THE EFFECT OF CLOZE PROCEDURES UPON
THE READING COMPREHENSION OF GRADE FIVE STUDENTS
USING THE DIRECT TEACHING OF CONTEXT CLUES
WITH DIFFERENT INTENSITIES AND DELETION SYSTEMS

by

JACK TARASOFF

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF EDUCATION

in

THE FACULTY OF GRADUATE STUDIES
(Department of Language Education)

We accept this thesis as conforming
to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA
April 1986

© Jack Tarasoff, 1986
In presenting this thesis in partial fulfilment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by the head of my department or by his or her representatives. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Department of **EDUCATION**

The University of British Columbia  
1956 Main Mall  
Vancouver, Canada  
V6T 1Y3

Date  **July 28/86.**
The purpose of this study was to investigate the effect of cloze procedure in developing reading comprehension where two types of word classes, noun/verb and connectives, were deleted in the construction of the cloze passages used. The noun/verb and connective deletions represented two types of context clues—presentation clues and idea clues. The study also investigated how well children developed a specific knowledge of connectives. In addition, the study examined the effects of intensive teaching as contrasted with non-intensive teaching and the effect of the treatment on three comprehension levels, High, Middle and Low.

Twenty intact classrooms, consisting of 434 students, were randomly assigned to four experimental groups and one control group. The experimental groups were assigned to treatment conditions that included cloze exercises that had either noun/verb deletions or cloze exercises that had connective deletions. The four experimental groups received either intensive teaching or non-intensive teaching. Each of the experimental groups completed 23 cloze exercises during the 8-week treatment period. The control group, consisting of four classes, received reading instruction from the developmental reading programs existing in the schools at the time.

Data were collected on two occasions during the research period. Pre-treatment data were collected through the administration of a Cloze
Comprehension Test and a standardized test, the reading achievement sub-test of the Canadian Test of Basic Skills, Level 10, Form 3M. Post-treatment data were collected through the administration of a post-treatment Cloze Comprehension Test, a reading subtest of the Canadian Test of Basic Skills, Level 11, Form 4M, and Robertson Written Connectives Test. The accumulated data were analyzed by means of analysis of covariance (ANCOVA). The pre-treatment scores obtained on the Cloze Comprehension Test were used as the covariate in the analysis of the data. Pairwise comparison of means were examined by the application of Scheffe's test at the .05 level of statistical significance.

The statistical analysis of the data resulted in the following findings:

1. No statistically significant differences were found between the treatment groups when comprehension scores on the Canadian Test of Basic Skills or the post-treatment Cloze Comprehension Test were analyzed.

2. While analyzed data showed statistically significant differences between the three ability groups when scores from the Canadian Test of Basic Skills were analyzed, there was no statistically significant difference between the Middle and Low ability groups when scores from the Cloze Comprehension Test were analyzed.

3. Statistically significant differences between the five treatment groups were observed when scores from the Robertson Written Connectives Test were analyzed.

4. A statistically significant difference between the High ability group and the Middle and Low ability groups was observed when scores on the Robertson Written Connectives Test were analyzed. However, a
statistically significant difference was not observed between the Middle and Low ability groups.

The results of this study led to the conclusions that while the cloze procedure was not successful in effecting differential comprehension scores, it seems the cloze procedure and the cloze procedure lessons, as they were prepared for this study, were effective in developing a knowledge of connectives. The results also generated some recommendations that might result in the cloze procedure being more effectively used in developing comprehension abilities.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT</td>
<td>ii</td>
</tr>
<tr>
<td>TABLE OF CONTENTS</td>
<td>v</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>viii</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>x</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENT AND DEDICATION</td>
<td>xi</td>
</tr>
<tr>
<td>Chapter I</td>
<td>1</td>
</tr>
<tr>
<td>THE PROBLEM</td>
<td>1</td>
</tr>
<tr>
<td>Rationale for the Study</td>
<td>1</td>
</tr>
<tr>
<td>Design of the Study</td>
<td>8</td>
</tr>
<tr>
<td>Questions to be Answered</td>
<td>9</td>
</tr>
<tr>
<td>Statistical Hypotheses</td>
<td>10</td>
</tr>
<tr>
<td>Definition of Terms</td>
<td>11</td>
</tr>
<tr>
<td>Significance of the Study</td>
<td>15</td>
</tr>
<tr>
<td>Summary</td>
<td>15</td>
</tr>
<tr>
<td>Chapter II</td>
<td>16</td>
</tr>
<tr>
<td>REVIEW OF THE LITERATURE</td>
<td>16</td>
</tr>
<tr>
<td>Cloze Procedure and Reading Comprehension—The Theoretical Base</td>
<td>16</td>
</tr>
<tr>
<td>Cloze Procedure and Reading Comprehension—Practical Considerations</td>
<td>18</td>
</tr>
<tr>
<td>The First Round (1962–1969)</td>
<td>18</td>
</tr>
<tr>
<td>The Second Round (1970–1979)</td>
<td>24</td>
</tr>
<tr>
<td>Guidelines for Future Studies</td>
<td>32</td>
</tr>
<tr>
<td>Summary</td>
<td>33</td>
</tr>
<tr>
<td>Contextual Clues and Reading Comprehension</td>
<td>33</td>
</tr>
<tr>
<td>The Value of Contextual Clues in Reading</td>
<td>34</td>
</tr>
<tr>
<td>Types of Contextual Aids</td>
<td>44</td>
</tr>
<tr>
<td>Summary</td>
<td>51</td>
</tr>
<tr>
<td>Chapter III</td>
<td>52</td>
</tr>
<tr>
<td>DESIGN OF THE STUDY</td>
<td>52</td>
</tr>
<tr>
<td>Teaching Materials</td>
<td>52</td>
</tr>
<tr>
<td>Cloze Procedure Lessons</td>
<td>53</td>
</tr>
<tr>
<td>Teachers' Guide</td>
<td>55</td>
</tr>
<tr>
<td>Contextual Aid Chart</td>
<td>56</td>
</tr>
<tr>
<td>Teaching Support Materials</td>
<td>57</td>
</tr>
<tr>
<td>Teachers' Instructions for Cloze Procedure Lessons</td>
<td>57</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Testing Instruments</td>
<td>58</td>
</tr>
<tr>
<td>- Canadian Test of Basic Skills</td>
<td>58</td>
</tr>
<tr>
<td>- Cloze Comprehension Tests</td>
<td>58</td>
</tr>
<tr>
<td>- The Robertson Written Connectives Test</td>
<td>60</td>
</tr>
<tr>
<td>Procedures</td>
<td>61</td>
</tr>
<tr>
<td>- Field Trial</td>
<td>61</td>
</tr>
<tr>
<td>- Selection of Classrooms</td>
<td>62</td>
</tr>
<tr>
<td>- Assignment of Classrooms to Treatment</td>
<td>62</td>
</tr>
<tr>
<td>- Duration of Study</td>
<td>63</td>
</tr>
<tr>
<td>- Administration of Cloze Procedure Lessons</td>
<td>64</td>
</tr>
<tr>
<td>- Administration of Tests</td>
<td>65</td>
</tr>
<tr>
<td>Experimental Control Procedures</td>
<td>65</td>
</tr>
<tr>
<td>- Monitors' Checklist</td>
<td>65</td>
</tr>
<tr>
<td>- Teachers' Comments</td>
<td>66</td>
</tr>
<tr>
<td>- Teachers' Questionnaire</td>
<td>66</td>
</tr>
<tr>
<td>Statistical Procedures and Analysis</td>
<td>67</td>
</tr>
<tr>
<td>- Experimental Design</td>
<td>67</td>
</tr>
<tr>
<td>- Statistical Analysis</td>
<td>69</td>
</tr>
<tr>
<td>- Data Preparation</td>
<td>73</td>
</tr>
<tr>
<td>- Verification of Scores</td>
<td>73</td>
</tr>
<tr>
<td>- Preliminary Analysis</td>
<td>73</td>
</tr>
<tr>
<td>- Final Analysis</td>
<td>74</td>
</tr>
<tr>
<td>IV RESULTS AND DISCUSSION</td>
<td>75</td>
</tr>
<tr>
<td>Test of Hypothesis I</td>
<td>76</td>
</tr>
<tr>
<td>- Scores Obtained from the Canadian Test of Basic Skills</td>
<td>76</td>
</tr>
<tr>
<td>- Scores Obtained from the Post-Treatment Cloze Test</td>
<td>78</td>
</tr>
<tr>
<td>- Discussion of the Results Relating to Hypothesis I</td>
<td>81</td>
</tr>
<tr>
<td>Test of Hypothesis II</td>
<td>88</td>
</tr>
<tr>
<td>- Treatment Groups and Ability Groups and Knowledge of Connectives as Measured by the Robertson Written Connectives Test</td>
<td>88</td>
</tr>
<tr>
<td>- Discussion of the Results Relating to Hypothesis II</td>
<td>93</td>
</tr>
<tr>
<td>- Interaction Effects Obtained by Crossing Ability (AB) and Treatment Factors (TR)</td>
<td>98</td>
</tr>
<tr>
<td>Test of Hypothesis III</td>
<td>98</td>
</tr>
<tr>
<td>- Interaction of Ability by Treatment on Post-Treatment Comprehension Scores as Measured by the Canadian Test of Basic Skills and the Cloze Comprehension Test</td>
<td>99</td>
</tr>
<tr>
<td>- Interaction of Class within Treatment on Post-Treatment Comprehension Scores as Measured by the Canadian Test of Basic Skills and the Cloze Comprehension Test</td>
<td>99</td>
</tr>
<tr>
<td>Summary</td>
<td>100</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
</tr>
<tr>
<td>--------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>SUMMARY, CONCLUSIONS, DISCUSSION AND RECOMMENDATIONS</td>
<td>102</td>
</tr>
<tr>
<td>Summary of the Study</td>
<td>102</td>
</tr>
<tr>
<td>Summary of the Findings</td>
<td>103</td>
</tr>
<tr>
<td>Conclusions of the Study</td>
<td>105</td>
</tr>
<tr>
<td>Discussion and Recommendations</td>
<td>107</td>
</tr>
<tr>
<td>Design Features</td>
<td>107</td>
</tr>
<tr>
<td>Materials</td>
<td>111</td>
</tr>
<tr>
<td>Researcher's Conclusions</td>
<td>113</td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>114</td>
</tr>
<tr>
<td>APPENDIX A—Pre- and Post-Testing Instruments and Instructions for Administration</td>
<td>121</td>
</tr>
<tr>
<td>APPENDIX B—Instructions to Teachers; Cloze Exercise Passages; and Teachers' Keys</td>
<td>147</td>
</tr>
<tr>
<td>APPENDIX C—Monitors' Checklist; Teachers' Score Sheets; Teachers' Comments; and Teachers' Questionnaire</td>
<td>163</td>
</tr>
<tr>
<td>APPENDIX D—Tables of Means and Standard Deviations for Treatment Groups and Ability Groups</td>
<td>169</td>
</tr>
</tbody>
</table>
LIST OF TABLES

Table                                      Page

1. The First Round—Successful Studies Comparing Cloze  with Another Method  ........................................ 20
2. The First Round—Unsuccessful Studies Comparing Cloze  with Another Method .................................. 21
3. The Second Round—Successful Cloze Comprehension Studies  ............................................................ 25
4. The Second Round—Unsuccessful Cloze Comprehension  Studies ............................................................ 27
5. Comparison of Successful and Unsuccessful Studies on  Seven Factors .................................................. 29
6. Context Clue Types: Seven Sources  ................................................................................................. 47
7. Presentation Clues Classified by Idea Clue Categories ................................................................. 50
8. Idea Clues and Corresponding Presentation Clues ................................................. ............................ 55
9. Treatment Groups, Treatment Conditions, and Classrooms for Treatment ........................................ 63
10. Distribution of Classes and Students in the Five Treatment Conditions and Ability Levels .............. 68
11. Summary of Analysis of Variance Results on Pre-Treatment Scores on Vocabulary and Comprehension  Scores on the CTBS and on the Pre-Treatment Cloze Test .................. 70
12. Pre-Treatment Means, Unadjusted Means, and Adjusted Means on the Canadian Test of Basic Skills and Cloze Comprehension Test for the Five Treatment Groups .................... 72
13. ANCOVA Reading Comprehension Mean Scores with the Canadian Test of Basic Skills as the Criterion Variable and the Pre-Cloze Comprehension Test Scores as the Covariate .......... 77
14. Adjusted Means and Standard Deviations of the Three Ability Groups as Measured by the Canadian Test of Basic Skills, Reading Comprehension Subtest .......................... 77
## LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Diagram Illustrating the Areas of Statistical Significance Among the Treatment Groups and the Robertson Written Connectives Test</td>
<td>91</td>
</tr>
<tr>
<td>2.</td>
<td>Matrix of Conditions and Variables for Five Treatment Groups</td>
<td>94</td>
</tr>
</tbody>
</table>
ACKNOWLEDGMENT AND DEDICATION

The writer wishes to express appreciation to the many people whose professional contribution, whose personal support, and whose interest and cooperation have made this study possible and to see it to its conclusion.

