material. His subjects were no more than three-fourths of a year above or below the 3.5 reading level. The McCracken Standard Reading Inventory was used as a screening test for the sample. Selections from Stuever Reading Test were used for the experiment and the B-S-R Error Analysis was used to evaluate the subjects' reading errors from the rereadings

of the extended passages. A repeated measures design utilizing a t-test for dependent means was used to determine the significance of the difference between the two readings.

The results of the analysis of the data revealed that the second reading at the frustrational level was not significantly different than the first reading at instructional level. The results suggested that more difficult or unfamiliar material can be used for developmental readers with repeated reading as an aid. It further suggests that fluent reading behavior is enhanced with the use of repeated readings.

Dahl (1974) investigated high speed word recognition through training in sophisticated decoding strategies, that is, teaching students to use minimal visual information while making the most use of context cues. The sample consisted of thirty-two second-graders from a middle-class suburban elementary school who were considered the poorest readers in the regular reading program. After training in a modified cloze procedure, they were presented with the experiment materials of isolated words and given repeated reading training practice beyond accuracy. One-hundred word passages were used and the errors were recorded across all readings. Four conditions were presented and data were analyzed in a 3-way analysis of variance.

The results suggested that children practiced in hypothesis/test procedures achieved significantly better

on eight of the twelve variables. The analysis of repeated reading procedures suggested that what was beneficial in the training was the missing reading practice for beginning readers.

Neill (1980) used the repeated reading method to assist students in decreasing their reading time and errors. He provided feedback for the students by charting their progress across several readings of 100 to 200 word passages from basal readers. The results were positive for the disabled secondary students.

Carver and Hoffman (1981) used a computer format to practice repeated readings with high school students who were poor readers. Two separate studies were conducted after students were given training on the computer terminal and program. The subjects were screened with the National Reading Standards (NRS) Form 3A, with a criterion base of less than seventh grade level of reading ability. Six students participated in the first study (3 boys and 3 girls) with a 4-6 level of reading. Passages for each grade level with a readability of 2-9 were randomly selected making a total of 80 passages. Two sets were selected and designed to avoid overlap. In a cloze-like procedure, the student's task was to select the left word or the right word to fit the context of the sentence for every fifth word of the passage. Rate and accuracy were recorded and a rate of good reading was computed.

A second study replicated the first using 28

students. The results of both studies suggested that students with reading difficulty would gain proficiency with practice.

Herman (1985) investigated the effects of repeated readings with eight intermediate-grade students from a large midwestern inner-city elementary school. The students were attending a combination remedial reading and remedial math lab with reading taught two out of four days. The subjects were less able, nonfluent readers. Using material from New Practice Readers or Reading for Concepts that had been tape recorded, the subjects read between 35-50 words per minute and scored the lowest in the total reading achievement on the Metropolitan Achievement Tests. The students practiced reading the self-selected material from their assigned text and were tape recorded while reading as quickly as they could. A words per minute score was calculated and recorded with the goal of 85 words per minute as the target. A time X treatment within subjects design was used with a comparison wise alpha level at $p < .05$.

The results found that the rate increased significantly within the practiced story and between the first and final story readings. The record of pauses were significantly less within stories and the errors dropped significantly from story to story. The key factor appeared to be in the identification of students that will benefit from "...repeated readings: the least fluent, less able

readers" (p. 563).

O'Shea, Sindlar, and O'Shea (1985) in a review of the effects of repeated reading on fluency and comprehension, noted that fluency increases when comprehension cues are combined with repeated readings. This seemed to suggest that a student benefited most when attending to the meaning of the passage rather than the process of reading it. With repeated reading, the rate at which a student is able to read and the fluency in which he reads, improved. "The most important general implication that emerges from these results is that both repeated reading and attentional focus are effective means for increasing fluency and comprehension" (p. 140).

Dowhower (1986) in a study with second-grade subjects, stated that "...in most repeated reading studies, investigators have operationally defined fluency as the ability to read quickly and correctly" (p. 4). Although fluency appears in her title, she did not offer an additional definition. Her study investigated the effects of aided and unaided repeated readings focusing on the effects of practice on reading errors and comprehension.

The subjects in the study were second-graders from two large urban Wisconsin school districts. Using Chall's (1983) description for transitional readers, the subjects were screened by reading rate, word identification accuracy, and by stanine score on the Sequential Test of Educational Progress. A time-series experimental design

was used for each of the training conditions.

The results of the practice effect on each group showed gains in terms of mean scores from pretest to posttest at $p < .05$. The study explored within-, across-, and story transfer-effects of repeated reading with significant gains reported in across-story transfer. Subjects also demonstrated gains in their ability to text phrase efficiently. The study supported the value of repeated reading, but suggested that it be used only when warranted.

In summary, the studies on repeated reading (Table VII) suggested that readers benefit from the repeated reading techniques that were investigated by these researchers. They demonstrated that with practice subjects gain fluency in reading discourse, but they did not provide a complete definitive definition of fluent reading behavior.

Summary

The review of the literature contained in this chapter demonstrated that fluent reading behavior has been widely examined in one facet or another. Each study has enlarged the understanding of fluent reading, yet no consistent definition of what constitutes fluent reading behavior has emerged. There appeared to be general agreement that fluent reading is a level of reading skill that best assists the student in accessing meaning from text and that for those students who have yet to achieve fluency in

TABLE VII

EFFECTS OF INSTRUCTIONAL TECHNIQUES ON READING

STUDY	YEAR	TOPIC	FINDINGS
1. CHRISTENSEN	1974	A Comparison of Errors on Repeated Passages	Number and error type did not decrease significantly, but repeated readings affected level of fluency
2. GONZALES	1974	Repeated Readings on a Passage at Frustrational Level	Reading errors when rereading a difficult passage not that different from errors from a first-time reading at instructional level
3. DAHL	1974	High Speed Word Recognition with Use of Decoding Strategies	Repeated reading practice provides assistance in skill development
4. GONZALES & ELIJAH	1975	Repeated Reading	Total errors change but error pattern does not
5. NEILL	1980	Repeated Reading for Increased Rate with Less Errors	Positive results across repeated readings of extended discourse
6. CARVER & HOFFMAN	1981	Two Studies of Repeated Readings (one replication of the first)	Proficiency in reading gained with practice
7. HERMAN	1985	Repeated Reading Using Self-Selected Material from Assigned Texts	Rate increased significantly within stories and between first and last readings
8. O'SHEA, SINDLER, & O'SHEA	1985	Repeated Reading Affects on Fluency and Comprehension	Student better able to coordinate elements to improve rate and fluency
9. DOWHOWER	1987	Repeated Reading	Improved rate, comprehension and text phrasing

reading, it is a desired educational objective.

Text phrasing impacts fluent reading behavior and best assists the reader in accessing meaning from print. Being able to chunk works into appropriate phrases was viewed as an important skill of text phrasing. The rate at which a student is able to read text was significant. The studies that investigated the rate of reading indicated that fluent readers read quickly and with ease, but the speed of reading was not the only element affecting fluent reading behavior.

Quick and automatic processing of print was investigated to determine what impact it had on fluent reading behavior. Those studies suggested that automaticity in word recognition is a skill that more capable readers have and use.

Time allocated for reading and various reading instructional designs were examined to determine their impact on fluent reading behavior. The studies on time provided in the classroom for actual reading activities supported the concept that time on reading tasks were important. Additionally, the studies on repeated readings of text demonstrated the value of achieving fluency through developing automaticity of word recognition.

Many studies on the topic of fluency has been reviewed. It appears that a definition for fluent reading behavior needs to be developed in order to appropriately evaluate and effectively remediate its absence in the classroom.

CHAPTER III

METHOD AND PROCEDURE

Sample and Population

The respondents who participated in the survey were drawn from a directory of participants at a national reading conference. These respondents were selected because they were considered to be active in the field of reading as expressed by their continued interest in reading research by attending or presenting at a national reading conference. Many of the participants are reading specialists and teach undergraduate and graduate classes in reading. The sample of respondents consisted of members of university and college faculties in the United States and Canada and of related reading organizations.

Instrumentation

To develop the survey instrument, descriptors were drawn from a review of the literature. It consisted of 86 items that were randomly ordered. The survey included the five most frequently suggested criteria for determining instructional reading level as suggested by the literature. They are:

1. Word Recognition 95% and Reading Comprehension 75%.
2. Word Recognition 92-96% and Reading Comprehension 60-70%.
3. Word REcognition 95-97% and Reading Comprehension 80%.
4. Word Recognition 90-97% and Reading Comprehension 70-80%.
5. Word Recognition 91-94% and Reading Comprehension 60-80%.

