

A PSYCHOLINGUISTIC INVESTIGATION OF THE CLOZE  
RESPONSES OF GRADE EIGHT STUDENTS

by

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## ABSTRACT

This study, a partial replication of Cram (1980), investigated the function of exact and non-exact replacements of cloze responses in the assessment of reading comprehension. Two modes of discourse, narrative fiction and expository prose, were examined. Subjects were proficient and less proficient grade eight students. Key theoretical assumptions guiding the research stemmed from psycholinguistics; that reading involves responses to the grapho-phonemic, syntactic, and semantic cue systems of language (Goodman, 1976a); and from discourse analysis theory; that a 'schema' or cognitive map directs the reader in the search for discourse cues (Winograd, 1977).

Subjects were completing grade eight (N = 61) in a small junior secondary school in Surrey, British Columbia. Only subjects whose primary language was English, qualified. Good (N = 19) and poor (N = 19) readers were identified from the sum of scores on the comprehension and vocabulary subtests of the Nelson Reading Skills Test (1977). Exact replacements (E.R.'s) of 61 subjects were examined. Non-exact replacements (N.E.R.'s) of good (N = 19) and poor (N = 19) readers were also analysed. Each subject completed two cloze tasks: a narrative fiction and an expository prose, from the British Columbia Reading Assessment 1977, Grade 8.

Responses were examined for exact match to the author's word (Bormuth, 1976). An adaptation of the Cram Reading Assessment Method was used to evaluate N.E.R.'s. Statistical procedures included correlation, independent t-tests and two way analysis of variance.

Correlations between the standardized measure and exact cloze scores were significant, particularly for the narrative mode. For both good and poor readers, exact narrative scores were significantly greater than exact expository scores. Poor readers were differentiated from good readers. Scores for both good and poor readers on grammatical function, semantic acceptability and discourse acceptability were significantly greater for narrative fiction than expository prose. Poor readers obtained a significantly higher mean on narrative fiction when compared to expository prose on syntactic acceptability. Data based conclusions were (1) cloze comprehension scores differed for narrative fiction and expository prose modes of discourse, and (2) exact cloze scores discriminated between proficiency levels.

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## CHAPTER I

### INTRODUCTION AND STATEMENT OF THE PROBLEM

Many students in today's classrooms cannot function because they can't seem to learn from the materials the teachers assign... These students may know the fundamentals of reading, but can't apply their reading to gain information from their classroom texts. (Singer & Doulan, 1980, p.1)

The variability of the reading process across different types of materials deserves careful study. Understanding the nature and degree of such variability has direct implications for teaching strategies (Stansell, Harste, De Santi, 1978). It is important to teachers that research be conducted to gain an understanding of the problems created by the particular reading demands of various subjects. The major difficulty in reading problems appears to be related to the forms of language.

The cloze procedure is a psycholinguistic technique which is potentially useful to study the role of language in reading. Introduced by Wilson Taylor in 1953, the cloze procedure has been widely used to analyse silent reading responses to a systematic deletion of words in a passage. "Cloze" is derived from "closure", a term from gestalt psychology which reflects the human tendency of mentally completing gaps to project the whole. To make cloze responses in language the reader must have a grasp of the language structures (syntactic structures) and an understanding of the substance and tone (semantics) of the passage. For example, "pigs oink but cows\_\_\_\_\_" effects the answer "moo" based on contextual clues within the sentence. To complete this sentence requires a knowledge of the pattern of letters in each of five words,



the pattern of symbol-meaning, the meanings attributed to combinations of the words, and the fact that the structure demands a term parallel to "oink" but associated with cows instead of pigs. The cloze procedure takes a measure of the likeness between the patterns the reader is anticipating while he/she is reading and the patterns a writer has used.

Agreeing with the value of cloze, Simons (1971) stated:

Process oriented research is motivated by the assumption that the effectiveness of an instructional technique is in part dependent on the extent to which those techniques capitalize on the actual psychological processes which students utilize in learning. (p. 340)

The study of reading processes as well as the diagnosis of readers' strengths and weaknesses is an important method for ultimately improving instruction.

#### Statement of the Problem

Little research has been done on the response of students to cues in differing modes of discourse. Cram (1980) made a comparison of the differences in responses to cloze tasks between modes of language: narrative fiction and expository prose. In an exploratory study, Cram investigated the role of exact and non-exact replacements of cloze responses in the assessment of reading comprehension. Exact replacements were words that were the same as used by the author in the original text. Non-exact replacements were words that were different. Key theoretical assumptions guiding the research stemmed from psycholinguistics, miscue analysis, and discourse analysis theory.

The use of oral miscues was introduced by Kenneth Goodman in the mid 1960's. Led by Weber's (1968) documentation of the inadequacy of existing schemes for studying responses in terms of errors only, Goodman (1970) proposed that the study of oral reading errors can be used as a 'window' to the silent reading process. Goodman (1965) found

that readers in grades one to three made almost all their repetitions in order to correct an error. These miscues were not random but were cued by a language thought-interaction. K. Goodman (1969, 1976a, 1976c) summarized his analysis in two main instruments: The Goodman Taxonomy of Reading Miscues and the Reading Miscue Inventory (RMI) in collaboration with Yetta Goodman and Carolyn Burke (1972a, 1972b).

Goodman (1976b) recommended the use of in-depth studies with small samples. He emphasized: "Real people using real language in various real situations must be the objects of research if we are to understand reading as it really is" (p. 98). This is analogous to the "naturalistic" research method explored by Cambourne (1976). In miscue analysis the deviations from the exact responses of printed text are evaluated for the degree to which meaning is disrupted. The taxonomy and inventory are based on the belief that the quality of miscues is more important than the quantity. Strengths, not weaknesses, are indicated by some miscues.

In discourse analysis a "schema" or cognitive map directs the reader in the search for discourse cues (Winograd, 1977).

Cram studied students from Vancouver, Canada who were entering grade 9 (N = 107) and 12 (N = 100). Only subjects whose first language was English were used to examine cloze replacements and attitudes to reading. A random sample at each grade level of Good (N = 20) and Poor (N = 20) readers provided data. Proficiency level was determined from scores on the comprehension subtest of the Iowa Silent Reading Test (1973). Good readers were identified from those students whose scores ranked between the 65th and 95th percentile. Poor readers were selected from those students whose scores ranked between the 5th and 33rd percentile. Cram adapted the Cambourne Reading Assessment Procedure (1978),

based on the Goodman Taxonomy of Reading Miscues (1969) to evaluate non-exact replacements. A 2 x 2 factorial design (narrative x expository; good x poor) was used. Statistical procedures included correlation, independent t-tests, and two way analysis of variance. A synonym replacement for the exact response was acceptable in three categories: syntax, semantics and discourse. To verify how linguistic cues triggered responses, retrospective verbalizations were taped and transcribed. Subjects were randomly drawn from each proficiency group. Frequency of response was analysed using the chi-square statistic qualitative description.

Results of Cram's study indicated that exact cloze scores differentiated between good and poor readers to the same extent as the Iowa test. Exact cloze narrative scores exceeded expository prose scores ( $p < .001$ ). Good readers were differentiated from poor readers ( $p < .001$ ). Proficiency levels were also discriminated by the non-exact replacement score. Surprisingly, attitude to reading had a generally weak correlation with the cloze scores. For grade nine readers, exact cloze narrative fiction scores exceeded expository prose ( $p < .001$ ) but for grade twelve the differences were not significant.

The interviews showed that the three cue systems used most frequently were: syntax, semantics, and discourse. The two cue systems least frequently used were grammatical function and life experience. Between modes of discourse and proficiency levels significant differences were found.

Using combined exact scores plus synonyms, Cram found in grade nine, narrative fiction scores exceeded prose, but in grade twelve the reverse occurred. Good readers were significantly superior with expository prose.

Cram stated six conclusions:

1. attitude is not correlated with either proficiency or comprehension
2. comprehension scores differed across modes of discourse: narrative fiction and expository prose
3. exact cloze scores discriminated between proficiency levels
4. non-exact scores revealed differences in the use of cue systems by ability groups
5. all readers used the same cue systems: syntax, semantics, discourse, to gain meaning; but control of the set of cue systems, especially with expository prose, distinguished the good reader
6. the addition of synonym scores to exact cloze scores differentiated between proficiency levels, modes of discourse and maturity levels.

(Cram, p. IV)

Expository prose was less easily processed than narrative fiction.

Especially for the less proficient and mature reader, a "story grammar" (Rumelhart, 1975), or the thematized elements (Cram, 1980) facilitated understanding. The grade 12 readers had greater control over the expository prose than the grade 8 readers. Experience with content materials eased the effect on comprehension scores of mode of discourse for the grade twelve student.