To Dr. Kenneth Slade, whose professional guidance and personal support were invaluable in the formation of the study. His input in areas of content and organization were most valuable. His patience over a long period and through many meetings is very much appreciated. To Dr. Jane Catterson, who also provided a most significant input in terms of organization and content. Her time and expertise were always so unselfishly provided throughout the duration of the study. To Dr. Tory Westermark, who read many of the revisions and provided many valuable suggestions in all areas of the study. To Dr. Todd Rogers, who provided knowledge and expertise in statistics and design and also whose personal support provided the motivation that was often needed. To Dr. Cliff Pennock, while unable to stay on the committee, provided much valuable input during the formative stages of the study. Also to Dr. Sherril and Dr. Foster, who became involved as university appointed examiners. They provided support and valuable suggestions which strengthened the research.

The data were collected in grade 5 classrooms in the Public School system in Regina. My sincere appreciation to the Regina Board of Education for allowing the research to be conducted and especially to
the teachers who used the lesson materials in their classrooms, and to
the students who were subjected to the materials.

Fellow university students and other colleagues are always a
valuable support in any research undertaking. This study was not an
exception. My thanks to Dr. Joyce Matheson and Dr. Cathy Tolsma for
their assistance in verifying data and checking lessons and other
aspects of the materials. This type of input also includes Dorothy
Sharrock of the Reading Materials Centre, Professor Sandra Darychuk of
the University of Regina, and Duane Campbell of the Abbotsford School
District.

Typists are a most valuable group of people in a project such
as this. Many have worked hard during the completion of the research.
To Valerie Pusey, Nina Thurston, Marlene Freylinger, and Karen Danielson,
I extend a sincere thank you.

The writer is especially grateful to all members of my family——
the Tarasoffs and the Roberts. But most specifically to my wife, Janet,
who worked hard on the study and endured. And to my three sons, Dave,
John and Matt, who I am sure often tired of the project. We lost many
valuable hours of interaction and communication that could have taken
place. For your tolerance I will always be grateful.

Finally, to all my friends who continued to provide encouragement
over the duration of the study.
DEDICATION

I would like to dedicate the study to my late father, Peter, who unfortunately passed away before its completion. His emphasis on education and study throughout my upbringing were certainly motivational factors. Also to Mrs. Mildred Roberts, my mother-in-law, who also provided moral support and encouragement. Both would have been happy to see this study completed.
CHAPTER I

THE PROBLEM

The purpose of the study was to investigate the effect of the cloze procedure in teaching the use of context clues for the improvement of reading comprehension. The study adds to previous research in the use of the cloze procedure as a teaching technique by attempting to attend to some of the limitations found in previous studies. Limitations in those previous studies included: a lack of focus on what was to be taught with a resulting weakness in the instruction provided, weaknesses in research design and statistical analysis, and a lack of control of teaching in the presentation and the use of cloze passage lessons.

Rationale for the Study

Reading authorities generally view the development of comprehension ability as the major aim of reading instruction. While few would disagree with this overall aim, there are differences of opinion about how best to develop the ability. These differences may be the reason for Bormuth's (1969) statement that instruction in reading comprehension remains the weakest area in teaching reading skills. Durkin (1979) brought this assertion closer to the present when she stated she found almost no samples of comprehension instruction in the intermediate and upper-grade classrooms she investigated. Instead she saw teachers as interrogators and assignment givers. Little comprehension instruction was taking place, she said.
Educators are continually looking for new methods to help improve the reading comprehension abilities of students in the classrooms. One method for the improvement of reading comprehension, first introduced by Taylor in 1953, was the cloze procedure. Taylor drew from Gestalt psychology for the theoretical underpinnings of the cloze procedure. He borrowed from the word 'closure', which is a term Gestalt psychologists use to describe the human tendency to mentally complete a pattern or event by closing the incomplete areas or parts. This human tendency to close incomplete patterns caused Taylor to theorize that readers would, in a like manner, complete a reading passage which had been mutilated by the systematic removal of words. Taylor said that the reader must deal with complex sentence patterns and sub-patterns in order that a correct word can be selected to replace the missing word. The ability to establish what these complex sentence patterns are and then ultimately to establish what the missing words are depends on what the Gestalt psychologists call perceptual organization and perceptual selection. The most meaningful perception that readers develop from the stimulus on the printed page is the one on which a cloze selection is made and the one on which 'closure' is exercised.

The cloze procedure uses exercises or test materials in which passages of continuous prose are "mutilated" by the systematic removal of words. The reader of the mutilated passage is required to reconstruct the passage by replacing the deleted words. The reader's score of words replaced correctly can be used either as an estimate of the reader's comprehension of the passage or as an estimate of the difficulty of the passage (readability).

Most researchers have been content with the theoretical base of
the cloze procedure provided by Taylor; and a sizeable body of research has been conducted as well as a large number of position papers written on this topic since it was introduced. A number of researchers, including Schneyer (1965), Guice (1969), Kingston and Weaver (1970) have examined the use of the cloze procedure as a way to develop and improve reading comprehension in students at educational levels ranging from grade one to college. Their results indicated that using the cloze procedure did not produce comprehension levels or abilities that were significantly greater than or different from those obtained by previously used methodology or techniques. There were, however, some studies reporting results that showed the cloze procedure producing scores superior to traditional methodologies. Bloomer (1962) and Martin (1968) both reported such results when college students made up the sample. This diversity of reader age in the early research in itself creates problems when close research is analyzed. It may be that populations of a specific age - primary, middle grades, secondary or college age - are most likely to use close profitably.

Jongsma (1971), however, ignored age factors and identified two major limitations in the studies he reviewed on the cloze procedure as a teaching technique. He felt that a lack of focus on what was to be taught and a lack of direct teaching were the major limitations that produced results not significantly different from those obtained in traditional methods (basal comprehension exercises along directed reading teaching activities). He felt that better focus and more direct teaching might bring better results and suggested that context clues instruction combined with cloze procedure exercises might be
the areas to which the direct teaching could apply. This call by Jongsma for a more direct and focussed teaching seems to reflect the same point of view as is presented in the Bullock Report on Reading Education (1975) which stated that the mere filling in of gaps as a routine exercise was probably of doubtful educational value. The Report stated the reader must know what factors contribute to meaningful gap filling, and that these factors must be encouraged and managed in the classroom. The Report concluded that without these elements the cloze procedure would probably be a pointless exercise and would make little or no contribution to the development of reading comprehension.

Rankin (1959) and Louthan (1965) provided a possible basis for variations in development of cloze passages when they examined the effects of using different deletion systems. Rankin proposed the deletion of either lexical or structural elements, suggesting that passages mutilated by lexical deletions (nouns and verbs) would measure understanding of substantive content, while passages mutilated by structural deletions (connectives, prepositions) would measure an understanding of the inter-relationship of ideas. Louthan (1965) explores this proposed lexical/structural dichotomy when he tried to determine which types of word classes had greatest effect in generating meaning from materials read and studied. His investigations, using a sample of seventh grade pupils, revealed that those students responding to deleted function or structural words (connectives, prepositions) achieved greater increases in comprehension scores than did those students responding to deleted lexical words. Louthan concluded that the removal of lexical words destroyed too much of the meaning of the passage and resulted in a loss of compre-
hension. While his investigation was not an examination of the cloze procedure as a teaching technique, his findings regarding the effects of different deletions on comprehension did provide a focus for further investigations.

Other researchers such as Artley (1943), McCullough (1945), and Ames (1966) have provided further direction for studies using the cloze procedure to improve reading comprehension. These researchers have urged that more attention should be paid to context clues within prose when teaching comprehension. One type of context clue to which Artley, McCullough, and Ames referred was an 'idea clue' which used lexical items in cause/effect, comparison/contrast, and description patterns. A second type of context clue discussed by McCullough was the 'presentation clue' which included such structure words as prepositions and connectives. The two types of clues, 'idea clues' (represented by meaning carriers such as nouns and verbs) and 'presentation clues' (represented by structure words such as connectives) seem to correspond to Rankin's and Louthan's lexical/structural classification of possible deletions in cloze passages.

The conclusion that might be reached from the above discussion is that a reader's understanding of the relationship between the two types of contextual clues might increase the power of comprehension. Artley himself (1943) stated that, "... , the meaning of a sentence is the result of the relationshipm the interplay, that exists between the words . . . ."

(p. 73).

Support for the positions of Artley, McCullough, and Ames can be found in the research of Weaver (1965), and later researchers such as Early (1968) and Dulin (1970). They have suggested that the cloze pro-
procedure should have value in developing reading comprehension abilities as the student is confronted with the task of establishing the relationship or interplay of words. Dulin (1970) was rather specific when he suggested that certain types of context clues should be given focus when mutilated cloze passages were being reconstructed.

Harris and Smith (1972) and Zintz (1980) have also agreed with Dulin and the others that the cloze procedure might be effective in developing an understanding of context clues. They have supported Dulin's argument that context clues are predictable, identifiable, and teachable and that the cloze procedure might be an effective vehicle for teaching the use of these clues.

Knowledge about the validity and appropriateness of different types of context clues at various grade levels is basic to any study that seeks to incorporate the teaching of the use of context clues, regardless of proposed methodology. Ames (1966) and Rankin and Overholser (1969) have supplied some of the necessary information in this regard.

Ames (1966) had twelve graduate students respond to materials in which nonsense words were substituted for every fifth lexical word deleted. The students provided oral explanations about which contextual clue(s) they used to establish what they thought was the deleted word. From the student responses Ames was able to classify fourteen distinct contextual clue categories.

In a follow-up study, Rankin and Overholser (1969) investigated the ability of elementary school children to use the context clue categories described by Ames. In their sample they found that the children's accuracy levels on nine of the context clues ranged from 50% to a maximum of 69%. Of the remaining clues it was found that the children could not
perform to an accuracy level of 50%. Rankin and Overholser suggested that context clues should be selected on the basis of sensitivity, i.e., those that are most interpretable by intermediate grade children and that new and better techniques should be developed for teaching these context clues.