Space was provided for including other criterion if the above five were not used by the respondent to identify the instructional reading level they use.

A field study was conducted to test the instrument. Based on the data received from the field test, format corrections and word modifications of the survey items were completed.

Field Test

In March, 1988 a field test of the survey was done. Permission from the administration of the school district to administer it to their classroom teachers in three elementary schools in Tulsa, Oklahoma. The sixty-six teachers participated on a volunteer basis. A cover letter and a survey were provided for each participant. Based on the responses collected from the field study, the structure and the wording of the items were modified for clarity and

readability. Items were structured for consistency of response. Some items were rewritten and others were removed and additional ones were added.

Final Study

The final form of the survey contained 86 items. Each respondent was asked to mark fluent oral reading behavior at the instructional level using a five-point scale. The scale was marked using these descriptors: 1: never, 2: seldom, 3: occasionally, 4: frequently, 5: consistently.

In late April, 1988, the names and addresses of 526 people were compiled from a list of participants who had attended a recent national reading conference. The survey with a cover letter and a self-addressed return envelope were enclosed and mailed. To provide for anonymity the respondents could elect to not supply their name, therefore a target follow-up was not done.

Procedures

A descriptive design was used to evaluate the data. The mode was used as the measure of central tendency in the study. A Lotus 123 system was used to compile and compute the data.

The five-point scale was used to identify possible descriptors of fluent reading behavior. The two extremes of the five-point scale were collapsed to form two cells to indicate the frequency of occurence. The scale items called frequently and consistently were grouped to form a

new cell labled HI. HI represented the modal direction that most respondents indicated for the items they considered to be descriptors of fluent reading behavior. Never and seldom scale indicators were grouped to form a new cell labled LO. LO represented the modal direction of the items that most respondents selected for what was not a descriptor for fluent reading behavior. Then, based on these new cell identification formats and using the new labels, HI and LO, the entire battery of items were grouped into HI and LO cells and comparisons were made to determine which descriptors most identified fluent reading behavior. Finally, all items were categorized by reading topics. These categories were comprehension, context, decoding, fluency error, print, reading attitude, reading error, reading rate, text phrasing, word analysis, and word recognition.

These categories were selected for their relationship to comprehension and the rate at which print is read. Within the comprehension category, text phrasing and word recognition skills were considered and evaluated. As a part of text phrasing, flexibility with context was also examined. The influence of print on the rate of reading as well as the influence of instruction factors were considered. Reading attitudes emerged as a sub-category of how well the child read due to their relationship to the child's success in reading. The rate at which a child read and/or speed at which he processed print seemed to aid in

the development of his view of reading as an activity or task.

As an factor related to print, the word recognition skills were investigated. They were further subdivided to examine decoding and word analysis skills. The errors made while decoding or using word analysis skills were subdivided into two categories to examine fluency errors and reading errors.

Statistical Technique used in the Treatment of the Data

Frequency counts and percentages were calculated for each item. Categories of items on the questionnaire were established and compared. Percentages were ordered and the direction of the mode of agreement was determined. A 75% concurrence was used as a criterion to discriminate among the items.

CHAPTER IV

TREATMENT OF THE DATA AND ANALYSIS OF THE RESULTS

Introduction

This study was concerned with the development of a definition for fluent reading behavior. The survey used a five-point scale to collect data and to determine which characteristics of reading behavior reflected fluent reading. The survey items were based on a review of the literature. The instrument was mailed to a group of respondents who were drawn from a directory of participants who had attended a recent national reading conference. The respondents were considered to be qualified to evaluate fluent reading behavior based on their continued participation in the field of reading. Most of the respondents were university and college faculty members from the United States and Canada.

Treatment of the Data

The data were compiled and analyzed to help develop a definition of fluent reading behavior. The data were further examined to respond to the questions posed by

Of the 526 surveys mailed, 21 were returned undelivered. Two-hundred and two persons responded (38.4%), of which 37 (7.0%) declined to participate in the study due to various reasons. The remaining 165 (31.4%) responses were tabulated using frequency counts. Table VIII shows the data collected from the 165 respondents, which reflects the frequencies and the percentages for each of the possible responses to the characteristics of fluent reading behavior.

To further evaluate the survey items, frequency data for each of the items were collapsed to form two cells for each end of the scale, i.e., never and seldom were clustered to form the LO cell and frequently and consistently were grouped to form the HI cell. These two cells labled HI and LO, represent the direction of the mode for each item. In this study, HI and LO do not represent a qualitative evaluation, but only the direction of occurring fluent reading behavior. The LO modal direction reflects reading behavior that fluent readers never and/or seldom exhibit. The HI modal direction reflects the reading behavior that fluent readers frequently and/or consistently exhibit. Percentages for each of the survey items in these bipolar cells were calculated and the frequency mode was established to determine that direction. These data were useful in separating out those items which were not sufficiently discriminanting based on the percentage of concurrence of the respondents and the item's reflections of fluent reading behavior.

TABLE VIII

PERCENTAGES IN MODAL FREQUENCY BEHAVIOR

QUESTIONS	1	%	2	%	3	%	4	%	5	%	OMIT	%	TOTAL	%	--> MODE*
1. Uses sight-word vocabulary rather than than decoding in order to read with comprehension.	1	0.006	4	0.024	12	0.073	70	0.424	72	0.436	6	0.036	165	0.861	HI
2. Views reading as a word pronouncing task.	77	0.467	71	0.430	11	0.067	2	0.012	0	0.000	4	0.024	165	0.897	LO
3. Decodes unknown words.	2	0.012	16	0.097	55	0.333	42	0.255	47	0.285	3	0.018	165	0.539	HI
4. Demonstrates gaps in phonic knowledge.	31	0.188	72	0.436	55	0.333	4	0.024	0	0.000	3	0.018	165	0.624	LO
5. Uses finger-pointing behavior.	50	0.303	78	0.473	35	0.212	1	0.006	0	0.000	1	0.006	165	0.776	LO
6. Slurs words.	31	0.188	74	0.448	47	0.285	6	0.036	0	0.000	7	0.042	165	0.636	LO
7. Attends to word configuration to identify unknown word.	25	0.152	50	0.303	51	0.309	26	0.158	8	0.048	5	0.030	165	0.455	LO
8. Decodes accurately.	0	0.000	3	0.018	16	0.097	72	0.436	72	0.436	2	0.012	165	0.873	HI
9. Uses prior knowledge of topic.	2	0.012	2	0.012	3	0.018	38	0.230	118	0.715	2	0.012	165	0.945	HI
10. Uses excessive guessing to identify unknown words.	49	0.297	72	0.436	22	0.133	13	0.079	4	0.024	5	0.030	165	0.733	LO
11. Comprehends text well when syntactic errors not corrected.	4	0.024	25	0.152	37	0.224	66	0.400	25	0.152	8	0.048	165	0.552	HI
12. Demonstrates flexibility with the different demands of instructional texts.	1	0.006	2	0.012	6	0.036	66	0.400	87	0.527	3	0.018	165	0.927	HI
13. Employs contextual information for word recognition.	1	0.006	5	0.030	15	0.091	49	0.297	93	0.564	2	0.012	165	0.861	HI
14. Creates nonsense words for unknown words in text.	64	0.388	66	0.400	24	0.145	9	0.055	1	0.006	1	0.006	165	0.788	LO

*HI = Frequently and Consistently
*LO = Never and Seldom

TABLE VIII (Continued)