Cram suggests, as a practical tool, the cloze procedure provides a reasonably accurate and convenient diagnosis of reading levels. As an initial group screening device, exact cloze scores have value (Hittleman, 1978; Cram, 1980). Cram's (1980) results of analysis on non-exact replacements indicated that at both grade levels, good readers were more efficient than poor readers in the use of grammatical function, syntactic, semantic and discourse cues. This taxonomy appears to integrate the advantages of miscue analysis and cloze procedure.

The taxonomy used by Cram for determining the acceptability of synonyms evaluates discourse awareness (Cram, 1980). The findings demonstrated the effectiveness of using synonyms in the evaluation of

reading by cloze tests (Vaughan, Tierney and Alports, 1977; Cambourne, 1979). The addition of the complete discourse acceptability score to the exact cloze score appeared to affect the criterion levels established by Bormuth (1968). This combination of exact score and the number of acceptable synonyms indicated instructional levels in modes of discourse.

Cram has made a number of significant recommendations. These are important to future research as well as secondary school instruction. The difference in the ability of good and poor readers to gain meaning from expository or narrative passages deserves more study. The value of combining cloze procedure and miscue analysis has been demonstrated. Further investigation of the practical application of this combination is needed (Ekwall, 1976, p.290). Cram recommends the cloze test as an instructional and research device. Cram's taxonomy may be a useful tool to find instructional levels in modes of discourse. She suggests the elimination of the grammatical function classification. The evaluation of acceptability of synonyms for syntax, semantics, and discourse could be simplified from "yes", "partial" categories, "no" to either "yes" or "no".

A replication of Cram's study is worthwhile. A significant beginning has been made to base line research using cloze procedure, miscue analysis, reading ability and mode of discourse. She suggests replication with other samples is needed to determine whether or not the findings can be generalized. Replication can help determine the validity of the classification scheme of the taxonomy. Findings in this research may prove vital to teaching and diagnosis in the secondary school. The present study was designed to partially replicate Cram's (1980) research. The taxonomy is modified as she suggested.

Similar to the Cram study, this research was to:

Investigate the responses in reading of secondary school students to establish a better perspective on the comprehension process. Specifically, the primary purpose was to examine whether or not the acceptability of responses to cloze tasks varies with two modes of discourse: narrative fiction and expository prose.

(p.3)

### Research Variables

The independent variables were:

1. Mode of discourse - narrative fiction and expository prose
2. level of proficiency - good and poor.

The dependent variables were:

1. the exact replacement cloze scores
2. the non-exact replacement cloze scores in four categories:
  - (a) grammatical function
  - (b) syntactic acceptability
  - (c) semantic acceptability
  - (d) discourse acceptability
3. complete discourse acceptability scores

Responses were acceptable in three categories:

- (a) syntactic acceptability
- (b) semantic acceptability
- (c) discourse acceptability

### Research Questions and Hypotheses

Since this study is a partial replication of Cram (1980), the decision was made to use the same research questions and similar hypotheses as she did. They are the following (pp. 22-23):

#### Research Question 1.

"Are there correlational relationships among selected indices of reading comprehension"...for secondary students in grade eight?

#### Hypothesis 1.1

There are significant correlational relationships among  
(1) scores on a reading comprehension measure, (2) the number

of exact replacements of cloze responses in narrative fiction, mode of discourse, and (3) the number of exact replacements of cloze responses in expository prose mode of discourse.

### Research Question 2.

"Does the subject comprehension vary with mode of discourse?"

#### Hypothesis 2.1

There is a significant difference in reading comprehension between the narrative fiction mode of discourse and the expository prose mode of discourse, as measured by the number of (1) exact replacements of cloze responses and (2) non-exact replacements of cloze responses over given levels of...proficiency.

### Research Question 3.

"Do students at two levels of proficiency, good and poor vary in comprehension?"

#### Hypothesis 3.1

There is a significant difference in reading comprehension between good readers and poor readers as measured by the number of exact replacements of cloze responses over given reading selections....

### Research Question 4.

"Is there significant interaction between mode of discourse and proficiency level?"

#### Hypothesis 4.1

There are significant differences across modes of discourse (narrative fiction and expository prose) and proficiency levels (good and poor)...in the number of exact replacements of cloze responses.

### Limitations of the Study

1. The findings were limited to the two types of discourse used: narrative and expository.
2. The findings were limited to the one passage used.
3. Subjects were only those who were native speakers of English.
4. Since they had to complete a cloze task, subjects were exposed to an artificial reading situation. This may not be similar to the process an individual may have in independent reading.

### Definitions

The following definitions were used (pp. 25-26):

1. Comprehension refers to the responses of the reader to written language, as measured by the number of exact replacements of cloze deletions and by the number of non-exact replacements of cloze deletions in four categories: grammatical function, syntactic acceptability, semantic acceptability, and discourse acceptability.
2. A response is a purposeful, rule-based procedure for the comprehension of a written language.
3. Grammatical function refers to the part of speech of the cloze response: that is, noun, pronoun, verb, adjective, adverb, preposition, coordinate conjunction, subordinate conjunction, article, interjection, as evaluated on a scale of:
  1. Y Yes
  2. N No
4. The syntactic acceptability of the non-exact replacements means that the cloze response accords with the linguistic judgement of native speakers, as evaluated on a scale of:
  1. Y Yes, the complete T-unit is acceptable
  2. N No, syntactically unacceptable
5. The semantic acceptability of the non-exact replacement is an evaluation of the congruency of meaning of the cloze response with the context of the sentence, as measured on a scale of:
  1. Y Yes, at the whole sentence level
  2. N No, unacceptable semantically
6. Discourse acceptability of the non-exact replacement is an evaluation of the congruency of the meaning of the cloze response with the context of the complete passage, according to the mode of discourse, as measured by a scale of:
  1. Y Yes. The meaning is intact at the whole discourse level.
  2. N No. Totally incongruous to the discourse.
7. A T-unit is described as "one main clause plus any subordinate clause or non clausal structure imbedded in it" (Hunt, 1970, p.4).
8. Discourse refers to a self-contained sequence of connected sentences that constitutes either a complete story (narrative fiction) or a coherent explanation of a particular topic (expository prose).



9. Narrative fiction refers to the convention of a sequence of connected sentences which tell a story. A simple plot may involve a problem facing a main character, a sequence of attempts by the main character to solve the problem, and an eventual resolution.
10. Expository prose refers to the convention of a sequence of connected sentences which is an explanation or description of a particular topic and is characterized by rhetorical devices such as "therefore", that convey patterns of reasoning.
11. Discourse analysis refers to a method for explication of a text and the cognitive structures and processes of language users (Winograd, 1977) according to a schema.
12. A schema is a body of related knowledge to be used in reasoning.
13. Miscues are deviations from the printed text in oral reading.
14. Exact replacements(E.R.'s) are the exact match to the author's word which has been deleted in a cloze test.
15. Non-exact replacements (N.E.R.'s) are the replacements which differ from the exact word deleted.

### Summary

Research on the process of learning from text is of theoretical and practical importance (Pearson, 1978). Secondary students must do a progressively greater amount of their learning from text materials. The cloze procedure and miscue analysis may be useful in studying this problem. Cram's (1980) investigation of the cloze responses of grade 9 and grade 12 readers also indicated the essence for further study in this area. This study was therefore designed to continue this vitally significant research.

### Organization of the Study

The report of the study is structured as follows.

1. Chapter II contains a review of the related literature.
2. Chapter III contains a description of the design, the data collection and the procedures.

3. Chapter IV contains a statement of the quantitative analysis of the findings of the investigation.
4. Chapter V contains a summary of the study, discussion of the findings, conclusions and implications for teaching and further research.

## CHAPTER II

### REVIEW OF THE LITERATURE

The purpose of this chapter is to provide a thorough review of the research investigating the comprehension process by the qualitative analysis of responses to written language. Limitations of the skills model and measurement in reading are discussed. An identification of the area vital to the study: psycholinguistic theory is next. Studies concerned with responses as miscues and as cloze responses follow. Research that compares silent reading strategies of good and poor readers is summarized. Significant developments in discourse analysis are identified with the purpose of disclosing the possibility of examining responses in terms of the organization of the whole passage.