Since the critique of cloze studies by Jongsma in 1970 and his update of the close procedure in 1980 there has been a renewed interest in the procedure as a teaching technique. A number of researchers have formulated research questions designed to answer questions such as what would be the best material for cloze passages, what deletion systems could best achieve stated objectives, what age/grade/IQ of the learner is best served by the cloze and for what duration of time should cloze exercises be presented to the learners. (Sampson, Valmont, and Allen, 1982; Shoop, 1982; Hasson, 1983). In addition to research efforts, many teachers are now using the cloze for improving general comprehension, developing vocabulary, developing divergent thinking, and for developing understanding of content area concepts (Schoenfeld, 1980; Marino, 1981; Rauch, 1982; Sadoski, 1983; Fray and Wozniak, 1983). Valmont, in 1983, stated:

Cloze procedures are being used more and more by teachers. School districts and state school systems are using the cloze or modified cloze procedures for testing reading comprehension growth. Since Jongsma's 1980 endorsement of the use of the cloze procedure, cloze instruction has exploded in popularity. (p. 156)

Cecil (1985) reinforced Valmont's statement when she stated, "In the last ten years, the cloze procedure has increased in popularity as a respected and useful teaching tool." (p. 95)

The cloze procedure is one of those measures that seems to stimulate
research because respected researchers continue to feel that despite "failures" it has unexplored potential and some teachers have already adopted it as an effective technique to develop comprehension.

Drawing together the strands of thinking outlined above it was concluded that the present study should investigate the use of the cloze procedure in an intermediate grade as a technique to improve comprehension, but would:

1. attempt to develop cloze passages that used either lexical deletions (nouns/verbs) or structural deletions (connectives, specifically) as a basis for context clues instruction and would compare the effects of this difference on reading comprehension scores.

2. attempt to take into account some of Jongsma's criticism and suggestions and so improve on existing teaching methodology using the cloze procedure. It is thought that these improvements might make the cloze procedure a stronger technique for developing reading comprehension abilities.

**Design of the Study**

Twenty classes were randomly assigned to five treatment groups which included four experimental groups and one control group. The four experimental groups were subjected to either one of two deletion systems, noun/verb or connectives and to one of two intensities of teaching, intensive and non-intensive. The five treatment groups are listed as follows:

- **Group 1**—received cloze lessons with noun/verb deletions and intensive teaching of context clues.
- **Group 2**—received cloze lessons with connective deletions and intensive teaching of context clues.
Group 3—received cloze lessons with noun/verb deletions and limited instruction of context clues.

Group 4—received cloze lessons with connective deletions and limited instruction of context clues.

Group 5—did not receive cloze lessons or any instruction with context clues and continued to receive reading instruction as they would have normally.

The classes received the cloze lessons for a period of approximately eight weeks.

Pre-tests of comprehension ability (Canadian Test of Basic Skills [1975], Level 10 and a Cloze Comprehension Test [1975]) were administered before treatment began. The treatment lessons were immediately followed by post-tests of reading comprehension (Canadian Test of Basic Skills [1975], Level 11 and a parallel Cloze Comprehension Test) as well as a knowledge of connectives test (Robertson Written Connectives Test [1968]). The data were analyzed in a manner described in Chapters 3 and 4.

Provisions for monitoring the lessons were established. Teachers and students were employed to visit classrooms on a random basis, and observe the presentation of the lessons. Monitor's checklists were provided.

Questions to be Answered

It was proposed that the combination of the cloze procedure and the disciplined and systematic exposure to selected contextual aids would influence reading comprehension scores, thus this factor was studied. Further, the effects of direct or intensive teaching during the presentation of cloze lessons, as compared to indirect or non-intensive teaching
during the presentation of cloze lessons were examined. Finally, scores obtained by three groups of students designated as High, Middle and Low Reading Comprehenders were analyzed to determine whether the different deletion systems and the different methods of presentation would significantly influence comprehension scores of the three ability groups.

Specifically, the questions presented for discussion and investigation were:

1. How would the cloze lessons, using the two deletion systems, affect the comprehension scores of the four treatment groups?

2. How would the intensive or non-intensive teaching affect comprehension scores of the sample of grade five students in the experimental groups completing the cloze passage lessons?

3. How would comprehension scores of the three ability groups be affected by the two deletion systems and by the intensive and non-intensive teaching?

4. How would the five treatment groups perform in connective usage as measured by the Robertson Written Connectives Test?

Statistical Hypotheses

To examine the study questions posed, the following three hypotheses were formulated and tested.

Hypothesis I. There will be no significant differences in comprehension scores as measured by the Canadian Test of Basic Skills, Level 11, Form 4M and by the post-treatment Cloze Comprehension Test among:

a) the five treatment groups, and

b) the three comprehension ability groups
after completion of cloze procedure lessons across two deletion systems and two intensity levels of teaching.

Hypothesis II. There will be no significant difference in mean scores in knowledge of connectives, as measured by the Robertson Written Connectives Test, among the five treatment groups and the three comprehension ability groups after completion of cloze procedure lessons with two deletion systems and with two intensity levels of teaching.

Hypothesis III. There will be no significant difference in mean comprehension scores as measured by the Canadian Test of Basic Skills and the Cloze Comprehension Test between the five treatment groups and between the three comprehension ability groups when interaction effects, such as Ability by Treatment (AB x TR) and Class within Treatment (CL w TR), are considered.

Definition of Terms

The following terms are defined as they were used in the context of the study.

Reading comprehension. Comprehension abilities as measured by the Canadian Test of Basic Skills, Level 10, Form 3M and Level 11, Form 4M, and by the pre- and post-treatment Cloze Comprehension Tests.

Contextual clues/aids. Those words, phrases, and sentences surrounding a cloze item and which contains both idea type clues and presentation type clues.

Cloze procedure. A procedure wherein words are deleted from a
passage of continuous prose and the reader of the passage required to predict from the remaining context precisely what words were deleted.

**Modified cloze procedure.** A passage of continuous prose that has been mutilated by the removal of selected words. This is contrasted to traditional cloze where every $n^{th}$ word is deleted in a systematic manner, resulting in a random deletion in terms of word class.

**Random deletion system.** The removal of words from a passage of continuous prose where every $n^{th}$ word is deleted without regard for the word class that is deleted. The word classes are thus deleted at random.

**Cloze item.** The blank space representing the position of the deleted word in a passage of continuous prose mutilated by the cloze procedure.

**Cloze unit.** The word that has been deleted from a passage.

**Cloze lessons.** Cloze passages used by students during the treatment sessions.

**Cloze tests.** Mutilated passages with an every fifth word deletion system presented to the students participating in the study before and following the treatment sessions.

**Context.** Words, phrases, or sentences that precede or follow a cloze item. The context is used by the reader to establish what the cloze items might be.
Idea clues. Those words appearing in reading material that present an idea or a thought as contrasted with function words (see below). In the present study nouns and verbs are the words representing the idea clues, including cause/effect, comparison/contrast, description, time relationship, and place relationship.

Lexical items. Those words that are classified as nouns and verbs. In the present study cloze passages with lexical deletion are passages with nouns and verbs deleted.

Connectives. Represent the presentation clues and are defined as function words or structure words.

Presentation clues. Those words appearing in reading material that may be defined as function words or structure words and that are limited to specific connectives in the present study. The presentation clues (connectives) serve to signal or present forthcoming ideas or idea clues. Examples of presentation clues used in this study include such connectives as but, as, because, so, that, where, and when.

Function words/structure words. Those words in reading material that serve to join or establish relationships between and amongst ideas. For this study function structure words have been limited to connectives and have been designated as presentation clues.

Treatment session(s). The school periods that students spend on completion of daily cloze lessons or the time spent on the overall duration of the treatment.
Intensive Teaching. In the classrooms where intensive teaching took place the teacher discussed in depth and in detail the students' responses and elaborated on reasons why a particular choice might be better than another choice. The Contextual Aid Chart was a constant focus in the discussion as the teacher continually explained how the chart should be used for assistance in establishing what the missing word might be. Students participated in the discussion to the level of their capabilities and to the level of their motivation.

Non-intensive teaching. In the classrooms where non-intensive teaching occurred, the lessons were completed, as in the intensive teaching classroom, but the discussion was limited and the teacher, for the most part, merely indicating whether a choice was correct or incorrect. The students had to be satisfied with a, "That's right, Bill", or "No, the correct answer is 'jump' and not 'leap'." "Try to figure out why 'jump' is the best answer. Use your Contextual Aid Chart and read the passage carefully." The level of discussion would not exceed the above brief description.

Successful studies. Those research studies that showed experimental groups receiving treatment using the cloze procedure that achieved scores that are significantly greater than those classified as control groups and who did not receive cloze procedure training.

Unsuccessful studies. Those research studies that showed experimental groups that received cloze procedure training and did not achieve scores that were significantly greater than those classified as control groups and who did not receive cloze procedure training.
Significance of the Study

There is considerable concern amongst teachers and other educators because many children fail to obtain adequate meaning from material read and because many elementary children do not know the meaning and use of contextual clues. It is suggested therefore that the present study might have significance to the field of reading instruction in the following ways:

1. Teachers and researchers might have a better method of teaching the use of contextual clues through the use of the cloze procedure.

2. Teachers and researchers might have more information regarding which deletion system, lexical (noun/verb) or structural (connective) is most effective in developing comprehension skill.

3. New insights might be found into the development of programs for teaching use of contextual clues at the intermediate grade level.

Summary

Chapter I has presented the rationale and purpose of the study and described the treatments to be received by the students that were to participate in the research. Common terms used throughout the study were defined.

The rest of this work is organized into four chapters, as follows:

Chapter II -- the review of the literature,
Chapter III -- the design of the study: the procedure and methodology,
Chapter IV -- the results of the analyses of the data,
Chapter V -- a discussion of the results, the limitations, conclusions, and recommendations for further study.
CHAPTER II
REVIEW OF THE LITERATURE

The review of the literature is presented under two general rubrics and under the related sub-headings. These include: (1) Cloze Procedure and Reading Comprehension including the Theoretical Base and Practical Considerations, and (2) Contextual Clues and Reading Comprehension including the value of Contextual Clues in Reading and Types of Contextual Aids.

Cloze Procedure and Reading Comprehension

The Theoretical Base

The close procedure, introduced by Taylor (1953), was originally developed as a measure of readability of written material. Taylor drew on Gestalt psychology for the theoretical base for the procedure. He coined the word "cloze" from the Gestalt word "closure" which denotes the human tendency to mentally complete a partial figure by supplying the missing parts.

Taylor suggested that this need to see things in their state of completeness could be applied to printed language. He said that if words were removed from a passage of continuous prose the reader would supply the missing words and would then experience closure.

The reader is presented with a large variety of stimulus from the printed page and through a process of what Gestaltists call perceptual selection, a choice is made. Perceptual selection results from perceptual organization of the stimulus. The variety of stimulus is organized on the basis of previous experiences and then through a perceptual selective
process a cloze response is made. Taylor (1953) says that for a successful cloze response the reader must know the meanings and forms of the words involved and also the meanings of combinations of words in the sentence. This knowledge of words and sentences allows the reader to reconstruct the mutilated passage.

In addition to Gestalt psychology, Taylor (1953) said that Osgood's concepts of "dispositional mechanisms" and "total language context" were also a major influence in the development of the cloze procedure. The concept of "dispositional mechanism" advances the idea that language contains redundancies and transitional probabilities. These are thought to be habits of language and are developed by individuals when they are learning to think in a language. These habits are important for transmitting and receiving messages. Individuals will use habits of expression to translate their meaning into language symbols for transmission to others. Likewise these language habits allow the individual to interpret an incoming message. When an individual encounters a series of words that are congruent with the existing language habits, then the obtaining of meaning will not be difficult. When the sequence of words is not as familiar to the receiver then meaning will be less clear and more effort will be required to obtain meaning and in the case of the cloze procedure, to supply the unknown word.

Taylor (1953) stated the "total language concept has its base on the idea that the individual's ability to identify, learn, recognize, remember, or produce any language 'symbol' (element or pattern) depends heavily on the variable degrees to which it is associated with everything else by larger and meaningful (familiar) overall combinations". (p. 419)
Taylor continued to explain that the total context includes anything which motivates, guides, assists, or hinders language behavior. He said that verbal factors, such as grammatical skills and masses of symbols, and non-verbal factors, such as past experience and intelligence, are also part of the total context. These factors, included in total context, are then, necessary for adequate cloze procedure responses.