QUESTIONS	1	%	2	%	3	%	4	%	5	%	OMIT	%	TOTAL	%	--> MODE*
15. Inserts words that do not alter the meaning of the text.	5	0.030	11	0.067	85	0.515	51	0.309	13	0.079	0	0.000	165	0.388	HI
16. Processes words letter-by-letter.	104	0.630	54	0.327	4	0.024	0	0.000	1	0.006	2	0.012	165	0.958	LO
17. Utilizes syntactic structure of text.	1	0.006	1	0.006	15	0.091	73	0.442	73	0.442	2	0.012	165	0.885	HI
18. Has flexibility in word attack.	1	0.006	0	0.000	8	0.048	60	0.364	93	0.564	3	0.018	165	0.927	HI
19. Uses knowledge of word families to identify unknown words.	0	0.000	15	0.091	45	0.273	71	0.430	30	0.182	4	0.024	165	0.612	HI
20. Supplies own purposes for reading.	2	0.012	4	0.024	27	0.164	74	0.448	53	0.321	5	0.030	165	0.770	HI
21. Has a positive attitude towards reading tasks.	1	0.006	4	0.024	21	0.127	56	0.339	76	0.461	7	0.042	165	0.800	HI
22. Makes syntactic errors.	10	0.061	71	0.430	72	0.436	9	0.055	1	0.006	2	0.012	165	0.491	LO
23. Uses intonational features (i.e., stress, juncture, pitch).	0	0.000	1	0.006	9	0.055	75	0.455	80	0.485	0	0.000	165	0.939	HI
24. Uses phrasing.	1	0.006	2	0.012	14	0.085	63	0.382	83	0.503	2	0.012	165	0.885	HI
25. Decodes automatically but with no recall of text.	69	0.418	68	0.412	19	0.115	5	0.030	1	0.006	3	0.018	165	0.830	LO
26. Uses a monotonous voice level.	53	0.321	80	0.485	24	0.145	5	0.030	3	0.018	0	0.000	165	0.806	LO
27. Decodes automatically.	1	0.006	6	0.036	14	0.085	66	0.400	78	0.473	0	0.000	165	0.873	HI
28. Decodes accurately, but not automatically.	9	0.055	59	0.358	66	0.400	26	0.158	4	0.024	1	0.006	165	0.412	LO
29. Reverses letter order in words.	31	0.188	108	0.655	24	0.145	1	0.006	0	0.000	1	0.006	165	0.842	LO
30. Reads orally at a lower level than when reading silently.	10	0.061	27	0.164	55	0.333	46	0.279	11	0.067	16	0.097	165	0.345	HI

*HI = Frequently and Consistently
*LO = Never and Seldom

TABLE VIII (Continued)

QUESTIONS	1	%	2	%	3	%	4	%	5	%	OMIT	%	TOTAL	%	--> MODE*
31. Utilizes a range of word attack skills.	1	0.006	2	0.012	15	0.091	64	0.388	81	0.491	2	0.012	165	0.879	HI
32. Blends sounds to form words.	9	0.055	41	0.248	51	0.309	34	0.206	27	0.164	3	0.018	165	0.370	HI
33. Has an unimpeded flow of with good comprehension of text.	0	0.000	4	0.024	13	0.079	66	0.400	80	0.485	2	0.012	165	0.885	HI
34. Reads in a rapid, but uneven manner.	14	0.085	83	0.503	51	0.309	14	0.085	2	0.012	2	0.012	166	0.584	LO
35. Omits word parts.	11	0.067	82	0.497	64	0.388	7	0.042	0	0.000	1	0.006	165	0.564	LO
36. Over-generalized phonic rules.	19	0.115	93	0.564	48	0.291	4	0.024	0	0.000	1	0.006	165	0.679	LO
37. Uses expression appropriately.	0	0.000	1	0.006	8	0.048	79	0.479	76	0.461	1	0.006	165	0.939	HI
38. Contextual similarity influences reading errors.	2	0.012	20	0.121	75	0.455	45	0.273	10	0.061	13	0.079	165	0.333	HI
39. Inserts words.	5	0.030	36	0.218	96	0.582	26	0.158	2	0.012	0	0.000	165	0.248	LO
40. Uses knowledge of syllablication to process unknown words.	4	0.024	22	0.133	62	0.376	59	0.358	16	0.097	2	0.012	165	0.455	HI
41. Is sensitive to graphemic cues in print.	0	0.000	9	0.055	42	0.255	70	0.424	42	0.255	2	0.012	165	0.679	HI
42. Self-corrects errors.	0	0.000	1	0.006	21	0.127	91	0.552	52	0.315	0	0.000	165	0.867	HI
43. Omits words in text.	5	0.030	40	0.242	97	0.588	21	0.127	1	0.006	1	0.006	165	0.273	LO
44. Reads with fluidity, but with little comprehension of text.	57	0.345	76	0.461	24	0.145	4	0.024	1	0.006	3	0.018	165	0.806	LO
45. Comprehends text well when words are mispronounced.	2	0.012	26	0.158	67	0.406	58	0.352	8	0.048	4	0.024	165	0.400	HI
46. Relies exclusively on context for determining unknown word.	22	0.133	77	0.467	37	0.224	26	0.158	1	0.006	2	0.012	165	0.600	LO

*HI = Frequently and Consistently
*LO = Never and Seldom

TABLE VIII (Continued)

QUESTIONS	1	%	2	%	3	%	4	%	5	%	OMIT	%	TOTAL	%	--> MODE*
47. Reads correctly in context what is misread in isolation.	2	0.012	11	0.067	76	0.461	58	0.352	15	0.091	3	0.018	165	0.442	HI
48. Automatically decodes.	2	0.012	7	0.042	18	0.109	70	0.424	67	0.406	1	0.006	165	0.830	HI
49. Automatically decodes.	11	0.067	64	0.388	75	0.455	11	0.067	2	0.012	2	0.012	165	0.455	LO
50. Runs words together.	15	0.091	92	0.558	45	0.273	6	0.036	2	0.012	5	0.030	165	0.648	LO
51. Reads word-by-word.	82	0.497	74	0.448	5	0.030	1	0.006	2	0.012	1	0.006	165	0.945	LO
52. Uses word prediction skills.	0	0.000	5	0.030	23	0.139	80	0.485	52	0.315	5	0.030	165	0.800	HI
53. Accurately pronounces every word in text.	8	0.048	28	0.170	45	0.273	75	0.455	7	0.042	2	0.012	165	0.497	HI
54. Views reading as an activity to please someone else.	23	0.139	65	0.394	51	0.309	14	0.085	3	0.018	9	0.055	165	0.533	LO
55. Processes complete word before recognizing it.	16	0.097	72	0.436	44	0.267	16	0.097	3	0.018	14	0.085	165	0.533	LO
56. Uses repetitions to clarify comprehension.	2	0.012	26	0.158	90	0.545	41	0.248	4	0.024	2	0.012	165	0.273	HI
57. Visual similarity of word influences reading errors.	4	0.024	54	0.327	89	0.539	14	0.085	0	0.000	4	0.024	165	0.352	LO
58. Decoding accurately, but not automatically with good recall.	6	0.036	40	0.242	88	0.533	23	0.139	4	0.024	4	0.024	165	0.279	LO
59. Utilizes opportunities to read other than when assigned.	1	0.006	3	0.018	17	0.103	80	0.485	51	0.309	13	0.079	165	0.794	HI
60. Has large instant-word recognition vocabluary.	1	0.006	1	0.006	7	0.042	66	0.400	85	0.515	5	0.030	165	0.915	HI
61. Inserts words that alter the meaning of the text.	19	0.115	110	0.667	29	0.176	5	0.030	1	0.006	1	0.006	165	0.782	LO

*HI = Frequently and Consistently
*LO = Never and Seldom

TABLE VIII (Continued)

QUESTIONS	1	%	2	%	3	%	4	%	5	%	OMIT	%	TOTAL	%	--> MODE*
62. Uses repetitions to clarify word pronunciations.	3	0.018	38	0.230	94	0.570	24	0.145	2	0.012	4	0.024	165	0.248	LO
63. Substitutes words that are semantically correct.	1	0.006	10	0.061	97	0.588	48	0.291	7	0.042	2	0.012	165	0.333	HI
64. Uses knowledge of affixes.	2	0.012	12	0.073	53	0.321	66	0.400	27	0.164	5	0.030	165	0.564	HI
65. Has an impeded flow of reading.	49	0.297	92	0.558	12	0.073	6	0.036	3	0.018	3	0.018	165	0.855	LO
66. Reads in a conversational tone.	1	0.006	4	0.024	23	0.139	91	0.552	44	0.267	2	0.012	165	0.818	HI
67. Decodes automatically with good recall of text.	2	0.012	6	0.036	17	0.103	72	0.436	62	0.376	6	0.036	165	0.812	HI
68. Retells text in sequential order.	3	0.018	3	0.018	23	0.139	92	0.558	34	0.206	10	0.061	165	0.764	HI
69. Clusters words into meaningful thought units.	0	0.000	0	0.000	10	0.061	86	0.521	68	0.412	2	0.012	166	0.928	HI
70. Is influenced by contextual constraints of the text.	0	0.000	3	0.018	24	0.145	77	0.467	54	0.327	7	0.042	165	0.794	HI
71. Views reading as a meaning-getting task.	1	0.006	4	0.024	6	0.036	44	0.267	103	0.624	7	0.042	165	0.891	HI
72. Uses word analysis skills with unknown words.	0	0.000	13	0.079	38	0.230	70	0.424	41	0.248	3	0.018	165	0.673	HI
73. Observes external punctuation.	0	0.000	4	0.024	20	0.121	80	0.485	48	0.291	13	0.079	165	0.776	HI
74. Utilizes a range of word attack skills with expertise.	1	0.006	6	0.036	15	0.091	62	0.376	77	0.467	4	0.024	165	0.842	HI
75. Substitutes words that are syntactically correct.	1	0.006	20	0.121	78	0.473	49	0.297	15	0.091	2	0.012	165	0.388	HI
76. Uses structural analysis.	1	0.006	13	0.079	54	0.327	73	0.442	17	0.103	7	0.042	165	0.545	HI
77. Observes internal punctuation of text.	0	0.000	5	0.030	26	0.158	77	0.467	41	0.248	16	0.097	165	0.715	HI
78. Uses knowledge of roots.	1	0.006	14	0.085	57	0.345	67	0.406	23	0.139	3	0.018	165	0.545	HI