#### Evaluations in the Problem Area

##### The Skills Model

Many reading researchers (Simons, 1971; Johnson & Pearson, 1975; Palmer, 1979) consider the enumeration of lists of comprehension skills- or skills model the best way to describe and understand the reading comprehension process. However this research has been problematic. One major problem is the lack of agreement with regard to the definition of terms (Shafer, 1978; Emans, 1979). Stern (1973) found four key uses of the term "comprehension":

1. 'comprehension' is used as degrees or levels of grasping the meaning of the printed page;
2. 'comprehension' is used as a set of skills and abilities which can be measured;
3. 'comprehension' is used as grasping the meaning of various linguistic units;
4. 'comprehension' is used as a process equivalent to thinking or understanding. (p. 256)

This ambiguity in the term comprehension is obviously critical. If it is not clear what comprehension is, the lists of skills that are required for comprehension must necessarily be vague.

Another limitation of the skills model lies in the organization of the skills into taxonomies (Palmer, 1979). Simons, (1971), stated that "the advantage of systematic organization..., may be more imagined than real." (p. 343). Johnson and Pearson (1975) suggest an orderly logical progression of skills is a "pedagogical convenience" that ignores the difficulty of the material in comprehension and the role of the purpose in reading. These hierarchical components may suggest greater precision than the classification system really possesses.

Simons (1971) further argued:

...that the setting up of categories of skills has not aided us greatly in understanding the reading comprehension process because of a basic confusion over the precise behaviour and cognitive domain of these skills. This had led to the naming of skills which are global and vague in nature and which have failed to distinguish between: (1) reading and thinking: (2) the objects and processes of comprehension: (3) the use of comprehension, the procedures for teaching comprehension, and the psychological processes involved in comprehension. (p. 346)

The programs based on taxonomic models do..."not seem to be fulfilling their mission" (Shafer, 1978, p. 310). Perhaps this inability to define comprehension is due to the lack of a theoretical framework (Simons, p. 340). Language is the missing element. The inclusion of language extends the understanding of reading to a process which is centred on meaning. The skills models fail"...to deal with how language is structured within different modes of discourse" (Palmer, 1979, p. 9).

### Measurement

A strong plea has been made to measure meaningful learning in written text (Anderson, 1971; Simons 1971; Bleakley & Johnson, 1978).

This task is so complex a variety of assessment devices have been suggested. The most popular method of measuring the comprehension process has been through norm-referenced standardized tests (Simons, 1971, p.346) but these, while satisfactory as screening tools, lack content and construct validity of specific skills (Goodman, 1968; Guzak, 1970).

Informal measures that judge reading performance over a number of different occasions may be more reliable and valid measures (Farr, 1969). Recently, research has led to the development of new methods of measuring reading comprehension using miscue analysis, cloze procedure, and the Cambourne Reading Assessment Procedure (1978), a method which combines the two procedures. These are based in psycholinguistic theory.

#### Psycholinguistic Theory

The search for understanding of the comprehension process has led to an interest in the parallels between reading acquisition and language acquisition. This led to the development of psycholinguistic models (Smith, 1971; Y. Goodman & Burke, 1982; K. Goodman, 1973).

Shafer (1978) concluded:

Stated simply, in the psycholinguistic model, the reader is a continual seeker after meaning. The brain is constantly going through a decision making process to decide what's out there in terms of incoming information and prior expectations, constantly attempting to reduce uncertainty by applying what is already known from previous experience to each incoming message. (p.310)

Goodman (1968) stated that reading is an integrated response to three kinds of cue systems. First, the grapho-phonetic cues come from the visual information of the printed symbols. The fluent reader makes only minimal use of these cues and goes directly to meaning. For this meaning the reader uses his "non-visual storehouse of knowledge of language and experience with the conventions of the printed page which

are stored in 'cognitive structures' in the brain" (Cram, 1980, p.33). The second cueing system is thus the syntactic. Cues reflecting the patterns and consistencies of print are called "redundancies" (Shafer, p.312). The third cueing system, also non-visual, is the semantic. Cues are provided by the context of the entire sentence and by the mode of discourse, or the pattern of organization of the whole passage. This psycholinguistic theory has formed the framework of numerous studies.

#### Content Area Studies using Miscue Analysis

A number of researchers have used the R.M.I. to explore the effect of content on oral reading patterns. Carlson (1970), studying the reading process of three boys and three girls in grade four reading science, social studies and basal readers, found a shift to greater concentration on syntactic cues with content area materials. Brazee, (1976) supported Carlson's results in his qualitative and quantitative description of grade eight students reading in narrative fiction and expository prose. Brazee concluded that his readers attained a higher comprehension level and used more effective reading strategies in the narrative mode.

Kolczynski (1973) used the R.M.I. to analyse miscues of readers encountering the language patterns found in science, mathematics and literature. Kolczynski found that 20 average or above average readers entering grade six made similar use of syntactic and semantic cues. This data does not support Brazee (1976) or Carlson (1970). Similarly, Stansell's (1977) six ninth graders tended to be unaware of the basic differences between expository and narrative passages.

### Limitations of Miscue Analysis

Although miscue analysis can give researchers much information about the reading process, limitations in its value do exist. Oral reading observations are only surface observations of the reading process, giving only a glimpse of what is going on (Page, 1976). Blustein (1977) found an important difference between oral and silent reading and indicated the importance of considering the strategies for each separately.

Cambourne (1977), therefore suggested that the cloze procedure could be used to obtain insight into silent reading process.

### The Cloze Procedure

Simons (1971) suggested the cloze test is a better measure of reading comprehension than traditional tests. More specifically, Rankin (1978) described five points to support this contention.

First, cloze tests are intrinsic measures of the effectiveness of communication by sampling the degree of correspondence between a message source and a receiver. Substantially the same results are obtained whether the scoring is done by exact word method or by the synonym method. (p. 151)

Second, cloze tests measure comprehension in process, not as a product after the event. Third, cloze responses are based upon the psycholinguistic process of inference, fundamental to all communication.

Fourth, cloze tests randomly sample the choice points for predictability within a message. Fifth, cloze tests can be replicated precisely.

The cloze tests have been demonstrated to be a valid measure of reading passage difficulty, reading ability, and reading comprehension (Taylor (1953; Bormuth, 1967; Bormuth, 1968; Rankin and Culhane, 1969; Bormuth, 1963; Bormuth, 1969)).

### Reading Ability

The use of cloze procedure for studying strategies of good and poor readers has been demonstrated. Cambourne (1977) produced a silent reading version of the R.M.I. (Goodman & Burke, 1972a) in his study of 39 grade three and four children. He discovered that high ability readers scored higher than poorer readers on cloze passages with respect to grammatically, syntactically and semantically acceptable errors. Proficient readers scanned both forward and back to control meaning at the whole story level. Poorer readers contained focus to a smaller unit of meaning. Guthrie's (1973), results indicated the pattern of errors (use of syntactic cues) of 36 subjects with a mean age of 9.99 years did not differ between good and poor readers although the good readers made more correct responses than did the poor readers. Neville and Pugh (1976) studied errors of a sample of 130 children. The authors showed that low ability readers performed similarly on a Reading Cloze Task, Listening Cloze Task and a Restricted Reading Cloze Task. With high ability readers, the scores were higher on the Reading Cloze Task. This indicated that the good readers have developed superior reading strategies and are more flexible in their search for meaning in a passage. Weaver (1978) investigated silent reading errors of grade three children and found that poor readers made more errors and more incorrect form class errors than good readers. The cloze procedure has indicated differences in good and poor readers' strategies.

### Limitations of Cloze Procedure

Rankin (1978) stated that cloze tests may not easily be applied to the measurement of specifically defined language comprehension processes. Similarly, Hittleman (1978) found that cloze tests measure "global" aspects of comprehension. Further, a study by Smith-Burke,



Gingrich and Eagleeye (1978) revealed that lexical items were more difficult to replace in narrative material than in expository material for 53 grade eleven and 40 grade twelve readers. The researchers suggested that deletion patterns based on a linguistic model may better measure contextual build-up in connected discourse. Despite these limitations there is strong evidence that the cloze procedure is a useful tool for research and objective testing. Theubald (1973) proposed a method be established for analyzing the syntactic and semantic cue systems by combining the Reading Miscue Inventory and cloze. This review of research from miscue analysis and cloze has demonstrated that these methods are worthwhile tools to investigate study responses to the word and sentence level. Recent developments in discourse analysis extend this investigation to the whole level of discourse.

### Discourse Analysis

This section reviews literature in discourse analysis to complete the theoretical background of this study: that examines comprehension in two modes of discourse, narrative fiction and expository prose.