Taylor suggested that an nth word deletion ensures that all classes of words will be represented as they are deleted in a random manner.

Many researchers have investigated the cloze procedure in an effort to establish its usefulness for a variety of purposes, including vocabulary development, comprehension development, divergent thinking, and sentence structure. This vigorous research was probably sparked, in part, by Taylor (1953) when he stated that the cloze procedure probably had much potential in the language area and its use should not be merely confined to establishing readability levels of printed materials or to establishing reading abilities of individuals.

Practical Considerations

The research on the use of the cloze procedure is probably best summarized and analyzed under two general headings: The First Round and The Second Round, headings which reflect the works of Jongsma (1971 and 1980).

The First Round (1962-1969)

The first group of studies on cloze procedure as a means of improving reading comprehension was summarized by Jongsma in a 1971 monograph. In that monograph he included a table summarizing the studies to that date (p. 19).
Although Jongsma's table provided a useful overview of studies to 1971, detail is lacking; and the interested researcher must search the original sources to flesh out the information not provided. Such a search provides the kind of data presented in Tables 1 and 2 under elaborated headings and includes some of the information needed to provide a rationale for later studies. The additional headings include: Goals (what the researcher attempted to do), the Treatment Period (how long the study lasted), Materials/Lessons (what the researcher used and how the materials were used), Tests (what measuring instruments were used), Features (any special factors included by the researcher) and Data Analysis (what statistical procedure was used to analyse the data). The studies reviewed by Jongsma are, then, re-evaluated now. Table 1 presents those studies where the use of cloze procedure produced a successful effect and Table 2 presents those studies where cloze procedure was used unsuccessfully.

Few Commonalities. A search for commonalities in the two successful studies (Table 1) yields very little useful information. Both were done at the college level and both used a standardized group test of reading as the measure of achievement. However, in all other factors they differed; in goals, materials/lessons, deletions systems, treatment periods, methods features and statistical analysis. No conclusions could be drawn from this information about what might make later studies successful.

Table 2, from which the primary grade studies have been omitted, is no more helpful in pinpointing factors that might be manipulated to make other studies successful. The only points of similarity were in testing: all used at least one standardized group test of reading. Otherwise the studies were different in almost every detail.
<table>
<thead>
<tr>
<th>Researcher</th>
<th>Goals</th>
<th>Grade/No.</th>
<th>Materials/Lessons</th>
<th>Deletion System</th>
<th>Treatment Period</th>
<th>Tests</th>
<th>Feature Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bloomer</td>
<td>to determine if completing cloze exercises aided in remediating and developing reading comprehension.</td>
<td>College N = 88 2 groups of 44 each</td>
<td>close lessons from basals, science, social studies.</td>
<td>500 word passages. 50 deletions (every 10th word).</td>
<td>10 lessons 3 weeks</td>
<td>Diagnostic Reading Test</td>
<td>could use &quot;acceptable&quot; synonyms. worked in levels of difficulty: i.e., if &quot;successful&quot; on one level, then moved to more difficult level. 't' tests</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Martin</td>
<td>to determine effects of completing cloze exercises on reading, writing, and listening.</td>
<td>College N = 142</td>
<td>Experimental Group I N = 50--studied transformational grammar. Experimental Group II N = 50--10 cloze exercises. Control Group N = 42--regular freshman English. Cloze passages from a variety of content sources--selective deletion of lexical elements--nouns, verbs, adjectives, adverbs. Multiple choice given for each.</td>
<td>selective deletions lexical verbs, nouns, etc.</td>
<td>9 weeks</td>
<td>Iowa Silent Reading Test</td>
<td>multiple choice given for each cloze blank space for first two weeks. Analysis of variance</td>
</tr>
</tbody>
</table>

*Adapted from Jongsma, *The Cloze Procedure as a Teaching Technique*, 1971.
**Table 2**

The First Round—Unsuccessful Studies
Comparing Cloze with Another Method*

<table>
<thead>
<tr>
<th>Researcher</th>
<th>Goals</th>
<th>Grade/No.</th>
<th>Materials/Lessons</th>
<th>Deletion System</th>
<th>Treatment Period</th>
<th>Tests</th>
<th>Features</th>
<th>Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friedman</td>
<td>to teach foreign students English. compared cloze group to a control group.</td>
<td>College foreign students</td>
<td>McCall-Crabb Standard Test Lessons in Reading.</td>
<td>every 5th word</td>
<td>2 cloze lessons per week for 10 weeks</td>
<td>Metropolitan Achievement Test</td>
<td>exact and synonym replacement acceptable</td>
<td>'t' tests</td>
</tr>
<tr>
<td>1964</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schneyer</td>
<td>to explore the effects of cloze procedure upon reading comprehension and to compare the effects to a control group not doing cloze exercises.</td>
<td>Grade 6 N = 32-- experimental group.</td>
<td>basal materials for cloze lessons of 200 words in length.</td>
<td>every 10th word</td>
<td>11 weeks</td>
<td>Gates Reading Survey (Form I and Form II)</td>
<td>cloze passages were administered in alternating fashion. exercises corrected by teacher, then returned and reviewed the following day. children also participated in regular reading programs.</td>
<td>Analysis of covariance</td>
</tr>
<tr>
<td>1965</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study</td>
<td>Participants</td>
<td>Intervention</td>
<td>Outcome Measures</td>
<td>Notes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>---------------------------------------</td>
<td>------------------------------------</td>
<td>------------------</td>
<td>----------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blumenfield and Miller 1966</td>
<td>College English majors</td>
<td>36 passages of 150 English words</td>
<td>Davis Reading Test</td>
<td>No mention. Scored on exact replacement, synonym, and grammatical acceptability. Analysis of Variance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cross-Sectional Group for 3 weeks</td>
<td>every 5th word on rotation, so deleted words represented all words in the passage.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Longitudinal Group for 12 weeks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Block</td>
<td>Differential Aptitude Battery.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>California Test of Mental Maturity.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Iowa Test of Basic Skills.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Information Retention Test.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cloze tests</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Bloomer, et al. 1966 | Grades 5, 7, 9, and 11 | Cross-Sectional Group 6 cloze lessons, 2 per week for 3 weeks. | Cross-Sectional Group every 10th word | Longitudinal groups blocked in 4 groups of 6 selections each. These were rotated through the 4 groups. Thus 4 presentations of 3 weeks each. Cross-sectional students given a single block of material for completion over 3 weeks. No direct teaching. |
|                       | N = 1090.                           | Longitudinal Group 9th grade pupils only for 12 weeks received 24 lessons at a rate of 2 per week. | Longitudinal Group for 12 weeks. | 't' tests Analysis of Variance |

Bloemer et al. 1966 to measure the effects of cloze procedure exercises in a series of training sessions on reading comprehension. To determine if non-reinforcement or non-overt reinforcement is sufficient to sustain motivation.
<table>
<thead>
<tr>
<th>Study</th>
<th>Author(s)</th>
<th>Grade</th>
<th>N</th>
<th>Lessons per week</th>
<th>Duration</th>
<th>Test</th>
<th>Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heitzman and Bloomer 1967</td>
<td>to measure the effects of five types of non-overtly reinforced cloze exercises and to compare the effects to a control group.</td>
<td>Grade 9</td>
<td>125</td>
<td>2 lessons per week with multiple choice questions.</td>
<td>every 10th</td>
<td>12 weeks</td>
<td>Iowa Test of Basic Skills.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>including selected deletions: random, noun, verb, modifier, preposition and conjunction, and noun determiners.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guice 1969</td>
<td>to compare college students who received regular instruction with added cloze practice with a group that received only regular instruction in reading comprehension.</td>
<td>College</td>
<td>76</td>
<td></td>
<td>every n th concept word--2 cloze lessons per week.</td>
<td>Cooperative English Tests (reading comprehension)</td>
<td>exact and synonym replacement.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Analysis of Variance</td>
</tr>
</tbody>
</table>

*Adapted from Jongsma, The Cloze Procedure as a Teaching Technique, 1971.
A consideration of the factors set out in Tables 1 and 2 shows that they gave researchers very little guidance in designing new studies on the value of cloze procedures as a technique for improving reading comprehension. However, the tables do provide some information from which general conclusions could have been drawn by the researcher interested in upper elementary school pupils. These conclusions are:

1. Of the studies done at the fifth, sixth, and seventh grade levels, none showed that cloze was more successful than traditional methods.

2. The two studies done with sixth grade pupils have very few subjects (18 and 66). No one to that point had attempted any large scale study.

3. Each study was completely different from the others in type of deletion system; one used a programmed format; the second, every tenth word deletions and noun/verb deletions; the third used 10 percent deletions of (a) random, (b) nouns, (c) verbs, (d) modifiers, (e) function words, (f) noun determiners, and (g) a control passage with non-deletion. None of these was "successful". Overall, results were not encouraging.

**Jongsma's Advice.** Jongsma did consider, however, that studies should continue to be done and his advice to future researchers was quite extensive. He discussed at some length the problems of the studies done to that date and suggested that future directions should provide for (1) improved teaching efforts, (2) more direct focus on the problem, (3) better experimental designs, (4) improved measurement procedures, and (5) better reporting of the research.
Under the heading **improved teaching efforts**, Jongsma pointed out that researchers should seek to interject more specific procedures to make sure students understood what was required and develop a system of teaching for meeting the requirement. In other sections he discussed scoring systems as well and suggested that researchers might accept varied responses, taking into account both syntactical and semantic consideration. He also recommended that studies of longer duration should be attempted.

In a discussion of **more direct focus**, Jongsma suggested that researchers to that date had not been clear about the skills they had to develop and so had been using what he termed a "shotgun" approach. He stressed the idea that the deletion system should be carefully chosen with a specific purpose in mind. In this regard he pointed out that the use of cloze to teach students to use context clues might be interesting. And he added that work should be done in the use of the cloze to teach reading in the content areas, as well as for (a) acquainting speakers of non-standard English with the more formal structures of written standard English, (b) teaching word meaning, and (c) for remedial situations.

Jongsma discussed **better experimental designs** at some length and pointed out a number of ways in which blocking, stratifying, and levelling strategies could be used to reduce experimental error and make a design more sensitive to general effects.

Also pointed out in Jongsma's discussion were ideas bearing on **improved measurement procedures**. He was concerned about the tendency to use standardized tests and thought that they might be selected more carefully, or that pre- and post-cloze tests might be substituted.
In a final section of advice to future researchers, Jongsma provided guidelines for reporting cloze research and suggested that the researcher should report (a) the type of cloze procedure used, (b) the material used, (c) the scoring system, (d) the characteristics of the population used, (e) the characteristics of the tests used, and (f) the type of "other" procedures used.

It seems fair to say that Jongsma's 1971 monograph was a valuable contribution to research both for its summary of work done to that date and for the guidelines offered for future work. Certainly the research done to 1970 was extremely varied in content and design, and conclusions could be only tentative.


Jongsma's second monograph (1980), as well as subsequent studies on the cloze procedure, make it evident that studies that used upper elementary grades (intermediate level) had increased sharply in number (seventeen in all) and that Jongsma's advice had had considerable impact on research generally. Eight of the seventeen upper elementary studies were successful when cloze procedures were compared to other teaching methods; and Jongsma's monograph and original reports as well as subsequent research literature indicate that teaching efforts, focus, experimental designs, and measurement procedures were much more carefully considered and planned than were the previous efforts. The quality, variety and quantity of information available is evident in Tables 3 and 4.