*HI = Frequently and Consistently
*LO = Never and Seldom

TABLE VIII (Continued)

QUESTIONS	1	%	2	%	3	%	4	%	5	%	OMIT	%	TOTAL	%	--> MODE*
79. Decodes and attends to processing of meaning simultaneously.	2	0.012	2	0.012	10	0.061	71	0.430	78	0.473	2	0.012	165	0.903	HI
80. Attempts to read unknown words.	0	0.000	2	0.012	15	0.091	83	0.503	61	0.370	4	0.024	165	0.873	HI
81. Views self as a capable reader.	1	0.006	1	0.006	3	0.018	61	0.370	92	0.558	7	0.042	165	0.927	HI
82. Comprehends text well when words are omitted.	1	0.006	4	0.024	32	0.194	90	0.545	32	0.194	6	0.036	165	0.739	HI
83. Has flexibility with different registers of text.	0	0.000	5	0.030	7	0.042	90	0.545	56	0.339	7	0.042	165	0.885	HI
84. Relies on others to pronounce unknown words.	37	0.224	92	0.558	24	0.145	8	0.048	2	0.012	2	0.012	165	0.782	LO
85. Is sensitive to graphemic cues in the text.	4	0.024	12	0.073	31	0.188	76	0.461	36	0.218	6	0.036	165	0.679	HI
86. Reverses word order of text.	26	0.158	96	0.582	40	0.242	2	0.012	0	0.000	1	0.006	165	0.739	LO

*HI = Frequently and Consistently
*LO = Never and Seldom

The items for each of the modes were ordered accordingto their percentages of concurrence and tabulated. Using 75% concurrance as a criterion, 28 items emerged as possible descriptors of fluent reading behavior (Table IX). Twelve items were identified as descriptors not applicable to fluent reading behavior (Table IX). The data with their corresponding modes as high modal indicators of fluent reading behavior are presented in Table X (See Appendix A). The data with their corresponding modes as low modal indicators of fluent reading behavior are presented in Table XI (See Appendix A). These tables include all the items for each of the modal directions.

To aid in further comparisons, these items were categorized according to reading behavior topics and by percentages (Table XII in Appendix A). This table indicates percentages within categories. The categories were then ranked by percentages and by their modal directions. Based on their modal direction and reading behavior category, the items were then ordered by percentages of concurrence (Table XIII and Table XIV respectively, in Appendix A).

Analysis of the Results

Among the items on the survey, use of prior knowledge of the topic received the highest percentage of concurrence at 95% for the HI modal direction (Table XI in Appendix A). This very high percentage of concurrence suggests that this

TABLE IX

FLUENT READING CHARACTERISTICS ORDERED BY

PERCENTAGES WITH CATEGORIES

	QUESTIONS	CATEGORIES	PERCENT	--> MODE*
16.	Processes words letter-by-letter.	Decoding	0.9560	LO
9.	Uses prior knowledge of topic.	Comprehension	0.9497	HI
51.	Reads word-by-word.	Text Phrasing	0.9434	LO
23.	Uses intonational features (i.e., stress, juncture, pitch).	Text Phrasing	0.9371	HI
37.	Uses expression appropriately.	Text Phrasing	0.9371	HI
12.	Demonstrates flexibility with the different demands of instructional texts.	Comprehension	0.9308	HI
69.	Clusters external punctuation.	Text Phrasing	0.9308	HI
18.	Has flexibility in word attack.	Word Analysis	0.9245	HI
81.	Views self as a capable reader.	Reading Attitudes	0.9245	HI
60.	Has large instant-word recognition vocabluary.	Decoding	0.9119	HI
79.	Decodes and attends to processing of meaning simultaneously.	Decoding	0.9057	HI
71.	Views reading as a meaning-getting task.	Reading Attitudes	0.8931	HI
2.	Views reading as a word pronouncing task.	Reading Attitudes	0.8931	LO
33.	Has an unimpeded flow of with good comprehension of task.	Text Phrasing	0.8931	HI
24.	Uses phrasing.	Text Phrasing	0.8868	HI
83.	Has flexibility with different registers of text.	Comprehension	0.8868	HI
17.	Utilizes syntactic structure of text.	Context	0.8805	HI
8.	Decodes accurately.	Decoding	0.8805	HI
27.	Decodes automatically.	Decoding	0.8742	HI
31.	Utilizes a range of word attack skills.	Word Analysis	0.8742	HI
80.	Attempts to read unknown words.	Word Analysis	0.8742	HI
42.	Self-corrects errors.	Fluency Errors	0.8679	HI
65.	Has an impeded flow of reading.	Text Phrasing	0.8616	LO
13.	Employs contextual information for word recognition.	Context	0.8553	HI
1.	Uses sight-word vocabulary rather than than decoding in order to read with comprehension.	Decoding	0.8553	HI
29.	Reverses letter order in words.	Reading Errors	0.8491	LO
25.	Decodes automatically but with no recall of text.	Decoding	0.8428	LO

*HI = Frequently and Consistently
*LO = Never and Seldom

TABLE IX (Continued)

QUESTIONS	CATEGORIES	PERCENT	LO/HI
74. Utilizes a range of word attack skills with expertise.	Word Analysis	0.8428	HI
48. Automatically decodes.	Decoding	0.8303	HI
26. Uses a monotonous voice level.	Text Phrasing	0.8176	LO
66. Reads in a conversational tone.	Text Phrasing	0.8176	HI
44. Reads with fluidity, but with little comprehension of text.	Text Phrasing	0.8113	LO
67. Decodes automatically with good recall of text.	Decoding	0.8113	HI
21. Has a positive attitude towards reading tasks.	Reading Attitudes	0.8050	HI
52. Uses word prediction skills.	Context	0.7987	HI
70. Is influenced by contextual constraints of the text.	Context	0.7987	HI
59. Utilizes opportunities to read other than when assigned.	Reading Attitudes	0.7987	HI
14. Creates nonsense words for unknown words in text.	Reading Errors	0.7925	LO
61. Inserts words that alter the meaning of the text.	Fluency Errors	0.7862	LO
5. Uses finger-pointing behavior.	Text Phrasing	0.7799	LO
84. Relies on others to pronounce unknown words.	Reading Errors	0.7799	LO
20. Supplies own purposes for reading.	Reading Attitudes	0.7736	HI
73. Observes external punctuation.	Text Phrasing	0.7736	HI
68. Retells text in sequential order.	Comprehension	0.7610	HI
10. Uses excessive guessing to identify unknown words.	Reading Errors	0.7421	LO
86. Reverses word order of text.	Reading Errors	0.7421	LO
82. Comprehends text well when words are omitted.	Comprehension	0.7358	HI
77. Observes internal punctuation of text.	Text Phrasing	0.7107	HI

*HI = Frequently and Consistently

item may well be the foremost indicator of fluent reading behavior based on the concurrence by the population surveyed. Two items related to expression were supported at 94% concurrence. The abiity to group words into meaningful thought units, having flexibility in word attack skills, and seeing oneself as a capable reader, each had 93% concurrence. Variability with the demands of texts also had a 93% concurrence. Restated in another item, it received a 89% concurrence.

Having a large instant-word recognition vocabulary and the ability to decode and attend to the processing of meaning simultaneously, had 92% and 90% concurrence respectively. This supports LaBerge and Samuels' (1974) theory of automaticity in processing text.

Other strong descriptors of fluent reading behavior had 89% concurrence. These included (1) viewing reading as meaning-getting task, (2) having an unimpeded flow of reading with good comprehension, (3) use of phrasing, and (4) utilizing syntactic structure of text. Four items in the word recognition skills category received strong support at 88 and 87%. These items suggest that the fluent reader readily decodes (90%), probably automatically (87% and 83%), and with good recall of text (87%). This also suggests that the fluent reader is probably not using decoding skills when encountering an unknown word.