Readers learn from text by using their general information, their knowledge of sequences of events, their semantic and conceptual abilities and their reasoning capacities to interact with information gleaned from the text. (Singer & Donlan, 1980, p.39)

This statement reflects the recent observations, not yet formulated into theory, of Winograd (1972), Rumelhart (1976) and Anderson (1977). From the fields of linguistics, cognitive psychology and artificial intelligence have come research in 'natural language' that provide a beginning framework for studying discourse.

The term "discourse" has been used to refer to numerous loosely related problems. Winograd (1977) found over 60 technical terms in

a scan of the literature such as text, context, background, text grammar, communicative dynamism, episode, relevance (p.64).

There are two approaches to the study of discourse helpful in the study of comprehension. One, emphasizing the psychological processes, focuses on the cognitive or processing structure of the language user. The other, stressing linguistic structure, concentrates on the structural form of the discourse itself.

### Theories of Discourse

#### Cognitive Approach

The problem of studying discourse can be seen as one of understanding the cognitive processes of language production and comprehension (Anderson, 1977; Rumelhart, 1977; Winograd, 1977). In this view, "knowledge a person already possesses has a potent influence on what he or she will learn and remember from exposure to discourse" (Anderson, 1977, p.67). Knowledge is stored in abstract structures called schemata each having a slot for each fact. These schemata are guides in a process of "pattern recognition." To comprehend is to identify known discourse and reasoning patterns. To comprehend is to predict and confirm a passage content. Reading is essentially a "top-down" (Kintsch, 1977) or "conceptually driven" process similar to Goodman's (1976) "psycholinguistic guessing game". The greater the knowledge of the pattern of discourse, the easier the comprehension.

#### Patterns of Discourse

Rhetorical schemas. Difficulties with comprehension of textbooks and other school learning materials may be lodged in the text alone (Olson, 1977a). Patterns of reasoning, often contained in textbooks, are called rhetorical schemas (Winograd, 1977, p. 82). Language provides

a number of devices to communicate these schemas. Some are signalled directly by words indicating causality such as, "because"; summation, "therefore"; sequence, "first" and "second"; and change of ideas, "although". Others, at a large scale level, are for organizing exposition and arguments. These conventional schemas, such as cause-effect, rigid order, comparison, problem-solution, may be used differently in different disciplines (Robinson, 1975).

Narrative schemas. "Within any language and culture there is a set of schemas for relating narratives of events, either from the memory of the speaker or as a story about someone else" (Winograd, 1977, p.83), for example: time sequence, plans, causality and action form the organization of the story. Rumelhart (1975) divided the structure of the story (or "story grammar") into a sequence of episodes, states, events and plans that he named problem-solving episodes. Winograd (1977) and Grimes (1975) speculated that any narrative text is the product of "several interacting structures" (Winograd, p.84), some dealing with time flow, explanation of causality or conventions for story telling, In addition, some schemas such as flashbacks or standard schemas for establishing author's point of view that are highly culturally dependent (Kintsch & Greene, 1978).

Problems in comprehension go beyond the word or sentence level of the text to the complete organization of the passage. Schemas may be contained in the cognitive structure of the language user or in the conventions of the form of discourse. Efficient use of schemas aids comprehension. It appears that the greater familiarity most readers have with narrative schemas results in facilitation of comprehension in this area.

### Summary

The review of the literature provides a theoretical base for research in the study of cloze responses over modes of discourse. Difficulties with the skills model and the use of a limited number of measuring techniques were discussed. Psycholinguistic theory, was presented as a rationale to overcome research problems. Analysis of responses in a natural reading situation using miscue analysis and cloze procedure prove valuable. Discourse theory extends the analysis to the whole organization of the passage facilitating a comparison of the comprehension process between modes of discourse.

## CHAPTER III

### METHODOLOGY

The design of this descriptive field study reflected the main purpose of investigating the reading comprehension process by examining the responses of grade eight readers in relation to two factors: level of proficiency and mode of discourse. This study considered (1) the exact replacements of cloze responses, and (2) the non-exact replacements of cloze responses.

The purpose of this chapter is to describe the research design, procedures for selection of population sample, instrumentation collection of experimental data and treatment of the data. Hypotheses tested are included.

#### Research Design

Congruent with Cram (1980), the research design was a 2 x 2 factorial design.

Factor A: 2 modes of discourse, narrative fiction and expository prose. Fixed Effect.

Factor B: 2 levels of proficiency, good and poor.  
Fixed Effect. (p.59)

Cram schematically represented the design as follows:

		Mode of discourse (Factor A)	
		1 Narrative	2 Expository
Proficiency (Factor B)	1. Good Readers		
	2. Poor Readers		

### The Population Sample

To replicate a section of the study by Cram (1980), a sample of grade eight students was tested in late May, 1980. It was assumed that this sample would correspond to Cram's students "entering grade nine" (p.ii). Since the study is an in-depth investigation, only subjects from one school were selected. The subjects attended Newton Junior Secondary School, Surrey, B. C. From this population two samples were drawn.

#### Selection of Sample 1

Following Cram's procedure, to investigate exact cloze replacements, the entire population of grade 8 ( $N = 74$ ) was tested. To eliminate possible second language interference, only Native English language students remained in the sample. The final sample for investigating exact cloze scores was reduced to  $N = 61$ .

#### Selection of Sample 2

To investigate the performance of students at two levels of proficiency a further sample was necessary.

To study both exact and non-exact replacements of cloze deletions of good and poor readers a sample of  $N = 38$  (good  $N = 19$ , poor  $N = 19$ ) was selected. The instrument used to group readers into proficiency levels was the Nelson Reading Skills Test, Form 3C (NRST). This test was administered on a school wide basis as a School Board procedure June 12, 1980. It was scored by computer services. A total raw score was calculated by adding the comprehension score and vocabulary score. The good readers obtained a score of 61 or greater whereas the poor readers had a score of 50 or less. With these selection criteria there was enough difference between good and poor readers to differentiate reading ability.

### Instrumentation

The materials and cloze tests were the same as were used by Cram (1980) for her grade 9's.

#### Materials

The research passages were reproduced from tests used for the British Columbia Reading Assessment, Grade 8. The "passages have a readability level of approximately grade 8 (Report 1: Test Results) established by the Fry Readability Formula and were written by Canadian authors" (p. 62). The passages were:

- a) "A Kind of Courage"--Narrative Fiction
- b) "Australian Cities"--Expository Prose

#### Cloze Passages

The cloze passages were developed in the following way:

The test passages were typed according to the standard format with fifth word deletions (Bormuth, 1976, pp.68-69). The 50 deletions were selected from the 250 words in the final portion of each selection at a point judged suitable by this investigator. (Cram, p.63)

### Procedures

The collection of the data was conducted in two stages. In the first stage both research passages, narrative fiction and expository prose, were administered to three grade 8 classes during their science teaching block of that day (Appendix A). To overcome order effect half the tests began with the narrative passage and half the tests began with the expository passage. This researcher explained clear written test administration instructions to the two teachers in one half hour session. The students were to complete the sample test, read the completed paragraphs and complete the cloze passages by guessing what word was left out of each space and writing that word in that space. Instructions and completion of the testing took one hour.

### Data Processing

The statistical procedures used in the analysis of the data from exact replacements of cloze and non-exact replacements of cloze responses were the same as were used by Cram (1980).

#### Exact Cloze Scores

1. Correlation. Exact cloze scores on narrative fiction and on expository prose were correlated with scores on the Nelson Reading Skills Test using the Step-Wise regression,  $N = 61$ .

2. Comparison of means. Means and standard deviations were computed for  $N = 61$  for exact cloze scores on each mode of discourse. For each pair of means,  $t$  values were calculated.

3. Analysis of variance. Means of exact cloze scores of the good and poor readers,  $N = 38$ , were examined by the analysis of variance (Table 3.1) based on the  $2 \times 2$  factorial design, fixed effects model.

TABLE 3.1

SOURCES OF VARIANCE AND DEGREES OF FREEDOM FOR A  $2 \times 2$   
FACTORIAL RANDOMIZED DESIGN, FIXED EFFECTS MODEL

Source	df		
Modes of Discourse	$(A_1A_2)$	$(p-1)$	$= 1$
Levels of Proficiency	$(B_1B_2)$	$(q-1)$	$= 1$
Interaction	$(A,B)$	$(p-1)(q-1)$	$= 1$
Within Cells		$N-pq$	$= \underline{N-4}$
	Total		$N-1$



### Non-Exact Cloze Replacements

Each non-exact replacement was analyzed according to a modified Cram reading assessment method (pp. 171-172) which included the four categories of grammatical function, syntactic acceptability, semantic acceptability, and discourse acceptability on each mode of discourse: narrative fiction and expository prose. An adaptation to the system of classification was made to reflect a suggestion by Cram: categories of the taxonomy simplified to "yes" and "no" coding only (Appendix B). Cram stated that "The extra information did not warrant the difficulty in scoring..." (p. 124).