Table 3 provides details on eight successful studies. Table 4 provides details on nine unsuccessful studies. Both tables are organized under the same headings as were used in Tables 1 and 2.
### Table 3

The Second Round—Successful Cloze Comprehension Studies

<table>
<thead>
<tr>
<th>Researcher</th>
<th>Goals</th>
<th>Grade/No.</th>
<th>Materials/Lessons</th>
<th>Deletion System</th>
<th>Treatment Period</th>
<th>Tests</th>
<th>Features &amp; Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guscott* 1971</td>
<td>to compare the effects of two treatments (one cloze, one traditional) on reading comprehension and social studies knowledge.</td>
<td>Grade 6 N = 66</td>
<td>social studies content. (every 5th word (lexical)); daily silent reading intact passages.</td>
<td>Selective—2 treatments: cloze—noun determiners; regular instruction—normal social studies lessons.</td>
<td>8 weeks, 40 lessons</td>
<td>Iowa Test of Basic Skills. Social Studies cloze test.</td>
<td>Discussion of corrected answers.</td>
</tr>
<tr>
<td>Faubion* 1971</td>
<td>to compare the effects of three treatments (cloze, lexical cloze and structural, and daily silent reading) on reading comprehension.</td>
<td>Grade 4 N = 101</td>
<td>social studies content (100 word passages). (every 5th word (structural)).</td>
<td>every 5th word (lexical).</td>
<td>2 weeks</td>
<td>Standard Reading Achievement Test—F-W. Cloze tests (lexical and structural).</td>
<td>Discussion Analysis of Variance</td>
</tr>
</tbody>
</table>
Table 3 (continued)

| Culhane* | to evaluate the effect of cloze on social studies comprehension using an "iterative" research procedure. | Grades 6 & 7 | N = 184 | social studies materials (250 word passages). | Phase 1—social studies given expanded direction. | Phase 2—social studies given exact synonym training. | Phase 3—results of Phase 1 and 2 provided information for Phase 3. | Experimental and control groups used. | Experimental group—(2 parts: 1 for exact replacement, 1 for synonym)—received cloze passages—limited discussion. | Control group—intact passages—discussed ideas. | every 10th word | 1 week | Cloze test | teacher led discussion and students led discussion. synonym scoring. Levels (IQ) by treatment Analysis of Variance | 5 lessons |
Table 3 (continued)

<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>Design</th>
<th>Participants</th>
<th>Materials</th>
<th>Procedures</th>
<th>Duration</th>
<th>Measures</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grant*</td>
<td>1976</td>
<td>compare effects of 2 treatments (1 cloze and 1 traditional) on comprehension and social studies content.</td>
<td>Grade 6 N = 40</td>
<td>Social studies materials (150 word passages). 2 treatments. Day 1—all were prepared and read intact passages. Day 2—experimental group did cloze in groups of 3—control group answered questions. Day 3—all corrected responses.</td>
<td>every 10th word (noun determiners, nouns, structural words).</td>
<td>9 weeks 7 lessons</td>
<td>Gates-McGinitie Social studies content.</td>
<td>Both groups discussed answers. Analysis of Variance</td>
</tr>
<tr>
<td>Martinez*</td>
<td>1978</td>
<td>to compare effects of 2 treatments (cloze based on context clues, and traditional) on social studies comprehension.</td>
<td>Middle level school honor class N = 102</td>
<td>materials from social studies texts (350 word passages). 2 treatments: cloze modified to focus on 7 context clues, one at a time, with practice on single sentences first, longer passages later;</td>
<td>selective to match context clues.</td>
<td>6 weeks 18 lessons</td>
<td>Cloze test. Social studies comprehension test. Attitude measure.</td>
<td>carefully sequenced instruction on one context clue at a time. Discussion of all answers. scored for semantic, syntactic, and exact word replacement levels (reading by Analysis of Variance)</td>
</tr>
</tbody>
</table>

*Adapted from Jongsma, The Cloze Procedure as a Teaching Technique, 1971.
<table>
<thead>
<tr>
<th>Researcher</th>
<th>Goals</th>
<th>Grade/No.</th>
<th>Materials/Lessons</th>
<th>Deletion System</th>
<th>Treatment Period</th>
<th>Tests</th>
<th>Features/Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green 1982</td>
<td>to determine the efficacy of the cloze procedure as an instructional technique for improving reading comprehension and for enhancing divergent production</td>
<td>Grade 6 N = 96</td>
<td>3 treatments—two types of cloze product approach; exact word replacement and process approach (synonyms acceptable)</td>
<td>every 10th word</td>
<td>6 weeks</td>
<td>Gates Macginitie Post test only control group design</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Divergent Production Test</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Association Fluency Test</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Guildford Creativity Test for Children</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Analysis of variance</td>
<td></td>
</tr>
<tr>
<td>McGovern 1982</td>
<td>to determine the effect of instruction in mental imagery and a modified cloze procedure on reading comprehension</td>
<td>Grade 6 N = 94</td>
<td>3 treatments</td>
<td>selective modified cloze</td>
<td>2 weeks</td>
<td>Gates Macginitie Forms 1 and 2 Pre and post test</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Analysis of covariance</td>
<td></td>
</tr>
<tr>
<td>Carr, Dewitz, Pohtberg 1983</td>
<td>to develop inferential reading comprehension using expository text material social studies</td>
<td>Grade 6 N = 75</td>
<td>3 treatments; 3 groups</td>
<td>selective</td>
<td>2 weeks</td>
<td>pre-test</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ITBS</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OIST-test</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Analysis of covariance</td>
<td></td>
</tr>
</tbody>
</table>
## Table 4

### The Second Round—Unsuccessful Cloze Comprehension Studies

<table>
<thead>
<tr>
<th>Researcher</th>
<th>Goals</th>
<th>Grade/No.</th>
<th>Materials/Lessons</th>
<th>Deletion System</th>
<th>Treatment Period</th>
<th>Tests</th>
<th>Features</th>
<th>Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rynders* 1971</td>
<td>to compare the effects of 2 treatments (cloze and traditional) on reading comprehension.</td>
<td>Grade 6 N = 189</td>
<td>narrative material. Close—on last quarter of continuous story passage. Traditional—continuous story followed by 5 to 7 questions.</td>
<td>every 5th word deletion.</td>
<td>6 weeks</td>
<td>25 lessons</td>
<td>Gates-McGinitie Survey D.</td>
<td>independent or group work on cloze. groups either homogeneous or heterogeneous.</td>
</tr>
<tr>
<td>Rhodes* 1972</td>
<td>to compare the effects of 3 treatments (2 cloze deletion systems and regular instruction on reading comprehension).</td>
<td>Grade 6 N = 153</td>
<td>varied narrative and content material. 3 treatments: Cloze 1—every 10th word; Cloze 2—every 10th noun/verb; Control—non-mutilated passages with 5 questions after each passage.</td>
<td>every 10th word (random) and every 10th noun/verb deletion.</td>
<td>6 weeks</td>
<td>18 lessons</td>
<td>Stanford Diagnostic Reading Test. Cloze test pre test.</td>
<td>teacher corrected; students reviewed answers. No discussion took place. readability of exercises monitored. Analysis of Variance</td>
</tr>
<tr>
<td>Study</td>
<td>Grade(s)</td>
<td>Language Experience</td>
<td>Type of Presentation</td>
<td>Duration</td>
<td>Achievement Test</td>
<td>Notes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>----------</td>
<td>---------------------</td>
<td>----------------------</td>
<td>----------</td>
<td>------------------</td>
<td>-------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pepin</strong></td>
<td>Grades 4, 5, and 6</td>
<td>high interest/low vocabulary and language experience materials.</td>
<td>3 treatments: Close 1—every word on high interest/low vocabulary; Close 2—every word on language experience; Silent reading—of high interest/low vocabulary material.</td>
<td>28 weeks</td>
<td>California Achievement Test (reading)</td>
<td>supervised for consistency of presentation. Lessons presented twice per week.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>1973</em></td>
<td>30 classes N = 278</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cox</strong></td>
<td>Grade 4</td>
<td>SRA Lab passages (200 word passages).</td>
<td>3 treatments: Close 1—10 minute instruction (selective deletions); Close 2—no instruction (every close word); Traditional—intact passages and multiple choice questions.</td>
<td>8 weeks</td>
<td>SRA Achievement Test</td>
<td>no discussion after Cloze 1. Discussion after Cloze 2, then follow-up exercise. Discussion after intact passages; oral reading.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>1974</em></td>
<td>N = 71 (disadvantaged)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Houston</strong></td>
<td>Grade 6</td>
<td>narrative and content material.</td>
<td>3 treatments: Close 1—every 10th whole word deleted; Close 2—every 10th word, initial letter retained; Traditional— basal program, e.g., Ginn 360</td>
<td>28 weeks</td>
<td>California Achievement Test (reading)</td>
<td>supervised for consistency of presentation. Lessons presented twice per week.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>1976</em></td>
<td>N = 279 (disadvantaged)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Analysis of Variance
Table 4 (continued)

<table>
<thead>
<tr>
<th>Study</th>
<th>Grade</th>
<th>Treatments</th>
<th>Narrative Material</th>
<th>Time</th>
<th>Tests</th>
<th>Teacher Read Aloud</th>
<th>Other Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Johns *</td>
<td>4</td>
<td>narrative material. 4 treatments: Cloze 1 --- every 10th modifier; Cloze 2 --- every 10th noun or verb; Cloze 3 --- every 10th word; Traditional --- intact passages.</td>
<td>N = 222</td>
<td>25 weeks</td>
<td>Gates-McGinitie Reading Test</td>
<td>teacher read aloud passages before exercises done.</td>
<td></td>
</tr>
<tr>
<td>Sinatra *</td>
<td>6 (high risk)</td>
<td>mixed narrative and descriptive/expectancy materials.</td>
<td>N = 44</td>
<td>4 weeks</td>
<td>Standard Diagnostic Reading Test. Cloze tests.</td>
<td>followed standard set of teaching strategies using activity specialists in drama, science, arts and crafts, and rhythms. 't' tests for comparing means.</td>
<td></td>
</tr>
<tr>
<td>Yellin *</td>
<td>5</td>
<td>materials from SRA Labs. 2 treatments: Cloze 1 --- (product) independent completion/correction; Cloze 2 --- (process) group completion assisted by teacher.</td>
<td>N = 104</td>
<td>7 weeks</td>
<td>Cloze tests from SRA material. Gates-McGinitie Reading Test.</td>
<td>product approach encouraged one correct answer. No discussion. Process approach encouraged varied answers. Discussion. Analysis of Variance</td>
<td></td>
</tr>
</tbody>
</table>

*Adapted from Jongema, The Cloze Procedure as a Teaching Technique, 1971.
Table 4 (continued)

<table>
<thead>
<tr>
<th>Researcher</th>
<th>Goals</th>
<th>Grade/No.</th>
<th>Materials/Lessons</th>
<th>Deletion System</th>
<th>Treatment Period</th>
<th>Tests</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marley 1982</td>
<td>to determine to what extent the use of the cloze procedure could increase reading comprehension in remedial reading students</td>
<td>Grades 2, 3, 30 lessons 4, 5, 6, 7, 8</td>
<td>2 treatments control and experimental groups used</td>
<td>every 10th word</td>
<td>15 weeks</td>
<td>Pre and post SRA reading comprehension subtest</td>
<td>students were 6 or more months behind in reading comprehension no significant differences were established between cloze instruction and regular remedial instruction 't' tests</td>
</tr>
</tbody>
</table>

Data Analysis
Comparison of successful and unsuccessful studies. A comparison of the successful and unsuccessful studies category by category is made easier if a tabular format is provided (Table 5). This reassembling of the content of Tables 3 and 4 into a single table (Table 5), makes it possible to draw conclusions about the research on cloze procedures in the upper elementary school grades using the headings as in Tables 1 and 2.

The conclusions as drawn from an examination of Table 5 are presented below:

1. Goals: The use of only two treatments (cloze versus traditional) produced generally better results than more than two treatments.