Except for self-correction of errors (87%), fluency errors had limited agreement (39% or less). This kind of

Except for self-correction of errors (87%), fluency errors had limited agreement (39% or less). This kind of error in reading was considered by the respondents to be an occasional descriptor of fluent readers. Sensitivity to the print appears to be a minor effector of fluent reading behavior as indicated by the two survey items (#41 and #85) which dealt with graphemic cues. Each of these items had 68% concurrence as a descriptor of fluent reading behavior. Reading attitudes emerged as a strong descriptor for fluent readers. The items that measured reading attitudes ranged from 77% to 93% concurrence.

Reading categories ordered by percentages in the LO modal direction (Table XII in Appendix A) suggest that the highest concurrence of what a fluent reader does not do is to process words letter-by-letter (96%). The fluent reader does not read word-by-word (95%) or view reading as a word pronouncing task (90%). The fluent reader's flow of reading is not impeded (86%). The fluent reader does not create nonsense words for an unknown word (79%), nor do reading errors distort the meaning of the text (78%). The fluent reader comprehends while reading (81%) and has good recall (83%, 87%). The fluent reader rarely uses a monotonous voice (81%) or a finger to maintain his place (78%).

In summary, concerning the items that best describe what fluent readers do, the highest percentages of concurrence suggested these: use of prior knowledge about the topic, use of appropriate expression, clustering words

meaningfully, having flexibility with text demands and word attack skills, automatically accessing words through having and using a large instant-word vocabulary, decoding and processing information simultaneously, and viewing oneself as a capable reader who sees reading as a meaning-getting task. Fluent readers do make errors while reading but they either do not distort the meaning of the text, or they go back and fix them. These items were supported by the high percentage of concurrence in the HI modal direction.

The reading experts also strongly concurred that fluent readers do not process words letter-by-letter or read word-by-word, nor do they view reading as a word pronouncing task. They do not have an impeded flow of reading which suggests a good rate of reading. When meeting an unknown word in the text they do not create nonsense words, rely on someone else to supply the pronunciation, or refer to just the context. These items were supported by the high percentage of concurrence in the LO modal direction.

CHAPTER V

DISCUSSION, IMPLICATIONS AND RECOMMENDATIONS

This study was concerned with the development of a definition of fluent reading behavior. The items from the survey were ordered by percentages and categorized by reading topic to examine which ones appeared to be significant descriptors of fluent reading behavior. The topic categories examined by the survey are: comprehension, context, decoding, fluency error, print, reading attitude, reading error, reading rate, text phrasing, word analysis, word recognition, and conceptions about the reading process.

Discussion

This study posed questions concerning definitive characteristics of fluent reading behavior. The questions are discussed and the corresponding percentages. The direction of the mode for each item within the categories are discussed. Additionally, the following research questions are addressed:

1. What descriptors of fluent reading behavior are related to the ability to phrase text meaningfully?

2. What descriptors of fluent reading behavior are

related to the rate at which text is read?

3. What descriptors of fluent reading behavior are related to the influence of the print of the text?

4. What descriptors of fluent reading behavior are related to instructional techniques?

5. What descriptors of fluent reading behavior are related to comprehension?

6. What descriptors of fluent reading behavior are related to knowledge of word identification skills?

7. What descriptors of fluent reading behavior are related to conceptions about the reading process?

Text Phrasing and Reading Rate as Factors in Describing Fluent Reading Behavior

The first two questions investigated by this study concerned the influence of text phrasing and rate of reading. These questions were examined in two categories: oral expression and reading rate.

In the oral expression category, the use of intonational features (94%) , using appropriate expression (94%) , and reading in a conversational tone (82%) were considered important characteristics of fluent reading behavior. These results are in keeping with Schrieber's and Reid's (1980) position that young readers appear to rely on elements of text phrasing more than adults. This correlates well with Kleiman's (1982) statement that the dividing of "...sentences into meaningful phrases and

clauses is an essential step in language comprehension" (p. 11).

In the reading rate category, clustering words into meaningful thought units (Clay and Imlach, 1971, Golinkoff, 1975-1976), and having an unimpeded flow of reading with good comprehension of text were considered important descriptors of fluent reading behavior. This finding correlates well with the research conducted by LaBerge and Samuels (1974). The aspect of an unimpeded flow of reading suggests a sufficient rate of reading.

In essence, the rate of reading the material is important (i.e. does not read word-by-word), but it is not the only criterion for a fluent reader. Rather, the fluent reader is able to read with expression, search for meaning, and use a smooth flowing rhythm. To accomplish this, the fluent reader chunks words into meaningful phrases, draws on prior knowledge of the topic, and adjusts the reading rate to meet the demands of the text. These findings supported the research conducted by Shores and Husbands (1950).

Influence of the Print of the Text in Describing Fluent Reading Behavior

A third question addressed in this study was concerned with print as it affects the reading errors that students make. This category included graphemic cues and print features (i.e. surface structure, Hornby, 1971) that

influence the processing of text. The graphemic cues examined errors as reading errors and fluency errors (Aulls, 1978). Reading errors were examined based on the assumption that the errors which occur in oral reading are indicative of the errors that occur in silent reading (Weber, 1968). She stated that "...little attention has been paid to the possible effects that the commission of errors may have on learning a specific set of items or on gaining reading flueny" (p. 105).

Fluency Errors. The survey queried the effect of fluency errors on fluent reading behavior. The four categories of fluency errors examined were: insertions, omissions, repetitions and self-corrections. The only significant category that was considered a descriptor of fluent reading behavior was self-corrections. All other fluency errors were not considered to be descriptive of fluent reading behavior.

The fluent reader may make fluency errors (i.e. insertions, omissions, and repetitions), but because the goal is reading for meaning, the errors that may hinder understanding of the passage are fixed through self-corrections. The fluent reader appears to use strategies that in selecting when and how to self-correct because not all of the omissions and insertions distort the meaning. Many of the repetitions are in reality self-checks for better comprehension.

Reading Errors. The reading errors examined by the survey were mispronunciations and substitution. Neither of these items were considered by the respondents to be significant factors in describing fluent reading behavior. The study by Ilg and Ames (1950) supports this finding in that the type and amount of reading errors a reader makes may well be indicators of progress beomg made in the development of reading fluency. It may be that the fluent reader is relying on other elements present in the reading experience other than the print of the text. The respondents identified the utilization of syntactic structure (88%) and contextual information (86%) as two elements in developing fluent reading behavior. These items are in keeping with Schreiber's (1980) contention that as the reader develops facilitation with reading, the reader begins to make use of the syntactic structure of the text.

Print Features that Affect Graphemic Cues. The items that examined graphemic cues in the survey revealed that visual similarities of words occasionally impact fluent reading behavior (85% concurrence), but that the fluent reader is seldom sensitive to graphemic cues in the text or print (73% and 55% respectively). These findings may suggest that the fluent reader is attending to other information for accessing meaning rather than just the print itself (Cunningham and Cunningham, 1978; Doehring,

1976). It may also be a result of instructional methodology.

Instructional Techniques as a Factor in Describing Fluent Reading Behavior

The fourth question addressed in this study examined the role of instructional techniques in describing fluent reading behavior. The responses in the categories of the LO modal direction suggest that remediation of fluent reading behavior would be well served through appropriate instructional techniques such as repeated readings (Samuels, 1979), read-along methods (Chomsky, 1978; Reitsma, 1988), neurological impress (Heckelman, 1969; Langford, Slade, and Barnett, 1974), teacher modeling (Johnson, Johnson, and Kerfoot, 1972; Smith, 1979), time allocated for reading tasks (Allington, 1977, 1980; Anderson, 1981), and the opportunity to read uninterruptedly (Hunt, 1970; McCracken, 1971).

Comprehension as a Factor in Describing Fluent Reading Behavior

A fifth question addressed in this study focused on the role of comprehension in fluent reading behavior. The following items were considered significant descriptors by the respondants: Use of prior knowledge of text (95%), flexibility with the different demands of the text (93%), including different language registers (89%), and retells

suggest that even when errors occur, the fluent reader's comprehension is not significantly impacted. It appears that the fluent reader is able to handle the wide variety of contextual demands, draw upon prior knowledge of the topic, and arrange the information in a sequential order. These findings strongly suggest opportunities should be provided for development of background information prior to reading the text. Additionally, the findings suggest that readers should be instructed in how to access meaning from a wide variety of text formats and styles of writing.

Further, when considering the impact of the context on comprehension, the findings of the study suggest that how the reader utilizes the syntactic structure of the text (88%), contextual information for word recognition (85%), the use of word prediction skills (80%), and the influence of contextual constraints of the text (80%). These items should be included as instruction objectives for readers.