The mean and standard deviation were calculated for each category. Since Cram used partial evaluations she found it necessary to use a weighting system. Cram recommended that the partial not be used, thus her weighting system was not required in this study. However a modified weighting system was developed for each category as follows:

$$\frac{1 \times \text{Total 'Yes'}}{1 \times \text{NER's}}$$

### Statistical Procedures

1. Comparison of means. To determine the existence of statistically significant differences, t values were computed between means of non-exact replacements of cloze responses on modes of discourse, narrative fiction and expository prose, for good and poor readers.

2. Analysis of variance. To examine the difference among means of the exact cloze scores analysis of variance was used, based on the 2 x 2 factorial design. For the null hypotheses the level of rejection was  $p < .05$  (p. 66).

## Non-Exact replacement scoring Reliability.

To ensure standardization of analysis of non-exact replacements of cloze responses, copies of Cram's analysis sheets for each student and each mode were obtained and used as a basis for judgements. Thus the analysis resembled that of Cram.

### Hypotheses

Analogous to Cram (1980), for the research question the following null hypotheses were formulated (pp. 68-72).

#### Research Question 1

"Are there correlational relationships among selected indices of reading comprehension...for secondary school students"...in grade eight?

#### Hypotheses 1.1

There is no statistically significant correlation between scores on a reading comprehension measure and (1) the number of exact replacements of cloze responses in narrative fiction or (2) the number of exact replacements of cloze responses in expository prose....

##### i) Hypothesis 1.11.

There is no statistically significant correlation between scores on the criterion measure (NRST) and the exact cloze narrative scores (ECN)....

##### ii) Hypothesis 1.12.

There is no statistically significant correlation between scores on the criterion measure (NRST) and the exact cloze expository scores (ECE)....

#### Hypothesis 1.2

There is no statistically significant correlation between (1) the number of exact replacements of cloze responses in narrative fiction and (2) the number of exact replacements of cloze responses in expository prose....

#### Hypothesis 1.3

There are no statistically significant correlations among (1) scores on a criterion measure, (2) the number of exact replacements of cloze responses in narrative fiction and (3), the number of exact replacements of cloze responses in expository prose,...over given proficiency...levels.

i) Hypothesis 1.31.

There is no statistically significant correlation between scores on the criterion measure (NRST) and exact cloze narrative (ECN) for good and poor readers.

ii) Hypothesis 1.32.

There is no statistically significant correlation between scores on the criterion measure (NRST) and exact cloze expository scores (ECE) for good and poor readers.

iii) Hypothesis 1.33.

There is no statistically significant correlation between the exact cloze narrative scores (ECN) and the exact cloze expository scores (ECE) for good and poor readers.

Research Question 2

"Does subject comprehension vary with mode of discourse?"

Hypothesis 2.1

There is no statistically significant difference in mean reading comprehension scores between the narrative fiction mode of discourse and the expository prose mode, as measured by (1) exact replacements of cloze responses and (2) non-exact replacements, over given levels of proficiency.

i) Hypothesis 2.11.

There is no statistically significant difference between mean scores over modes of discourse as measured by the number of exact replacements of cloze responses for subjects at good or poor levels of proficiency....

ii) Hypothesis 2.12.

There is no statistically significant difference between... mean scores over modes of discourse as measured by the number of non-exact replacements (N.E.R.) of cloze responses on each of four variables: (1) grammatical function, (2) syntactic acceptability, (3) semantic acceptability, and (4) discourse acceptability, for subjects at good or poor levels of proficiency.

Research Question 3

"Do students at two levels of proficiency, good and poor, vary in comprehension?"

Hypothesis 3.1

There is no statistically significant difference in reading comprehension between good and poor readers, as measured by the number of exact replacements of cloze responses....

i) Hypothesis 3.11.

There is no statistically significant main effect due to proficiency, good and poor readers, as measured by the number of exact cloze responses....

ii) Hypothesis 3.12.

There is no statistically significant main effect due to mode of discourse, narrative fiction and expository prose, as measured by the number of exact cloze responses....

Research Question 4

"Is there an interaction between mode of discourse and proficiency level?"

Hypothesis 4.1

There is no statistically significant interaction between modes of discourse (narrative fiction and expository prose) and proficiency levels (good and poor)...., based on the number of exact replacements of cloze responses.

Summary

This study, a partial replication of Cram (1980), was designed to investigate cloze responses to passages in two modes of discourse: expository prose and narrative fiction, over good and poor proficiency levels.

Correlation and parametric statistics were used to analyse the data from exact and non-exact replacements of the cloze passages in narrative fiction and expository prose for good and poor readers in grade eight.

## CHAPTER IV

### RESULTS

This chapter contains a report of the results of the analysis of cloze responses for the purpose of examining the comprehension process of grade eight students. In terms of null hypotheses each research question was investigated using statistical procedures. Correlational techniques were used to analyse exact replacements of cloze responses of sample 1 ( $N = 61$ ). Further, t-tests and an analysis of variance were used to study exact and non-exact replacements of cloze responses of sample 2 ( $N = 19$  good readers and  $N = 19$  poor readers).

#### Statistical Analyses

##### Research Question 1

Are there correlational relationships among selected indices of reading comprehension for secondary students in grade eight?

Correlation coefficients and a step-wise regression were computed among the following variables: the criterion measure, the Nelson Reading Skills Test (NRST), the cloze scores on narrative fiction (ECN) and on the cloze scores on expository prose (ECE). The following section contains a report on the results in terms of the sample of grade eight readers tested.

##### Hypotheses 1.1

There is no statistically significant correlation between scores on a reading comprehension measure and (1) the number of exact replacements of cloze responses in narrative fiction or (2) the number of exact replacements of cloze responses in expository prose.

This hypothesis was tested for sample 1 ( $N = 61$ ). Complete results are given in Table 4.1.

i) Hypothesis 1.11 There is no statistically significant correlation between scores on the criterion measure (NRST) and exact cloze narrative scores (ECN) for grade eight readers.

A moderate positive correlation ( $r = .49$ ) was statistically significant ( $p < .01$ ). The null hypothesis was rejected.

ii) Hypothesis 1.12 There is no statistically significant correlation between scores on the criterion measure (NRST) and the exact cloze expository score (ECE) for grade eight readers.

A low positive correlation ( $r = .30$ ) was statistically significant ( $p < .05$ ). The null hypothesis was rejected.

### Hypothesis 1.2

There is no statistically significant correlation between (1) the number of exact replacements of cloze responses in narrative fiction and (2) the number of exact replacements of cloze responses in expository prose.

This hypothesis was tested for sample 1 ( $N = 61$ ). As the results presented in Table 4.1 indicate, there was a moderate positive correlation, statistically significant at .01 level of significance ( $r = .43$ ). The null hypothesis was rejected.

### Hypothesis 1.3

There are no statistically significant correlations among (1) scores on a criterion measure, (2) the number of exact replacements of cloze responses in narrative fiction, and (3) the number of exact replacements of cloze responses in expository prose, over given proficiency levels.

TABLE 4.1  
INTERCORRELATIONS AMONG SELECTED INDEXES FOR  
GRADE EIGHT READERS (N = 61)

Measure	Exact Cloze Narrative	Exact Cloze Expository
Nelson Reading Skills Test	.49**	.30*
Exact Cloze Narrative		.43**

\*p < .05

\*\*p < .01

This hypothesis was tested for sample 2 (N = 19 for good readers and N = 19 for poor readers). The results are listed in Table 4.2.

i) Hypothesis 1.31 There is no statistically significant correlation between scores on the criterion measure (NRST) and exact cloze narrative (ECN) for good and poor readers.

For all subjects, a moderated positive correlation ( $r = .66$ , good;  $r = .67$ , poor) showed statistical significance at a .01 level of significance. The null hypothesis was rejected for both good and poor readers.

ii) Hypothesis 1.32 There is no statistically significant correlation between scores on the criterion measure (NRST) and exact cloze expository (ECE) for good and poor readers.

For good readers there was a moderate positive correlation ( $r = .50$ ) at the .05 level of significance. For poor readers a moderate positive correlation ( $r = .52$ ) was statistically significant at the .05 level of significance. The null hypothesis was rejected for both good and poor readers.

iii) Hypothesis 1.33 There is no statistically significant correlation between the exact cloze narrative scores (ECN) and the exact cloze expository scores (ECE) for good and poor readers.