2. Grade/Number: Grade 6 was the most commonly used grade for samples and just as many studies at that grade level were unsuccessful as were successful. Small scale studies (average 93 students) were, on the whole, more successful than studies with a larger number of students (average approximately 167 students).

3. Materials/Lessons: Six of the successful studies used social studies materials, while two used narrative materials; the unsuccessful studies used narrative, combined narrative and content, or specialized material. Treatments were too varied to permit much generalization about what might be successful in the future. Although it may be unfair to suggest that the choices of procedures were idiosyncratic, it seems true that few researchers try to build on the successes of others.

4. Deletion Systems: These were extremely varied, with random selection (either every fifth or every tenth word) occurring most frequently in the unsuccessful studies. Specific deletions of a variety of types were typical of successful studies. One study (Martínez) used
Table 5
Comparison of Successful and Unsuccessful Studies on Seven Factors

<table>
<thead>
<tr>
<th>Factors</th>
<th>Successful Studies</th>
<th>Unsuccessful Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goals—Treatments in Study</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 treatment</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2 treatments</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>3 treatments</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>4 treatments</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Grade/No. (Average N)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Honor students</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Combined grades</td>
<td>1 (6/7)</td>
<td>3 (2/8)</td>
</tr>
<tr>
<td>*(N=93) *(N=167)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Materials/Lessons</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Studies</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Narrative</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Combined Narrative/Content</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Special</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td><strong>Deletion Systems</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Random</td>
<td></td>
<td></td>
</tr>
<tr>
<td>every 5+</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>every 10+</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Selective</td>
<td></td>
<td></td>
</tr>
<tr>
<td>every 5 (lexical)</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>every 5 (structural)</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>noun determiners</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>noun determiners, nouns,</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>structure words</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>noun/verbs</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>modifiers</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>noun determiners</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>to match context clues</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>to match questions</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>modified cloze (not defined)</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td><strong>Special Treatment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>every 10, with initial letter retained</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

*numbers from 1982 study not available
Table 5 (continued)

<table>
<thead>
<tr>
<th>Factors</th>
<th>Successful Studies</th>
<th>Unsuccessful Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Treatment Periods</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 week</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2 weeks</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>3 weeks</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>4 weeks</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>5 weeks</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6 weeks</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>7 weeks</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>8 weeks</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>9 weeks</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>10 weeks</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>11 weeks</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>12 weeks</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>15 weeks</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>25 weeks</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>28 weeks</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Tests</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cloze</td>
<td></td>
<td></td>
</tr>
<tr>
<td>regular</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>lexical</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>structural</td>
<td>**1</td>
<td>0</td>
</tr>
<tr>
<td>social studies content</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td><strong>Social Studies Content</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Standardized Group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iowa</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Gates McGinitie</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>SRA</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Stanford Diagnostic</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>California</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Divergent Production Test</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Data Analysis</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discussion with lessons</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Post Test Design</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Levels ( ) x Treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading -2**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IQ - 1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**not significant**
selective deletions to teach the use of context clues, clearly an attempt to respond to Jongsma's suggestions (1980, p. 23).

5. **Treatment Period**: Treatment periods were as short as one week and as long as seven months (about 30 weeks). The successful and unsuccessful studies were about equal in number when studies were examined up to a treatment length of eight weeks.

6. **Tests**: As Jongsma had suggested, cloze tests seem to have been more sensitive to growth than standardized group tests. Four studies used a standardized group test (*Iowa Test of Basic Skills*) and showed significant growth on them.

7. **Lesson Features/Data Analysis**: Although, as noted above, lessons and materials were extremely varied, both successful and unsuccessful studies used discussion.

8. **Successful Studies**: The successful studies included discussion in the cloze procedure lessons and approximately half of the unsuccessful studies did as well. Levels (reading) by treatment designs were used in two successful and two unsuccessful studies. None showed levels and treatment interaction. However, in one study (Culhane 1972) where IQ levels were used in the analysis, it was shown that higher IQ levels predictably produced better learning.

This summarizing of the results of the second round of cloze studies is helpful in drawing conclusions about appropriate guidelines for future studies.
Guidelines for Future Studies

A number of suggestions can be made for possible studies:

1. Studies should possibly be restricted to two treatments until the specific influence of each is understood.

2. A grade other than Grade 6 should be used.

3. Materials and deletion systems should be carefully considered to take into account all pertinent factors. Only one study (Martinez) used a selective deletion system based on context clues instruction and her material used social studies content. Either factor could have produced the successful results. Further studies might attempt to develop context clues instruction using either narrative or content materials.

4. The study should not be overly lengthy, since lengthy studies appear to have been less successful than shorter studies.

5. If a standardized group test is to be used to measure possible gains a cloze test should also be employed.

6. Discussion techniques should probably be used and the larger the groups used, the more specific the discussion procedure "system" should be.

7. If context clue instruction is used, a levels (reading) by treatment analysis should be included, since Martinez used "honor students" and it may be that this type of treatment is most appropriate to high achieving students.
Summary of Cloze Procedure and Reading Comprehension

Both a first round and second round of cloze studies have produced more negative than positive results (ratio of 15:10). Overall, the research on cloze procedures to date, although better focussed and better reported, appears to need an iterative approach that focusses as much on what has not been successful as what has been successful.

[It might be appropriate to add that research was not confined to the intermediate grade level, however. The literature search produced four studies from the 1980s at the intermediate grade level where cloze procedure had been used as a teaching technique. Research did, however, investigate the use of the cloze procedure as a teaching technique at other grade levels. For example, of studies that were successful, two were at the high school level (Ackly, 1981 and Beil, 1981); one of each at the kindergarten and primary levels (Hasson, 1982 and Sampson, Valmont and Allen, 1982); and one was at the college level (Rogers, 1982). Those studies that were unsuccessful were conducted by Winters (1982) using a grade three sample, Shoop (1982) using a grade eight sample, and Houchen (1983) using a university level sample.]

Contextual Clues and Reading Comprehension

The literature on contextual clues is presented here under the two headings considered to be most pertinent to the focus of the study: (1) the value of context clues in reading, and (2) types of contextual aids.
The Value of Contextual Clues in Reading

The value of context clues in reading is supported both in statements of expert opinion and also in research evidence.

The value of teaching clues in reading: expert opinion. Readers should be aware of context clues (or contextual aids, as they are often called) and use them in comprehending prose. That opinion has been expressed by reading specialists, linguists, and psychologists quite frequently; and considered in the abstract, the statement has logical appeal. A careful examination of the arguments used to support the opinion shows, however, that those who hold the opinion do not all mean the same thing by it. There are, in fact, two clearly discernible lines of thinking evident in the rationales put forward to support the point of view.

One line of thinking suggests that readers should be taught to use context clues as an aid to: (a) recognizing a word, or (b) to deducing its meaning from the surrounding context. The assumption here is that readers recognize all but one word in a sentence or group of sentences and comprehend the sentence or group of sentences so well that they can use that comprehension to better decide what the "name" of an unrecognized word is or what its meaning might be. The focus in such a situation, then, is on a single word and the use of context clues to identify it. Comprehension, except for one word, then, is not a problem.
A second line of thinking about context clues suggests that readers may be deficient in their understanding of grammatic and syntactic relationships and how they function in connected prose. The assumption here is that readers recognize each word in a sentence or group of sentences but do not comprehend the sentence or group of sentences because of lack of understanding of how specific relational words function in context. The focus here is on relational words as context clues. General comprehension, then, is a problem.

Obviously, the two lines of thinking, both supporting the idea that use of context clues should be taught, start from opposite assumptions. In the review following, this dichotomy is recognized by dividing the literature into two parts: (1) identifying a word or deducing its meaning, and (2) comprehending connected prose.

1. **Word identification/meaning.** Statements about the value of using context clues to deduce word meaning have been found in the reading literature for a considerable period of time.

   In 1943, Artley urged that the use of context clues be taught, and stated that one of the most practical uses of context clues was to build and extend vocabulary in word meaning. He concluded his remarks by saying:
it is not only imperative that children know the existence of context clues, but that they utilize them automatically in their everyday reading. Only by so doing will they be able to transcend ordinary sense meaning and come to a complete understanding and full interpretation of what is being read. (p. 74)

Hafner (1967) said that teachers at all levels should encourage their students to use context to help them establish meanings of words and phrases. He suggested that students are successful at this to varying degrees and that any lack of success may be a result of a number of factors, some of which are: (1) a teacher's inability to teach contextual aids adequately, (2) context not being presented in such a way that there are sufficient clues to meaning, and (3) the reader not having sufficient skill in word recognition or not being adequately prepared to handle material in this special way, i.e. a student may not notice a shift in context because of the use of a particular connective.

Smith and Johnson (1980) in a section on word recognition in their text, suggest that using surrounding context to identify an unfamiliar word can be defined as "making an educated guess". They suggest further that context clues help define an unfamiliar word by providing syntactic, semantic, typographic, and stylistic clues.

All of these reading specialists seem to belong to the group of writers who believe that context clues are an aid to word meaning or word identification.

2. **Comprehension: connected prose.** As early as 1908, Huey made the point that understanding connectives was important at the very beginning of a child's school experience; but he also noted that teaching
them presented difficulties. He pointed out that understanding the functional use of "where" and "what" was most important but that teaching these words would pose considerable difficulty because there was no "imagery" associated with them. The difficulty lay, he thought, in getting the child to recognize these words as signals to forthcoming statements—clues that would provide pertinent information or ideas.

A few years later, Thorndike (1917) suggested that relational words—pronouns, conjunctions, and prepositions—have varying degrees of application and varying degrees of meaning. These variations, he thought, would have differential effects on the individuals who encounter these words. As an example, he said that the word "though" may be interpreted as "and" or "if", a fact that might put differential interpretation on a sentence. Thorndike was trying to convey the idea that relational words are difficult to understand and are not likely to be read with the precision and attention they require.

Artley (1943) in his discussion on connectives, stated further that "Structural or grammatical elements furnish useful clues of meaning", (p. 69).

Similarly, for many years, McCullough (1943, 1945, 1958) argued that a knowledge of contextual aids is essential to comprehension development. She stressed that the practice of teaching contextual aids should begin at the kindergarten level and proceed throughout the subsequent grades. In 1958 she stated:

Until we begin to define this area of learning and to make it a part of a continuous developmental program, until we begin to teach the techniques as well as require their use, the whole matter of comprehension must flounder. (p. 229)
A statement by Flesch (1946) reflected Huey's remarks made much earlier. He said that conjunctions were in fact words that did not produce an image, as perhaps a noun or verb might, and as a result, were difficult for children to learn and understand. Flesch provided an example when he compared the words "horse" and "unless". While the word "horse" would probably produce an image of a certain animal with particular features and characteristics, the word "unless" does not provide such an image, but rather functions as a signal to the reader that there is something important in the following clause, i.e. perhaps that there is a conditional relationship established. It seems reasonable to accept the idea that such words would pose difficulty to the immature reader and that much meaning would be missed if conjunctions (context clues) are not taught and learned well.

Support for teaching relational words as context clues deliberately and systematically was also supplied by Gates (1947) when he stated that these words are hard to learn and that teachers should teach them precisely whenever the opportunity presented itself.

Another researcher who was quite emphatic in her opinion about the value of connectives as context clues was Robertson (1968) who discussed connectives and word relationships and stated:

Children should be given systematic training through the reading program so they develop more facility at an earlier age in understanding increasingly complex communications from the printed page. (p. 146)

Dulin (1970) also stressed the importance of contextual clues meaning and suggested they should be taught consistently and systematically if students were to become skillful and proficient in obtaining
meaning from their reading material. Dulin suggests specifically that cloze exercises be used to develop the necessary skills.