Word Identification Skills as a Factor in Describing Fluent Reading Behavior

The sixth question of this study examined the elements of word identification skills. The categories examined in the survey that related to word identification skills were: decoding, word analysis skills, automaticity, and word recognition skills. The respondents identified decoding and attending to the

processing of meaning simultaneously (90%), decoding automatically and accurately (87%), having a large instant-word recognitionvocabulary (92%), using flexibility in word attack (93%), utilizing a range of word attack skills (84%), and using word prediction skills (80%), as being significant word identification skills for the fluent reader.

The concept of automaticity in processing information to access meaning was strongly supported by the respondents of the survey as a descriptor of fluent reading behavior. This is further supported by the high concurrence on having a large instant-word recognition vocabulary. Additionally, decoding was felt to be at the automated response level as well (87%). These findings seem to suggest that the fluent reader has acquired a proficiency skill level with these lower-level processing elements which allows him to give less attention to the skills and more attention to the meaning of the passage. He may not accurately pronounce every word (50%), but this does not appear to impact the accessing of meaning.

The respondents' choices support Mitchell's (1978) model of fluent reading behavior. He believed that the fluent reader is one who is able to recognize "...the majority of words in a text without pronouncing them implicitly or explicitly and without making use of contextual constraints" (p. 136). The fluent reader applies various strategies and informational sources to

assist in recognizing words. Additionally, Mitchell (1978) believed that the reader processes words, ideas, and information simultaneously, even omitting chunks of text that are not needed to accomplish his present purpose for reading. LaBerge and Samuels (1974) suggested that the information processing time for the fluent reader may be "...only a fraction of a second" (p. 293).

In regards to word structure and word analysis, one interesting observation drawn from the data suggests that the fluent reader may not be using structural analysis to respond to the unknown word in the text. The fluent reader does not always have or use structural analysis skills (55%). This strongly suggests that he is relying on something other than knowledge of word families (61%), affixes (56%), roots (55%), and syllablication (46%) when attempting to read unknown words. It may well be that the reader is relying on context (86%), such as utilizing syntactic structure (89%), using contextual information for word recognition (86%), using word prediction skills (80%), and being influenced by contextual constraints of the text (79%). Or, it may be that he has a large instant-word recognition vocabulary (92%) and uses it (86%).

The Effect of Attitudes towards Reading on Fluent Reading Behavior

The seventh question of this study examined

about reading, including attitudes towards reading. The respondents identified these items as significant descriptors of fluent reading behavior: viewing oneself as a capable reader (93%), viewing reading as a meaning-getting task (90%), and having a positive attitude towards reading tasks (80%). A positive attitude towards reading supports fluent reading behavior because a student who feels good about reading will probably read more and as Allington (1983) noted, is offerred more opportunity to read. These opportunities to read are favorably received by the student due to the view of the reading task. It is not viewed as something to please someone else (53%) or as a word pronouncing task (90%) , but as something of value. The reader is successful at reading and enjoys reading. A negative attitude towards reading may prevent a student from selecting reading as an activity and therefore, hinder the practice of reading.

In summary, the ten reading behaviors which appear to best describe the characteristics of fluent reading are:

1. Using prior knowledge of the topic.
2. Having appropriate expression and intonational features.
3. Flexibility with the different demands of instructional texts.
4. Flexibility with different registers of text.
5. Clustering words into meaningful thought units.
6. Viewing oneself as a capable reader.

7. Has flexibility in word attack skills.
8. Demonstrates automaticity through having a large instant-word vocabulary.
9. Decoding and processing information simultaneously.
10. Viewing reading as a meaning-getting task.

These descriptors suggest that the fluent reader is one who is able to access the meaning of the text without being blockaded by a lack of background knowledge for the topic. The reader uses appropriate expression and intonational features which assist in gleaning the meaning through chunking words together appropriately. This further suggests that the fluent reader must have an adequate eye-voice span and uses it. The fluent reader is able to handle the variety of demands in the text structure. The fluent reader utilizes word attack skills and is able to read words automatically as demonstrated by having a large instant-word vocabulary. Additionally, automaticity is demonstrated in the ability to decode and process information simultaneously. And, finally, the fluent reader views himself as a capable reader and sees reading as a meaning getting task.

Implications

The data collected for this study have identified ten

characteristics of fluent reading behavior which provide a description for fluency in reading. The descriptors suggest that prior knowledge of a topic is of significant value to the reader. When nonfluent readers are provided background development for a topic they will be developing reading skills which lead to fluent reading behavior.

The value of being able to handle the various registers of text material is significant in developing fluent reading behavior. Opportunities should be provided for nonfluent readers to experiment with a variety of text material and to develop skills to gain flexibility in the type of reading each type of text requires.

Being able to access automatically the text through having and using a large instant-word recognition vocabulary is of significant value in gaining fluency in reading. Opportunities should be provided for nonfluent readers to become exposed repeatedly to vocabulary words to build familarity and ease of recognition. This will assist them in developing fluent reading behavior.

Being able to decode and process information simultaneously is of significant value in acquiring fluent reading behavior. Nonfluent readers should be provided opportunities to cluster words meaningfully and move away from the choppy, word-by-word reading. Perhaps this could be achieved through the avenue of teacher modeling and other instructional techniques designed to facilitate a

more efficient rate of reading. With increased skill in text phrasing, nonfluent readers will be better able to access the meaning of the text.

Students who view themselves as being capable readers are acquiring a useful attitude towards reading. Opportunities should be provided for nonfluent readers to come to view themselves as capable readers. This will assist them in developing fluent reading behavior.

Fluent readers use appropriate expression. Opportunities to practice using appropriate expression will assist nonfluent readers in achieveing fluent reading behavior. Perhaps use of appropriate expression can be best instructed through teacher modeling.

Inasmuch as appropriate expresson includes the proper use of intonation, stress, juncture, pitch, and the observation of punctuation, this aspect of fluent reading behavior supports the concept of processing print in meaningful chunks. Nonfluent readers should be provided opportunities to practice chunking or the clustering of words in appropriate phrases. This will assist them in gaining fluent reading behavior.

Recommendations

The present study suggests the following recommendations:

1. It is recommended that other descriptors be used, i.e., those submitted by the respondents.

2. It is recommended that additional research be undertaken to investigate which of the descriptors identified by this study are significant indicators of fluent reading behavior in an actual classroom setting.

3. It is recommended that additional research be undertaken to investigate which method of instruction for fluent reading behavior is most benificial in remediating non-fluent reading behavior.

4. A study might be conducted which includes interviews of subjects who are considered to be fluent readers to ascertain how they handle the increasing demands of textual material with fluency.

6. It is further recommended that researchers continue to refine the definition of fluent reading behavior in order to establish a meaningful and useful definition to assist in developing appropriate methods of instruction for the remediation of its absence.

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APPENDIX

TABLE X

ORDERED PERCENTAGES WITH HI MODAL DIRECTION

	QUESTIONS	%	--> MODE*
9.	Uses prior knowledge of topic.	0.945	HI
23.	Uses intonational features (i.e., stress, juncture, pitch).	0.939	HI
37.	Uses expression appropriately.	0.939	HI
69.	Clusters words into meaningful thought units.	0.928	HI
18.	Has flexibility in word attack.	0.927	HI
12.	Demonstrates flexibility with the different demands of instructional texts.	0.927	HI
81.	Views self as a capable reader.	0.927	HI
60.	Has large instant-word recognition vocabulary.	0.915	HI
79.	Decodes and attends to processing of meaning simultaneously.	0.903	HI
71.	Views reading as a meaning-getting task.	0.891	HI
33.	Has an unimpeded flow of with good comprehension of task.	0.885	HI
83.	Has flexibility with different registers of text.	0.885	HI
24.	Uses phrasing.	0.885	HI
17.	Utilizes syntactic structure of text.	0.885	HI
31.	Utilizes a range of word attack skills.	0.879	HI
27.	Decodes automatically.	0.873	HI
8.	Decodes accurately.	0.873	HI
80.	Attempts to read unknown words.	0.873	HI
42.	Self-corrects errors.	0.867	HI
1.	Uses sight-word vocabulary rather than decoding in order to read with comprehension.	0.861	HI
13.	Employs contextual information for word recognition.	0.861	HI
74.	Utilizes a range of word attack skills with expertise.	0.842	HI
48.	Automatically decodes.	0.830	HI
66.	Reads in a conversational tone.	0.818	HI
67.	Decodes automatically with good recall of text.	0.812	HI
21.	Has a positive attitude towards reading tasks.	0.800	HI

*HI = Frequently and Consistently
*LO = Never and Seldom

TABLE X (Continued)