The moderate positive correlation ( $r = .67$ ,  $p < .01$ ) for good subjects was statistically significant. The null hypothesis was rejected; it was accepted for poor readers.

## Research Question 2

Does subject comprehension vary with mode of discourse?

### Hypothesis 2.1

There is no statistically significant difference in mean reading comprehension scores between the narrative fiction mode of discourse and



TABLE 4.2

INTERCORRELATIONS AMONG SELECTED INDEXES FOR GOOD AND  
POOR READERS<sup>a</sup> IN GRADE EIGHT (N = 19)

Measure	Nelson	ECN	ECE
Nelson Reading Skills Test		.66**	.50*
Exact Cloze Narrative (ECN)	.67**		.67**
Exact Cloze Expository (ECE)	.52*	.34	

<sup>a</sup>Upper right side of matrix lists correlation coefficients  
of good readers and the lower side of poor readers.

\*p < .05

\*\*p < .01

the expository prose mode as measured by (1) exact replacements of cloze responses and (2) non-exact replacements, over given levels of proficiency.

This hypothesis was tested for ( $N = 19$ ) good and ( $N = 19$ ) poor readers. Complete results are presented in Tables 4.3 and 4.4.

i) Hypothesis 2.11 There is no statistically significant difference between mean scores over modes of discourse as measured by the number of exact replacements of cloze responses for subjects at good or poor levels of proficiency.

For good readers ( $N = 19$ ), the mean was 48.75 on the narrative mode whereas on the expository mode the mean was 27.74 (Table 4.3). This difference was statistically significant ( $t = 11.87$ ;  $p < .001$ ). For poor readers ( $N = 19$ ), the mean was 36.84 on the narrative mode and 20.11 on the expository mode. Again this difference was statistically significant ( $t = 5.20$ ;  $p < .001$ ). The null hypothesis was rejected.

ii) Hypothesis 2.12 There is no statistically significant difference between mean scores over modes of discourse as measured by the number of non-exact replacements (N.E.R.) of cloze responses on each of the four variables: (1) grammatical function, (2) syntactic acceptability, (3) semantic acceptability, and (4) discourse acceptability for subjects at good or poor levels of proficiency.

To specify how readers at different proficiency levels varied with mode of discourse, t-tests were performed on the scores for each variable. Good readers had greater means on the narrative mode for all four variables. For example, these readers, on discourse acceptability scored a mean of 77.78 on narrative fiction and 47.96 on expository prose ( $t = 10.19$ ,  $p < .001$ ). On grammatical function, semantic acceptability and discourse acceptability, the difference was significant

TABLE 4.3

COMPARISON BETWEEN MEANS OF EXACT CLOZE NARRATIVE (ECN)  
AND EXACT CLOZE EXPOSITORY (ECE) FOR GOOD AND POOR  
READERS IN GRADE EIGHT (N = 19)

Proficiencies	Variables	Means	S.D.	t-values
Good	ECN	48.75	3.99	11.87*
	ECE	27.74	9.5	
Poor	ECN	36.84	12.14	5.20*
	ECE	20.11	12.23	

\*p < .001

TABLE 4.4

COMPARISON BETWEEN MEANS OF NON-EXACT REPLACEMENTS  
OF CLOZE RESPONSES ON MODES OF DISCOURSE BY  
PROFICIENCY LEVEL IN GRADE EIGHT (N = 19)

Modes of Discourse	Grammatical Function	Syntactic Acceptability	Semantic Acceptability	Discourse Acceptability
<u>Good Readers</u>				
Narrative	77.26	83.48	74.45	77.78
Expository ;	61.37	72.96	47.17	47.96
t Value	3.81*	1.94	8.41*	10.19*
<u>Poor Readers</u>				
Narrative	65.67	67.68	57.92	61.75
Expository	36.31	44.18	24.36	24.20
t value	5.54*	3.80*	6.70*	7.36*

\*p < .001

at the .001 level. Poor readers produced significantly higher means on the narrative mode for all variables when compared with the expository mode. For example, poor readers scored means of 57.92 on the narrative mode and 24.36 on the expository mode for discourse acceptability ( $t = 6.70, p < .001$ ).

The null hypothesis was, therefore rejected on three variables: grammatical function, semantic acceptability and discourse acceptability for good and poor subjects. On syntactic acceptability the null hypothesis was rejected for poor readers; it was accepted for good readers.

### Research Question 3

Do students at two levels of proficiency, good and poor, vary in comprehension?

#### Hypothesis 3.1

There is no statistically significant difference in reading comprehension between good and poor readers, as measured by the number of exact replacements of cloze responses. A two way analysis of variance on exact scores was used with Sample 2 ( $N = 19$  for good readers and  $N = 19$  for poor readers) to test this hypothesis. Results are listed in Table 4.5.

i) Hypothesis 3.11 There is no statistically significant main effect due to proficiency, good and poor readers, as measured by the number of exact cloze responses.

The analysis indicated that the main effect due to proficiency was statistically significant ( $F = 12.16, p < .001$ ).

ii) Hypothesis 3.12 There is no statistically significant main effect due to mode of discourse, narrative fiction and expository prose,

TABLE 4.5

ANALYSIS OF VARIANCE OF EXACT CLOZE SCORES OF NARRATIVE  
AND EXPOSITORY MODES BY GOOD AND POOR  
READERS IN GRADE EIGHT

Source	ss	d.f	m.s	F
Between modes	6484.27	1	6484.27	102.91*
Between proficiencies	2042.57	1	2042.57	12.16*
Interaction	57.30	1	57.30	.90
Within groups (residual)	<u>2268.44</u>	<u>36</u>	63.01	
Total	10852.58	39		

\*p < .001

as measured by the number of exact cloze responses.

The main effect due to mode of discourse achieved statistical significance.

The null hypotheses were rejected for proficiency and mode of discourse.

#### Research Question 4

Is there a significant interaction between mode of discourse and proficiency level?

##### Hypothesis 4.1

There is no statistically significant interaction between modes of discourse, (narrative fiction and expository prose) and proficiency levels (good and poor) based on the number of exact replacements of cloze responses.

Results showed there is no significant interaction (Table 4.5) between proficiency and modes of discourse ( $F = .90$ ). The null hypothesis was accepted.

#### Summary

The treatment of the data from the cloze responses of grade eight secondary students to modes of discourse (narrative fiction and expository prose) was described in this chapter. Significant correlations were calculated among the criterion measure: the Nelson Reading Skills Test (NRST), exact cloze scores on narrative fiction and exact cloze scores on expository prose (ECE). The computation of t-values specified significant differences between exact cloze scores on modes of discourse and between non-exact cloze scores on modes of discourse for grammatical function, semantic acceptability and discourse acceptability. Analysis of variance techniques were used to calculate the significant difference between means of the main effects of proficiency level and mode of discourse for exact cloze scores.

## CHAPTER V

### SUMMARY, DISCUSSION, CONCLUSIONS, AND IMPLICATIONS

This study, a partial replication of Cram (1980), was designed to investigate whether or not the acceptability of responses to cloze tasks varies with two modes of discourse: narrative fiction and expository prose. Key theoretical assumptions guiding the research stemmed from psycholinguistics; that reading involves responses to the graphophonemic, syntactic, and semantic cue systems of language (Goodman, 1976a); and from discourse analysis theory; that a "schema" or cognitive map directs the reader in the search for discourse cues (Winograd, 1977).

Subjects were completing grade eight ( $N = 61$ ) in a small junior secondary school in Surrey, British Columbia. Only subjects whose primary language was English, qualified. Good ( $N = 19$ ) and poor ( $N = 19$ ) readers were identified from the sum of scores on the comprehension and vocabulary subtests of the Nelson Reading Skills Test (1977). Exact replacements (E.R.'s) of 61 subjects were examined. Non-exact replacements (N.E.R.'s) of good ( $N = 19$ ) and poor ( $N = 19$ ) readers were also analysed. Each subject completed two cloze tasks: a narrative fiction and an expository prose, from the British Columbia Reading Assessment 1977, Grade 8. To ensure replication of Cram (1980), every effort was made to use similar selection criteria and testing materials.

Responses were examined for exact match to the author's word (Bormuth, 1976). Consistent with Cram's (1980) suggestion, an adaption of the Cram Reading Assessment Method was used to evaluate N.E.R.'s. To analyse the data, correlation, independent t-tests and two-way analysis of variance were used. The design of the study was analogous to Cram (1980).