A discussion of the importance of the class of context clues called connectives is not limited to students of reading behavior. Grammarians such as Beal (1934) and Roberts (1954) have stressed the importance of connectives to the acquisition of meaning. They, like reading specialists, have emphasized the fact that connectives are very important words in written discourse and thus warrant as much attention as other words in the sentence. Grammarians discuss prepositions as particular types of connectives that appear in front of nouns, or adjectives, or verbs that appear in the sentence.

Gleason (1965), also a grammarian, agreed with his colleagues and with reading experts that the English language has a large variety of clause connectives with widely varying patterns of use. This wide variation of use led Gleason to conclude that these words demand a great deal of attention and study.

In summary, there is a considerable body of opinion that suggests that teaching readers to use context clues should have a favourable impact on their ability to identify or define unfamiliar words and to obtain meaning from connected prose.

The value of context clues in reading tasks: experimental evidence. A number of researchers have gone beyond generalized statements about the value of skill in using context clues. They have studied the ability of elementary, high school, and college students to use context clues in normal reading tasks. It should be noted that most studies, other than those studies using the cloze procedure, have focused on
teaching context clues as a means of establishing word meaning rather than developing comprehension abilities. The following discussion includes both word-centered studies and those studies that attempted to increase reading comprehension abilities through developing the knowledge and application of context clues. The discussion begins with (1) word-centered studies, and (2) then presents the comprehension-centered studies. Interestingly there appear to be only two studies that focus on the value of teaching the use of context clues as a way to enhance reading comprehension.

1. **Word-centered studies.** One early study was done by Elivian in 1938. She inserted unfamiliar words into paragraphs in which the contextual clues were considered to be definition, synonym, repeated usage, and inference. These passages were then given to students ranging from grade four to grade eight. The findings of this study revealed that 22% of the meanings of the unknown words were discovered by use of context and that the increase in ability to establish the meaning of the unknown words increased with grade level or synonymously with reading ability. While a "success" rate of 22% is not high, it does provide evidence that context clues might be useful.

Hafner (1965) has reported a study by Peterson (1942) who used a sample of junior high students in an experiment on teaching the use of context clues. Hafner said that Peterson found that students made significant gains in ability to unlock meanings in context. After the training session, the children made significant gains in using these context clue categories and maintained their gains when compared to control groups not receiving the training.
McKee's work in 1948 might be considered as a validation of Peterson's finding in 1942. McKee's sample of average fourth grade readers was able, working independently, to derive the meaning of unfamiliar words by the use of contextual clues alone about 30% of the time. This evidence would suggest that carefully planned lessons with systematic instruction in the use of contextual clues might raise the success rate to a significantly higher figure.

Using a sample of grade ten students, Guarion (1960) provided instruction in five types of contextual clues: definition, synonym, comparison or contrast, summary, and past experience. The instruction in context clues was directed at teaching the 153 students in the experimental group to use the contextual clues to derive word meaning. A control group of 148 students received no instruction in use of contextual aids.

After the completion of eleven lessons, the performances of the experimental and control groups were analyzed. The findings led to the conclusion that instruction in use of contextual clues resulted in significant improvement in the students' ability to infer the meanings of unfamiliar words encountered in reading passages and that the ability to use context clues to infer word meaning is significantly correlated with reading ability.

Robinson (1963) conducted a study in which he attempted to discover whether grade four students using contextual aids alone could identify unknown words or whether they would have to rely on additional clues to make correct identification. He found that only about one-seventh of one percent of the test words were identified, and that only about 14% of the responses were meaningful synonyms. He did not state which
contextual aids were being considered. However, Robinson's results do suggest a lower value for contextual clues for the purpose of word identification than other authors have suggested, at least at the grade four level.

Emans and Fisher (1967) conducted a study similar to that of Robinson's. Their sample ranged from grade three to grade ten, with from 50 to 150 pupils in each grade. They concluded, like Robinson, that contextual clues alone were insufficient to establish word meaning and that the task became somewhat easier as the number of other clues increased. Other clues provided were configurations, beginning letters, and ending letters.

A finding by Spache and Berg (1966) is in direct contrast to the Robinson and Emans and Fisher studies. They found that high school students were able to derive word meaning about 50% to 60% of the time. A further finding reported by Spache and Berg was that high school students did not appear to develop mastery of use of contextual clues beyond the 50% to 60% level throughout their high school years. This rate of success appears to be higher than any of the previous studies. However, this result may be related either to the grade placement of the population, or to the tasks set. It may be that many younger elementary school children have not yet reached a stage of conceptual development that will permit them to elicit meanings of specific words from context. Certainly the studies reviewed indicate that high school pupils are better able to use context clues to deduce word meaning than are elementary pupils, although no single study contrasted high school and elementary school pupils.
2. **Comprehension-centered studies.** In a sense, every study that has used the cloze procedure, and then provided for discussion of appropriate answers, has been an informal test of the validity of the idea that training in the use of context clues improves reading comprehension. The word "informal" is, of course, the critical word here. In this section of the literature review, only those studies are included where instruction was structured around specific context clues types. Only two such studies were found.

Using 48 college students, Seibert (1945) provided instruction in the use of context and then required the students to predict appropriate words deleted from passages containing selected contextual clues. The clue categories were word association, sentence structure, association of clues, use of definition, and general paragraph meaning. He found that the average score on two contextual tests, with 57 and 46 blanks, was 60 percent and 61 percent respectively. Seibert concluded that the results were such that teachers should provide direct instruction in use of contextual clues.

Hafner (1960), working with a sample of fifth grade pupils, evaluated the reading achievement of an experimental group after the children had received instruction in the use of three rather specific contextual aids (contrast, explanatory words, and phrases) as well as two inferential aids. Instruction was given for three 35-minute periods per week for a total of four weeks. Two groups of students from different schools and environmental settings acted as control groups.

Statistical analysis of the pre- and post-tests showed that no group scored significantly better on measures of comprehension or
vocabulary. The author did point out the experimental group obtained scores superior to those of the control groups on the vocabulary-in-context subtest.

In summary, it seems apparent from the above that although advice about context clues teaching is fairly extensive, research on its efficacy is sparse and clearly more research using different modes of presentation of contextual clues would be worthwhile.

Types of Contextual Aids

When some writers refer to the usefulness of context clues or aids, they are referring to words that grammarians call function words, structural words, or relational words. Other writers take a different tack and refer to context clues that have a "content" component and would be classified by grammarians as nouns, verbs, or noun phrases and verb phrases. Reading the literature causes some confusion therefore, if the phrase "context clues" alone is used. Some labels, then, seem to be needed to differentiate types of context clues.

McCullough (1958) has supplied those labels. She refers to *idea clues* and *presentation clues* and defines *idea clues* as those items or devices that help provide the thought or idea of a sentence. She goes on to define *presentation clues* as elements in written material. This includes word position and word function and ultimately leads to the meaning. McCullough says a referent word such as "who" functions to convey a certain message.

This concept, reflecting as it does the lexical/structural deletion concept used in cloze procedures, can be very useful in analyzing the literature on context clue types.
Types of contextual aids: idea category. Almost all authors of reading textbooks discuss a variety of contextual aids and their possible uses for assisting the reader in word recognition and meaning. They do not, of course, employ the terms "idea-type" and "presentation type" since these are original to McCullough. They are, however, very convenient terms.

Artley (1943) discussed content-centered contextual clues and listed among them, structural aids, substitute words, word elements, pictorial representation, inferences, direct explanation, and tone. A statement by McKee (1948) about types of context clues, spoke of comparison/contrast and cause/effect, and included past experience as an important and necessary context clue.

Similarly, Deighton (1959) and Harris (1962) produced examples of context clues which included the items suggested by Artley and others, but added such elements as modifiers, examples, restatements, equivalent phrases, and sentence design. Actually, some of these labels, while different from other lists, are probably not actually new but simply a relabelling of previously identified items.

In an important study on the subject of contextual clues, discussed earlier, Ames (1966) produced a list of contextual aids/types that were arrived at by study of student responses. Using a population of college graduate students, he had them describe the contextual aids they used to identify deleted words in a modified cloze passage. The students were asked to complete cloze passages and to state what information they had used and how they had used that information in choosing a word for the deletion. After analyzing the students' responses, Ames compiled the following list of idea-type contextual clues:
- clues from language experience of familiar expression
- clues utilizing modifying phrases or clauses
- clues utilizing definition or description
- clues provided through words connected or in series
- clues of comparison or contrast
- clues utilizing synonyms
- clues providing tone setting or mood
- clues of referral
- clues utilizing association
- clues derived from main idea and supporting detail
- clues provided by question and answer pattern of paragraph phrases
- clues derived from cause and effect pattern of paragraph and sentence organization

Karlin (1975) devoted considerable space in his text to the discussion of contextual clues and identified such clues as cause/effect, description, morphemes, figurative language, typographical clues, maps, and graphs.

The information presented above about useful contextual aids is probably more easily grasped in tabular form (see Table 6). This summarizing chart makes it evident that certain context clue types appear more frequently than others and that some are cited infrequently. An analysis of some apparently unique items might show that they are not in fact unique, but are simply terms for items already listed. Rankin and Overholser (1969) did, in fact, review the works of eight authors who had compiled lists of idea clues and from the results of the review, produced a list of thirty-six idea-type contextual clues. They stated that "many of the clues are synonymous and are not mutually exclusive", (p. 52).

There is probably no purpose to be served by pursuing any further analysis of these items per se. Six items are listed consistently by at least five of seven authors. The logical conclusion would be that these items, at least, should be used as the basis for any proposed teaching
Table 6

Context Clue Types: Seven Sources

<table>
<thead>
<tr>
<th></th>
<th>McKee</th>
<th>Karlin</th>
<th>McCullough</th>
<th>Ames</th>
<th>Artley</th>
<th>Deighton</th>
<th>Harris</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cause/Effect</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Comparison/Contrast</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Description/Definition/Explanation</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Time Relationship</td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Past Experience (Direct experience)</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Synonym (Substitute words)</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Condition</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Mood/Tone (Figurative language)</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Pictures</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Maps/Graphs</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Inference</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Morphemes (Word element)</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Structural Aids (Typographical)</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Example</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Restatement</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Equivalent Phrase</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Sentence Design</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Modifiers</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Words in Series</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Referral</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Association</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Main Idea and Supporting Details</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Question and Answer Pattern</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>
of context clue skills.

Types of contextual aids: presentation category. A common method of dividing or classifying connectives, is into two main categories—coordinate and subordinate connectives. Coordinate connectives join two words, two phrases, or two clauses that are of equal importance. These two connective units form a complete sentence. A coordinate connective such as "and" might be used as follows:

Rain and hail fell.

A subordinate connective connects phrases or clauses of unequal importance. An example might be:

We did not want to break the container because the contents would be lost.

Connectives can also be classified or described by their particular function. Examples of this classification are provided by Beal (1934) and Roberts (1954). Their classifications and connectives are:

1. an additional thought, such as and, furthermore, moreover, too;
2. a previous thought such as: so, hence, therefore, accordingly, consequently;
3. a complete change of thought, such as: but, however, still, nevertheless, notwithstanding;
4. a fresh emphasis or a new explanation or description of the thought such as: indeed, namely, anyhow, anyway.

A different set of labels was used by Shaw (1958). Shaw's listing is as follows:

1. subordinating connectives such as because, since, signal cause/effect relationships; if, unless, although, signal conditional relationships; as, before, when, after, signal contrast relationships;
2. adverbial connectives add emphasis or impact to previously presented ideas and include connectives such as similarly, hence, conversely, nevertheless, however, therefore;
3. descriptive connectives including also, furthermore, moreover;
4. tone or mood connectives such as namely and indeed.
Robertson (1968), in her study investigating elementary school children's understanding of connectives, presented the following classification:

1. subordinate simple included clause connectives such as: although, because, if, so, that, when, where;
2. subordinate clause connectives or relative pronouns such as: that, which, who;
3. coordinate clause connectives such as: and, but, yet;
4. sentence linkers such as: however and thus.