	QUESTIONS	%	--> MODE*
52.	Uses word prediction skills.	0.800	HI
70.	Is influenced by contextual constraints of the texts.	0.794	HI
59.	Utilizes opportunities to read other than when assigned.	0.794	HI
73.	Observes external punctuation.	0.776	HI
20.	Supplies own purposes for reading.	0.770	HI
68.	Retells text in sequential order.	0.764	HI
82.	Comprehends text well when words are omitted.	0.739	HI
77.	Observes internal punctuation of text.	0.715	HI
41.	Is sensitive to graphemic cues in print.	0.679	HI
85.	Is sensitive to graphemic cues in the text.	0.679	HI
72.	Uses word analysis skills with unknown words.	0.673	HI
19.	Uses knowledge of word families to identify unknown words.	0.612	HI
64.	Uses knowledge of affixes.	0.564	HI
11.	Comprehends text well when syntactic errors not corrected.	0.552	HI
78.	Uses knowledge of roots.	0.545	HI
76.	Uses structural analysis.	0.545	HI
3.	Decodes unknown words.	0.539	HI
53.	Accurately pronounces every word in text.	0.497	HI
40.	Uses knowledge of syllablication to process unknown words.	0.455	HI
47.	Reads correctly in context what is misread in isolation.	0.442	HI
45.	Comprehends text well when words are mispronounced.	0.400	HI
15.	Inserts words that do not alter the meaning of the text.	0.388	HI
75.	Substitutes words that are syntactically correct.	0.388	HI
32.	Blends sounds to form words.	0.370	HI
30.	Reads orally at a lower level than when reading silently.	0.345	HI
63.	Substitutes words that are semantically correct.	0.333	HI
38.	Contextual similarity influences reading errors.	0.333	HI
56.	Uses repetitions to clarify comprehension.	0.273	HI

*HI = Frequently and Consistently
*LO = Never and Seldom

TABLE XI

ORDERED PERCENTAGES WITH LO MODAL DIRECTION

	QUESTIONS	%	--> MODE*
16.	Processes words letter-by-letter.	0.958	LO
51.	Reads word-by-word.	0.945	LO
2.	Views reading as a word pronouncing task.	0.897	LO
65.	Has an impeded flow of reading.	0.855	LO
29.	Reverses letter order in words.	0.842	LO
25.	Decodes automatically but with no recall of text.	0.830	LO
26.	Uses a monotonous voice level.	0.806	LO
44.	Reads with fluidity, but with little comprehension of text.	0.806	LO
14.	Creates nonsense words for unknown words in text.	0.788	LO
84.	Relies on others to pronounce unknown words.	0.782	LO
61.	Inserts words that alter the meaning of the text.	0.782	LO
5.	Uses finger-pointing behavior.	0.776	LO
86.	Reverses word order of text.	0.739	LO
10.	Uses excessive guessing to identify unknown words.	0.733	LO
36.	Over-generalized phonic rules.	0.679	LO
50.	Runs words together.	0.648	LO
6.	Slurs words.	0.636	LO
4.	Demonstrates gaps in phonic knowledge.	0.624	LO
46.	Relies exclusively on context for determining unknown word	0.600	LO
34.	Reads in a rapid, but uneven manner.	0.584	LO
35.	Omits word parts.	0.564	LO
54.	Views reading as an activity to please someone else.	0.533	LO
55.	Processes complete word before recognizing it.	0.533	LO
22.	Makes syntactic errors.	0.491	LO
49.	Automatically decodes.	0.455	LO
7.	Attends to word configuration to identify unknown word.	0.455	LO
28.	Decodes accurately, but not automatically.	0.412	LO
57.	Visual similarity of word influences reading errors.	0.352	LO
58.	Decoding accurately, but not automatically,	0.279	LO

*HI = Frequently and Consistently
*LO = Never and Seldom

TABLE XI (Continued)

QUESTIONS	%	--> MODE*
43. Omits words in text.	0.273	LO
62. Uses repetitions to clarify word pronunciations.	0.248	LO
39. Inserts words.	0.248	LO

*HI = Frequently and Consistently
*LO = Never and Seldom

TABLE XII

FLUENT READING CHARACTERISTICS ORDERED BY CATEGORIES WITH PERCENTAGES AND MODAL DIRECTION

	QUESTIONS	CATEGORIES	PERCENT	--> MODE*
9.	Uses prior knowledge of topic.	Comprehension	0.9497	HI
12.	Demonstrates flexibility with the different demands of instructional texts.	Comprehension	0.9308	HI
83.	Has flexibility with different registers of text.	Comprehension	0.8868	HI
68.	Retells text in sequential order.	Comprehension	0.7610	HI
82.	Comprehends text well when words are omitted.	Comprehension	0.7358	HI
17.	Utilizes syntactic structure of text.	Context	0.8805	HI
13.	Employs contextual information for word recognition.	Context	0.8553	HI
52.	Uses word prediction skills.	Context	0.7987	HI
70.	Is influenced by contextual constraints of the text.	Context	0.7987	HI
16.	Processes words letter-by-letter.	Decoding	0.9560	LO
60.	Has large instant-word recognition vocabulary.	Decoding	0.9119	HI
79.	Decodes and attends to processing of meaning simultaneously.	Decoding	0.9057	HI
8.	Decodes accurately.	Decoding	0.8805	HI
27.	Decodes automatically.	Decoding	0.8742	HI
1.	Uses sight-word vocabulary rather than than decoding in order to read with comprehension.	Decoding	0.8553	HI
25.	Decodes automatically but with no recall of text.	Decoding	0.8428	LO
48.	Automatically decodes.	Decoding	0.8303	HI
67.	Decodes automatically with good recall of text.	Decoding	0.8113	HI
42.	Self-corrects errors.	Fluency Errors	0.8679	HI
61.	Inserts words that alter the meaning of the text.	Fluency Errors	0.7862	LO
81.	Views self as a capable reader.	Reading Attitudes	0.9245	HI
2.	Views reading as a word pronouncing task.	Reading Attitudes	0.8931	LO

*HI = Frequently and Consistently
*LO = Never and Seldom

TABLE XII (Continued)

QUESTIONS	CATEGORIES	PERCENT	--> MODE*
71. Views reading as a meaning-getting task.	Reading Attitudes	0.8931	HI
21. Has a positive attitude towards reading tasks.	Reading Attitudes	0.8050	HI
59. Utilizes opportunities to read other than when assigned.	Reading Attitudes	0.7987	HI
20. Supplies own purposes for reading.	Reading Attitudes	0.7736	HI
29. Reverses letter order in words.	Reading Errors	0.8491	LO
84. Relies on others to pronounce unknown words.	Reading Errors	0.7799	LO
14. Creates nonsense words for unknown words in text.	Reading Errors	0.7925	LO
10. Uses excessive guessing to identify unknown words.	Reading Errors	0.7421	LO
86. Reverses word order of text.	Reading Errors	0.7421	LO
51. Reads word-by-word.	Text Phrasing	0.9434	LO
37. Uses expression appropriately.	Text Phrasing	0.9371	HI
23. Uses intonational features (i.e., stress, juncture, pitch).	Text Phrasing	0.9371	HI
69. Clusters external punctuation.	Text Phrasing	0.9308	HI
33. Has an unimpeded flow of with good comprehension of task.	Text Phrasing	0.8931	HI
24. Uses phrasing.	Text Phrasing	0.8868	HI
65. Has an impeded flow of reading.	Text Phrasing	0.8616	LO
26. Uses a monotonous voice level.	Text Phrasing	0.8176	LO
66. Reads in a conversational tone.	Text Phrasing	0.8176	HI
44. Reads with fluidity, but with little comprehension of text.	Text Phrasing	0.8113	LO
5. Uses finger-pointing behavior.	Text Phrasing	0.7799	LO
73. Observes external punctuation.	Text Phrasing	0.7736	HI
77. Observes internal punctuation of text.	Text Phrasing	0.7107	HI
18. Has flexibility in word attack.	Word Analysis	0.9245	HI
31. Utilizes a range of word attack skills.	Word Analysis	0.8742	HI
80. Attempts to read unknown words.	Word Analysis	0.8742	HI
74. Utilizes a range of word attack skills with expertise.	Word Analysis	0.8428	HI