Correlations between the standardized measure and exact cloze scores were significant, particularly for the narrative mode. For both good and poor readers, exact narrative scores were significantly greater than exact expository scores. Poor readers were differentiated from good readers. Scores for both good and poor readers on grammatical function, semantic acceptability and discourse acceptability were significantly greater for narrative fiction than expository prose. Poor readers obtained a significantly higher mean on narrative when compared to expository on syntactic acceptability. Conclusions, based on results obtained were (1) cloze comprehension scores differed for narrative fiction and expository prose modes of discourse, and (2) exact cloze scores discriminated between proficiency levels.

#### Discussion of the Findings

Since this study is a partial replication of Cram (1980), the findings are mainly discussed in relation to the results of her research.

Similar moderate intercorrelations of comprehension measures were found by Cram and this investigator. For grade nine readers Cram found intercorrelations significant at the .01 level between the scores on a reading comprehension measure and exact cloze narrative scores and between exact cloze expository scores. This study obtained intercorrelations at the same level of significance on these variables for grade eight readers. The intercorrelation between the reading comprehension measure and exact cloze expository scores in the Cram study was significant at  $p < .01$ ; whereas in this study was significant at  $p < .05$ . One contributing factor to this difference may have been the use of different tests. The results support the reliability and validity of exact cloze scores suggested by Rankin and Culhane (1969). Further research with cloze tests on similar materials could substantiate the findings



but it appears that exact cloze scores are valuable as an initial group screening device (Hittleman, 1978; Cram, 1980).

When only the exact cloze scores of good and poor readers were correlated both studies revealed a significant intercorrelation between exact cloze narrative scores and exact cloze expository scores for good readers. In the present study this intercorrelation was significant at  $p < .01$ ; whereas in the Cram study, it was significant at  $p < .05$ . Both studies showed no significant intercorrelation between exact cloze narrative scores and exact cloze expository scores for poor readers. Whereas the results of the present study indicated significant intercorrelations between the comprehension measure and exact narrative scores and exact expository scores for both good and poor readers; the Cram study did not. The use of different reading tests may be a contributing factor to this dissimilarity.

Concurring with Cram, the findings on the effect of mode of discourse on comprehension indicated that the thematized elements of narrative fiction are more easily processed than expository prose. A 'story grammar' assisted understanding (Rumelhart, 1975). All subjects, especially the poor readers found it more difficult to process the rhetorical schemas of the expository prose. This supports the work of Winograd (1977). On exact cloze replacements, good and poor readers scored significantly higher on narrative fiction when compared to expository prose. In the present study and Cram's study these differences were significant at the .001 level. The results for the non-exact cloze replacements were similar for both studies. Significant differences at  $p < .001$  between narrative scores and expository scores for both good and poor readers were obtained on all variables except one, syntactic acceptability. The results of the analysis of non-exact replacements

support Cambourne (1978). The modification of the taxonomy to "yes" and "no" categories, as suggested by Cram (1980) appears to be valid.

### Conclusions and Implications

The findings support Cram (1980) and lead to similar implications. Identified were implications for the assessment of reading and for teaching of content area reading materials.

The results clearly demonstrate that the cloze test is a reliable and practical instrument. Cloze is a valuable tool in the classroom as it combines a total group test with a more specific diagnostic assessment. A cloze test is easily created and scored. The taxonomy for non-exact replacements, which reveals information about four parts of language and acts as a silent reading miscue analysis, offers practical advantages over the more time-consuming oral miscue analysis. The cloze can be used to test a whole class if necessary, or to obtain diagnostic information about a small group or an individual and is a useful device in the instructional process.

Since students respond differently, according to total cloze scores, to narrative and expository passages, careful selection of materials must be made to obtain an estimate of comprehension. The type of cloze test should be fitted to the type of instruction. For example, for a social studies unit, an expository prose passage would be the most applicable comprehension measure; whereas, for an English unit, a narrative passage would be most suitable. The significant effects of mode of discourse on comprehension for high school students suggest a need for testing comprehension levels in different content areas.

### Suggestions for Further Research

In addition to the instructional implications, the findings indicate the following suggestions for further investigation.

1. There is a need to replicate this study at different grade levels.
2. Further research is needed using other passages in the content area of this study: social studies.
3. The investigation should be extended to other modes of discourse.
4. The study needs to be carried out with a sample whose first language is other than English.
5. Replication of the investigation using the same classification scheme of the taxonomy is necessary to determine the validity.

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#### TESTS

- The Nelson Reading Skills Test, Form 3C. Iowa City, Ia.: Houghton Mifflin Co., 1977.

APPENDIX A

Reading Tests

Reading Assessment

Name \_\_\_\_\_

Block \_\_\_\_\_ Student No. \_\_\_\_\_

Grade \_\_\_\_\_

Boy \_\_\_\_\_ Girl \_\_\_\_\_

Score \_\_\_\_\_ % \_\_\_\_\_

Did you usually speak a language other than English before you started  
Grade 1? Yes \_\_\_\_\_ No \_\_\_\_\_

Is English the language usually spoken in your home?  
Yes \_\_\_\_\_ No \_\_\_\_\_

### Cloze Test Instructions

On the next page is a sample of a new kind of test. Each of these tests is made by copying a few paragraphs from a book. Every fifth word was left out of the paragraphs, and blank spaces were put where the words were taken out.

Your job will be to guess what word was left out of each space and to write that word in that space.

It will help you in taking the test if you remember these things:

1. Write only one word in each blank.
2. Try to fill every blank. Don't be afraid to guess.
3. You may skip hard blanks and come back to them when you have finished.
4. Wrong spelling will not count against you if we can tell what word you meant.
5. Most of the blanks can be answered with ordinary words but a few will be

numbers like.....3,427 or \$12 or 1954

contractions like.....can't or weren't

abbreviations like.....Mrs. or U.S.A.

parts of hyphenated words like.....self--in the word self-made

(Bormuth, 1976, p.70)

### Sample Test

Here is a sample of one of these tests. Fill each blank with the word you think was taken out. You may check your paper when you finish it by looking at the answers which are written upside down at the bottom of the page. Write neatly.

### The Beaver

Indians call beavers the "little men of the woods." But they \_\_\_\_\_ really so very little. \_\_\_\_\_ beavers grow to be \_\_\_\_\_ or four feet long \_\_\_\_\_ weigh from 30 to \_\_\_\_\_ pounds. These "little men \_\_\_\_\_ the woods" are busy \_\_\_\_\_ of the time. That \_\_\_\_\_ why we sometimes say, "\_\_\_\_\_ busy as a beaver."

\_\_\_\_\_ know how to build \_\_\_\_\_ that can hold water. \_\_\_\_\_ use their two front \_\_\_\_\_ to do some of \_\_\_\_\_ work. Cutting down a \_\_\_\_\_ with their four sharp-\_\_\_\_\_ teeth is easy. A \_\_\_\_\_ can cut down a \_\_\_\_\_ four inches thick in \_\_\_\_\_ 15 minutes.

Answers: 1. aren't 2. Most 3. three 4. and 5. 40 6. of  
7. most 8. is 9. as 10. Beavers 11. dams 12. They 13. paws  
14. their 15. tree 16. pointed 17. beaver 18. tree 19. about

(Bormuth, 1975, p.71)

## Narrative Fiction: Grade Eight

to the uppermost jutting boulder about thirty feet above the water. He would make it--he had to make it. He had done it once this morning and he could do it again.

A crowd \_\_\_\_\_ gathered, and the city \_\_\_\_\_ on the wharf were \_\_\_\_\_ too. Davy tensed his \_\_\_\_\_, ready for the dive.

\_\_\_\_\_ he heard a girl \_\_\_\_\_: "Don't--don't do it, \_\_\_\_\_!" He looked down and \_\_\_\_\_ Ginny holding out her \_\_\_\_\_ to him, begging him \_\_\_\_\_ stop. Davy stared at \_\_\_\_\_. "Come down," she cried. "\_\_\_\_\_, Davy, come down!"

The \_\_\_\_\_ in her voice caused \_\_\_\_\_ to hesitate and then \_\_\_\_\_ back. But when Clinton \_\_\_\_\_, "What's the matter--you \_\_\_\_\_ out?" he clenched his \_\_\_\_\_ and stepped into diving again. He couldn't back \_\_\_\_\_ now. He didn't want \_\_\_\_\_. He knew he could \_\_\_\_\_ the dive.

"Davy..." There \_\_\_\_\_ fear in Ginny's voice. "\_\_\_\_\_, please don't dive," she \_\_\_\_\_.

He sat sown to \_\_\_\_\_ from diving, his head \_\_\_\_\_ his hands. From below \_\_\_\_\_ the laughter of the \_\_\_\_\_ boys, the strident hoot \_\_\_\_\_ Clinton louder than the \_\_\_\_\_. Davy's palms were wet \_\_\_\_\_ he fought back the \_\_\_\_\_ to leap up and \_\_\_\_\_, no matter what Ginny \_\_\_\_\_.

When he looked down, \_\_\_\_\_ crowd was leaving. Only \_\_\_\_\_ and Ginny stood watching \_\_\_\_\_ he came down the \_\_\_\_\_--slowly for he was \_\_\_\_\_ exhausted. They walked toward \_\_\_\_\_--Ginny pale and close to \_\_\_\_\_, Clinton smiling condescendingly.

"\_\_\_\_\_ looked like a champ \_\_\_\_\_ that one," Clinton taunted.

\_\_\_\_\_ clenched his fists, but \_\_\_\_\_ laid her hand on \_\_\_\_\_ arm and he slowly \_\_\_\_\_.

He wished he could \_\_\_\_\_ her how it was--\_\_\_\_\_ it was harder to let Clinton think he was yellow than it would have been to dive. But he couldn't explain it exactly, the different kind of courage it had taken. Any kid could have taken the dare and dived off the cliff, but it took--well--a man to let himself be ridiculed for something no one would understand.

"I wasn't afraid," Davy said. "I wasn't scared of diving."

"I know," she said, and slipped her arms through his. "But what you did was braver."

## Answers: Narrative Fiction: Grade Eight

- |              |              |
|--------------|--------------|
| 1. had       | 26. keep     |
| 2. boys      | 27. in       |
| 3. watching  | 28. came     |
| 4. muscles   | 29. city     |
| 5. then      | 30. of       |
| 6. cry       | 31. rest     |
| 7. Davy      | 32. as       |
| 8. saw       | 33. impulse  |
| 9. arms      | 34. dive     |
| 10. to       | 35. wanted   |
| 11. her      | 36. the      |
| 12. Please   | 37. Clinton  |
| 13. anguish  | 38. as       |
| 14. him      | 39. rocks    |
| 15. step     | 40. suddenly |
| 16. shouted  | 41. him      |
| 17. chicken  | 42. tears    |
| 18. fists    | 43. You      |
| 19. position | 44. on       |
| 20. out      | 45. Davy     |
| 21. to       | 46. Ginny    |
| 22. make     | 47. his      |
| 23. was      | 48. relaxed  |
| 24. Davy     | 49. tell     |
| 25. called   | 50. that     |



## Expository Prose: Grade Eight

Much of the explanation \_\_\_\_\_ this urban growth \_\_\_\_\_ in the history of the \_\_\_\_\_ of Australia. The settlers \_\_\_\_\_ on ships, and naturally \_\_\_\_\_ first at the chosen \_\_\_\_\_ which soon developed into \_\_\_\_\_ and ports. As the \_\_\_\_\_ and pastoralists\* pushed inland \_\_\_\_\_ looked to the established \_\_\_\_\_ for their supplies, and \_\_\_\_\_ their produce back to \_\_\_\_\_ ports to be shipped \_\_\_\_\_ the overseas markets. This \_\_\_\_\_ expanding trade in the \_\_\_\_\_ offered employment to new \_\_\_\_\_, who tended to stay \_\_\_\_\_ the towns rather than \_\_\_\_\_ inland. Later, the railways \_\_\_\_\_ their networks out from \_\_\_\_\_ port-capitals and accelerated the \_\_\_\_\_ of traffic between town \_\_\_\_\_ country, while the development \_\_\_\_\_ mining, and such new \_\_\_\_\_ occupations as wheat and \_\_\_\_\_ farming, added greatly to \_\_\_\_\_ volume of goods handled \_\_\_\_\_ the coastal cities. These \_\_\_\_\_ became even more important \_\_\_\_\_ manufacturing began to develop \_\_\_\_\_ the Australian market. It \_\_\_\_\_ logical to build factories \_\_\_\_\_ the places where there \_\_\_\_\_ large numbers of workers, \_\_\_\_\_ the local markets were \_\_\_\_\_, and where other markets \_\_\_\_\_ be most easily reached, \_\_\_\_\_ by use of the \_\_\_\_\_ network or by coastal \_\_\_\_\_. So the great cities \_\_\_\_\_ continued to grow rapidly, \_\_\_\_\_ few country towns have \_\_\_\_\_ than doubled in population \_\_\_\_\_ the last thirty years.

\_\_\_\_\_ means that the cities \_\_\_\_\_ out over tremendous areas. \_\_\_\_\_ families demand sufficient \_\_\_\_\_ not only to build \_\_\_\_\_ houses but also to \_\_\_\_\_ vegetable gardens, lawns, flowers, \_\_\_\_\_ shrubs. Hence, Sydney and Melbourne cover areas which are little smaller than that of Metropolitan London although their populations are much less. The other Australian cities are proportionately large. Most Australians living in cities must travel several miles to their work each morning. The thinness of settlement so obvious in the Australian countryside is also to be seen in the cities, so that transport and other communications, water, sewage, and other services are all very expensive to provide and maintain.

\*farmers

## Answers: Expository Prose: Grade Eight

- |                |              |
|----------------|--------------|
| 1. for         | 26. the      |
| 2. lies        | 27. by       |
| 3. development | 28. centres  |
| 4. arrived     | 29. when     |
| 5. settled     | 30. for      |
| 6. anchorages  | 31. was      |
| 7. townships   | 32. in       |
| 8. explorers   | 33. were     |
| 9. they        | 34. where    |
| 10. ports      | 35. largest  |
| 11. sent       | 36. could    |
| 12. the        | 37. either   |
| 13. to         | 38. rail     |
| 14. steadily   | 39. shipping |
| 15. ports      | 40. have     |
| 16. immigrants | 41. while    |
| 17. in         | 42. more     |
| 18. shift      | 43. in       |
| 19. spread     | 44. This     |
| 20. the        | 45. spread   |
| 21. flow       | 46. Most     |
| 22. and        | 47. land     |
| 23. of         | 48. their    |
| 24. rural      | 49. have     |
| 25. dairy      | 50. and      |

APPENDIX B

## MODIFIED GRAM Reading Assessment Method

Narrative Fiction: Grade 8: Subject #14

Cloze Replacements			Grammar		Syntax		Semantics		Discourse	
exact		non-exact	Y	N	Y	N	Y	N	Y	N
1	had	began		✓		✓		✓		✓
2	boys	folk	✓		✓		✓		✓	
3	watching	=								
4	muscles	=								
5	then	=								
6	cry	say	✓		✓		✓		✓	
7	Davy	=								
8	saw	=								
9	arms	hand	✓		✓		✓		✓	
10	to	=								
11	her	=								
12	Please	=								
13	Anguish	shaking	✓		✓		✓		✓	
14	him	Davy	✓		✓		✓		✓	
15	step	stand	✓		✓		✓		✓	
16	shouted	said	✓		✓		✓		✓	
17	chicken	=								
18	fists	fist	✓		✓		✓		✓	
19	position	=								
20	out	=								
21	to	=								
22	make	do	✓		✓		✓		✓	
23	was	=								
24	Davy	don't	✓		✓		✓		✓	
25	called	yelled	✓		✓		✓		✓	
26	keep	stop	✓		✓		✓		✓	
27	in	=								
28	came	was	✓		✓		✓		✓	
29	city	town	✓		✓		✓		✓	
30	of	then		✓		✓		✓		✓
31	rest	=								
32	as	and	✓		✓		✓		✓	
33	impulse	urge	✓		✓		✓		✓	
34	dive	=								
35	wanted	said	✓		✓		✓		✓	
36	the	=								
37	Clinton	he	✓		✓			✓		✓
38	as	and	✓		✓		✓		✓	
39	rocks	cliff	✓		✓		✓		✓	
40	suddenly	totally	✓		✓		✓		✓	

## MODIFIED GRAM Reading Assessment Method (cont.)

		Cloze Replacements		Grammar		Syntax		Semantics		Discourse	
		exact	non-exact	Y	N	Y	N	Y	N	Y	N
41	him		home		✓		✓		✓		✓
42	tears		him	✓		✓		✓	✓		✓
43	you		he	✓		✓		✓	✓		✓
44	on		had		✓		✓		✓		✓
45	Davy		=								
46	Ginny		=								
47	his		=								
48	relaxed		wanted	✓		✓			✓		✓
49	tell		=								
50	that		now		✓	✓		✓			✓
Raw totals		29		24	5	26	3	22	7	23	6
Percentages "Yes"		48		48		52		44		46	