*HI = Frequently and Consistently

*LO = Never and Seldom

TABLE XIII

FLUENT READING CHARACTERISTICS ORDERED BY CATEGORIES
AND BY PERCENTAGES IN THE HI MODAL DIRECTION

	QUESTIONS	CATEGORY	%	--> MODE*
9.	Uses prior knowledge of topic.	Comprehension	0.945	HI
12.	Demonstrates flexibility with the different demands of the text.	Comprehension	0.927	HI
83.	Has flexibility with different registers of text.	Comprehension	0.885	HI
68.	Retells text in sequential order.	Comprehension	0.764	HI
82.	Comprehends text well when words are omitted.	Comprehension	0.739	HI
11.	Comprehends text well when syntactic errors not corrected.	Comprehension	0.552	HI
45.	Comprehends text well when words are mispronounced.	Comprehension	0.400	HI
17.	Utilizes syntactic structure of text.	Context	0.885	HI
13.	Employs contextual information for word recognition.	Context	0.861	HI
52.	Uses word prediction skills.	Context	0.800	HI
70.	Is influenced by contextual constraints of the text.	Context	0.794	HI
47.	Reads correctly in context what is misread in isolation.	Context	0.442	HI
79.	Decodes and attends to processing of meaning simultaneously.	Decoding	0.903	HI
8.	Decodes accurately.	Decoding	0.873	HI
27.	Decodes automatically.	Decoding	0.873	HI
48.	Automatically decodes.	Decoding	0.830	HI
67.	Decodes automatically with good recall of text.	Decoding	0.867	HI
3.	Decodes unknown words.	Decoding	0.539	HI
32.	Blends sounds to form words.	Decoding	0.345	HI
42.	Self-corrects errors.	Fluency Error	0.867	HI
75.	Substitutes words that are syntactically correct.	Fluency Error	0.388	HI
15.	Inserts words that do not alter the meaning of the text.	Fluency Error	0.388	HI
63.	Substitutes words that are semantically correct.	Fluency Error	0.333	HI

*HI = Frequently and Consistently
*LO = Never and Seldom

TABLE XIII (Continued)

	QUESTIONS	CATEGORY	%	--> MODE*
56.	Uses repetitions to clarify comprehension.	Fluency Error	0.273	HI
85.	Is sensitive to graphemic cues in the text.	Print	0.679	HI
41.	Is sensitive to graphemic cues in print.	Print	0.679	HI
81.	Views self as a capable reader.	Reading Attitude	0.927	HI
71.	Views reading as a meaning-getting task.	Reading Attitude	0.891	HI
21.	Has a positive attitude towards reading tasks.	Reading Attitude	0.800	HI
59.	Utilized opportunities to read other than when assigned.	Reading Attitude	0.794	HI
20.	Supplies own purposes for reading.	Reading Attitude	0.770	HI
53.	Accurately pronounces every word in text.	Reading Error	0.497	HI
38.	Contextual similarity influences reading errors.	Reading Error	0.333	HI
33.	Has an unimpeded flow with good comprehension of text.	Reading Rate	0.885	HI
30.	Reads orally at a lower level than when reading silently.	Reading Rate	0.345	HI
37.	Uses expression appropriately.	Text Phrasing	0.939	HI
23.	Uses intonational features (i.e., stress, juncture, pitch).	Text Phrasing	0.939	HI
69.	Clusters words into meaningful thought units.	Text Phrasing	0.928	HI
24.	Uses phrasing.	Text Phrasing	0.885	HI
66.	Reads in a conversational tone.	Text Phrasing	0.818	HI
73.	Observes external punctuation.	Text Phrasing	0.776	HI
77.	Observes internal punctuation of text.	Text Phrasing	0.715	HI
18.	Has flexibility in word attack.	Word Analysis	0.927	HI
31.	Utilizes a range of word attack skills.	Word Analysis	0.879	HI
80.	Attempts to read unknown words.	Word Analysis	0.873	HI
74.	Utilizes a range of word attack skills with expertise.	Word Analysis	0.842	
72.	Uses word analysis skills with unknown words.	Word Analysis	0.673	HI
19.	Uses knowledge of word families to identify unknown words.	Word Analysis	0.612	HI
64.	Uses knowledge of affixes.	Word Analysis	0.564	HI
78.	Uses knowledge of roots.	Word Analysis	0.545	HI
76.	Uses structural analysis.	Word Analysis	0.545	HI
40.	Uses knowledge of syllablication to process unknown words.	Word Analysis	0.455	HI
60.	Has large instant-word recognition vocabulary.	Word Recognition	0.915	HI
1.	Uses sight-word vocabulary rather than decoding in order to read with comprehension.	Word Recognition	0.861	HI

*HI = Frequently and Consistently

*LO = Never and Seldom

TABLE XIV

FLUENT READING CHARACTERISTICS BY CATEGORIES AND PERCENTAGES IN THE LO MODAL DIRECTION

	QUESTIONS	CATEGORY	%	--> MODE*
46.	Relies excluesively on context for determining unknown word.	Context	0.600	LO
22.	Makes syntactic errors.	Context	0.491	LO
16.	Processes words letter-by-letter.	Decoding	0.958	LO
25.	Decodes automatically but with no recall of text.	Decoding	0.830	LO
4.	Demonstrates gaps in phonic knowledge.	Decoding	0.624	LO
55.	Processes complete word before recognizing it.	Decoding	0.533	LO
49.	Automatically decodes.	Decoding	0.455	LO
28.	Decodes accurately, but not automatically.	Decoding	0.412	LO
58.	Decoding accurately, but not automatically, with good recall.	Decoding	0.279	LO
61.	Inserts words that alter the meaning of the text.	Fluency Error	0.782	LO
35.	Omits word parts.	Fluency Error	0.564	LO
43.	Omits words in text.	Fluency Error	0.273	LO
39.	Inserts words.	Fluency Error	0.248	LO
62.	Uses repetitions to clarify word pronunciations.	Fluency Error	0.248	LO
57.	Visual similarity of word influences reading errors.	Print	0.352	LO
54.	Views reading as an activity to please someone else.	Reading Attitude	0.533	LO
2.	Views reading as a word pronouncing task.	Reading Attitudes	0.897	LO
29.	Reverses letter order in words.	Reading Error	0.842	LO
14.	Creates nonsense words for unknown words in text.	Reading Error	0.788	LO
84.	Relies on others to pronounce unknown words.	Reading Error	0.782	LO
86.	Reverses word order of text.	Reading Error	0.739	LO
10.	Uses excessive guessing to identify unknown words.	Reading Error	0.733	LO
51.	Reads word-by-word.	Reading Rate	0.945	LO
65.	Has an impeded flow of reading.	Reading Rate	0.855	LO
5.	Uses finger-pointing behavior.	Reading Rate	0.776	LO
26.	Uses a monotonous voice level.	Text Phrasing	0.806	LO

*HI = Frequently and Consistently
*LO = Never and Seldom

TABLE XIV (Continued)

QUESTIONS	CATEGORY	%	--> MODE*
44. Reads with fluidity, but with little comprehension of text.	Text Phrasing	0.806	LO
50. Runs words together.	Text Phrasing	0.648	LO
6. Slurs words.	Text Phrasing	0.636	LO
34. Reads in a rapid, but uneven manner.	Text Phrasing	0.584	LO
36. Over-generalized phonic rules.	Word Analysis	0.679	LO
7. Attends to word configuration to identify unknown word.	Word Recognition	0.455	LO

*HI = Frequently and Consistently
*LO = Never and Seldom

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Biographical:

Personal Data: Born in Belleville, Illinois, October 27, 1939, the daughter of Russell and Edna Sanders.

Education: Graduated from South Mountain High School, Phoenix, Arizona, in May, 1957; received Bachelor of Arts Degree in Elementary Education from Azusa Pacific University, in May, 1961; received Master of Education degree from Northeastern State University, in May, 1984; completed requirements for the Doctor of Education degree from Oklahoma State University in July, 1988.

Professional Experience: Taught first through fourth grades in Los Angeles, California, from 1961 to 1965; taught for Head Start Program in Los Angeles, California in 1963; taught fifth grade for Montgomery County Schools in Wheaton, Maryland, from March, 1968 to June, 1969; taught kindergarten through fifth grade for Oklahoma Christian School in Oklahoma City, Oklahoma, from Fall, 1971 to May, 1975; taught reading and other speciality classes for Academy Central School in Osage County in Tulsa, Oklahoma, from August, 1975 to May, 1977; taught as an adjunct instructor for Langston University at the University Center in Tulsa, Oklahoma, from August, 1984 to August 1985; served as a Reading Specialist to homeschooling parents in Tulsa,

Oklahoma from 1984; served as a graduate assistant and instructor of reading courses, Department of Curriculum and Instruction, Oklahoma State University from August, 1985 to January, 1986 and from August 1987 to May, 1988; Remedial Reading Teacher with Chapter 1 program in Sapulpa Public Schools, Sapulpa, Oklahoma, from 1988 to present.