Obviously Robertson's classifications are more like Beal's and Roberts' and less like Shaw's. They focus more on function and less on types of relationships signalled.

It is evident from the above discussion that there are various ways to classify connectives and a close examination of the suggested categories shows that it is Shaw's categories that reflect, at least to some extent, those suggested by idea clue categories (see above, Table 6). This overlap is clarified in Table 7. The Beal/Roberts categories apply in only one case and none of the Robertson categories are applicable. Any material planned to teach both presentation-type clues and idea-type clues should probably accept the Shaw category classifications for the target words.
<table>
<thead>
<tr>
<th>Most Common Idea Clue Categories (from Table 6)</th>
<th>Presentation Clue Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cause/Effect</td>
<td>Beal/Roberts</td>
</tr>
<tr>
<td>Comparison Contrast</td>
<td>Shaw</td>
</tr>
<tr>
<td>Description/Definition Explanation</td>
<td>Robertson</td>
</tr>
<tr>
<td>Time</td>
<td></td>
</tr>
<tr>
<td>Past Experience/Direct Experience</td>
<td></td>
</tr>
<tr>
<td>Synonym (substitute)</td>
<td></td>
</tr>
<tr>
<td>Condition</td>
<td></td>
</tr>
<tr>
<td>Mood/Tone/Figurative Language</td>
<td></td>
</tr>
</tbody>
</table>
Summary

The literature review has focussed on three main areas: (1) the cloze procedure and reading comprehension, the theoretical base, (2) the cloze procedure and reading comprehension, practical considerations, and (3) contextual clues and reading comprehension. The literature relating to the second of the three main areas indicated a significant shift in the research studies following Jongsma's discussion and advice in his first monograph in 1971. His second monograph in 1980 cited studies in which several researchers seemed to follow his advice with the outcome being research designs with improved methodologies and procedures. Table 3 provides evidence for this, where proportionately more researchers achieved "success" than were evident in Jongsma's 1971 review of the literature. Again, this success is probably a reflection of better studies, where more directed and focussed teaching occurred and where design and statistical analyses were more carefully developed and applied.
CHAPTER III

DESIGN OF THE STUDY

The study was designed to address three areas of concern:

(1) the use of the cloze procedure as a teaching technique for developing skill in reading comprehension; (2) the relative effectiveness of direct focus on specific context clues—idea clues (noun/verb deletions) and presentation clues (connective deletions); and (3) the relative effectiveness of cloze lessons presented through intensive or non-intensive teaching.

The teaching materials and the testing instruments are described in this chapter. This is followed by a description of the procedures used in securing the data. This includes the field trial, the selection of classrooms and their assignment to treatment, the duration of the study, the administration of the cloze lessons, and the administration of the tests. This in turn is followed by certain experimental control procedures. Finally, the statistical procedures and analyses used in the study are described.

Teaching Materials

The following materials were developed for use by teachers and/or students during the study: the cloze procedure lessons, teachers' guides, and the students' contextual aid charts.
Cloze Procedure Lessons

Twenty-three cloze passages, of approximately 200 to 250 words in length, were developed for use in the study. Passages used for the construction of cloze exercises were selected from the basal series, *Under Canadian Skies*, Book 5 of the Canadian Heritage Readers, published by J. M. Dent and Sons (Canada) Ltd., Toronto, 1962. This reader was selected because it provided stories of wide variety and because it was not familiar to the students in the sample.

The stories used for the cloze passage lessons were chosen because they met certain criteria. Idea and presentation clues were present to the extent that each one had ten deletions. The passages appeared interesting.

The classes used in the study consisted of students of varying backgrounds and as a result an attempt was made to adjust to a variety of readers' interests considering variables such as sex and the maturity levels of the students.

A sample of the passages used can be found in Appendix B. The readability level of each of the passages was established by the Dale-Chall Readability Formula (Dale and Chall, 1948). The range of readability levels was from 4.1 to 5.8, which is considered by the publishers of the Canadian Heritage Readers to be a normal fifth grade range.

The deletion system used in this study was referred to as a "modified" cloze deletion system. This system is considered modified in that the regular or traditional nth word deletion system was not followed. Since the lessons focused on two types of contextual clues—idea clues and presentation clues—it meant that the items deleted, connectives or noun/verbs, had to reflect or represent the contextual
clues being taught. As these did not appear in any systematic fashion, an every nth word deletion system could not be adopted. An illustration of the deletion procedure used is as follows: ten connectives were located in a selected passage. For each of these connectives, it was determined which particular idea clue (comparison/contrast, cause/effect, etc.) was being presented or signalled. Then it was determined which noun or verb represented the idea clue that was present. It was these connectives and corresponding nouns/verbs that were then deleted for the cloze procedure lesson. The lessons were constructed so that in one case the passage had ten connectives deleted while in the second case the same passage had the ten corresponding nouns and/or verbs deleted.

The contextual clues were selected on the strength of the evidence obtained in the literature and also on the number of types of contextual clues and the frequency of their occurrence in the reader from which the passages were drawn. The literature spoke of differing contextual clues that were more common than others (Shaw, 1958; Robertson, 1968; Dulin, 1970). These contextual clues were used in the construction of cloze lessons. The idea type contextual clues and the presentation type contextual clues on which lessons focused are presented in Table 8.

The number of deletions per passage was set then for a number of reasons. First, it avoided the need for having passages which were too long and which, if used, could have required more than one class period to complete. Second, it also prevented a possible overload of contextual clues during any one particular lesson. Theory on effective teaching suggests that too many stimuli during any one lesson could produce a cognitive overload and result in confusion (Kasdon, 1971).
Table 8

Idea Clues and Corresponding Presentation Clues

<table>
<thead>
<tr>
<th>Idea Clues (Noun/Verb Deletions)</th>
<th>Presentation Clues (Connective Deletions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cause/Effect</td>
<td>as, but, for, since, so</td>
</tr>
<tr>
<td>Comparison/Contrast</td>
<td>as, but, then, or, so, which, however, besides</td>
</tr>
<tr>
<td>Description</td>
<td>for, then, that, which, who</td>
</tr>
<tr>
<td>Time Relationship</td>
<td>as, after, before, since, until, when, while, once, now, from</td>
</tr>
<tr>
<td>Place Relationship</td>
<td>where, there, here, near, from, under, far, above, beneath, below</td>
</tr>
<tr>
<td>Past Experience/Familiar Expression</td>
<td>Ideas and expressions that children have previously heard</td>
</tr>
</tbody>
</table>

Teachers’ Guides

Teachers who participated in Treatment Groups 1, 2, 3, and 4 were provided with a guide for each cloze procedure lesson. The guides contained the deleted words, the contextual clues involved, and an explanation or discussion of the contextual relationships that might help students develop an understanding of how to establish the deleted word or a suitable alternative. The following is an example of the content of a teacher’s guide along with the passage to which the guide is provided in Appendix B.

<table>
<thead>
<tr>
<th>Deleted Word*</th>
<th>Contextual Clue</th>
<th>Explanation</th>
<th>Alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>from place relationship</td>
<td>The author stated Fru Nilsson was hurrying and the kitchen is mentioned. The reader would establish that she is hurrying from, to, into, or in someplace. As everybody is ready to leave, and the fact the kitchen was mentioned, it could be concluded she was probably hurrying from the kitchen.</td>
<td>to, into, in</td>
<td></td>
</tr>
</tbody>
</table>
Contextual Aid Charts

Research on teaching and learning (Mouly, 1968) suggested that a combined oral and visual format in the presentation of the context clues be provided. Since two modalities, vision and hearing, could increase learning efficiency over a single modality (Smith, 1971) a vehicle for the presentation context clues was sought. Catterson (1959) provided the possible vehicle. She suggested that a visual aid along with teacher oral presentation could be provided. A printed Contextual Aid Chart (Appendix B) was, then, provided for each student. Besides the oral discussion that would occur, the Contextual Aid Chart would be available to the students during and after the completion of cloze passage exercises.

The Contextual Aid Chart contained a description of both types of contextual clues (idea and presentation clues), an explanation of the relationship between the two contextual clues, and an example of the particular clues in context. The use of the Contextual Aid Chart meant the students had all six of the context clues before them at all times. An example of the content of the Contextual Aid Chart is provided below.

<table>
<thead>
<tr>
<th>Idea Clue</th>
<th>Presentation Clue</th>
<th>Explanation</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cause/</td>
<td>as, because, for,</td>
<td>Cause/effect means something has happened because of something else. The</td>
<td>They did not go</td>
</tr>
<tr>
<td>Effect</td>
<td>since, so, but</td>
<td>presentation clues signal the cause/effect relationship.</td>
<td>outside because</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>it was too cold.</td>
</tr>
</tbody>
</table>
Teaching Support Materials

Besides materials that were involved directly with the teaching or delivery of lessons, the teachers were provided with written instructions to enable a more efficient, systematic, and controlled presentation of lessons.

Teachers' Instructions for Cloze Procedure Lessons

All teachers were provided with instructions and information in a consistent and systematic manner. To limit the possible variability in the presentation of lessons, the following practices were implemented:

1. All teachers received oral and written information about the purpose and use of the cloze procedure used in this study. Note Appendix B.

2. All teachers received oral and written instructions for the lessons that were pertinent to the particular treatment condition to which their class had been assigned. Note Appendix B.

3. All teachers received a standard statement for presentation to the students. Each of the teachers was instructed to read to the class what was to be done and how the students were to go about accomplishing the task. The statements issued to the teachers were differentiated to the treatment group the teachers were in. Note Appendix B.

4. Teachers were supplied with standard forms to record scores and to make the transfer of data easier for analysis. Note Appendix C.
Testing Instruments

The testing instruments used in the study included a pre- and post-treatment Canadian Test of Basic Skills, a pre-treatment Cloze Comprehension Test, a post-treatment Cloze Comprehension Test, and a post-treatment Robertson Written Connectives Test. Following is a description of each of these tests.

The Canadian Test of Basic Skills—Levels 10 and 11, Forms 3M and 4M

The selection of the Canadian Test of Basic Skills used to obtain pre- and post-comprehension scores, was based upon the following reasons:

1. Normative data existed for Canadian student populations;
2. Birch, reporting in the Ninth Mental Measurement Yearbook (1985), rated the test as a reliable and valid instrument for measuring literal, inferential and evaluative comprehension;
3. Sections of the Reading Comprehension Subtest appeared to measure skills similar to those that might be developed by completion of cloze passage exercises; and,
4. The test was used regularly by the Regina Board of Education and as the teachers had an average of 12 years teaching experience (ranging from three years to twenty-one years), the administration and scoring of the test was felt to be well within the capabilities of the teachers in the study.

Cloze Comprehension Tests

Pre- and post-treatment Cloze Comprehension Tests were used as further measures of reading comprehension. Since the treatment phase of the study required that students complete cloze passages, it was felt
that comprehension scores obtained from pre- and post-cloze tests would provide additional data descriptive of the effectiveness of the treatment conditions considered. Cloze tests, on the whole, have been recognized as reliable and valid tests of comprehension (Bormuth, 1969).

Both the pre-treatment Cloze Comprehension Test and the post-treatment Cloze Comprehension Test used an every fifth word deletion system. Much of the literature on the use of the cloze procedure as a teaching technique recommends a fifth word deletion system. Also, an exact replacement scoring system was used on both the pre- and post-cloze tests. While Jongsma (1980) suggested that accepting synonyms was probably useful when using cloze procedure lessons for instructional purposes, he did state that the research showed no significant differences in scores between exact replacement and synonym scoring. The exact replacement scoring procedure was selected for this study because the participating teachers scored the tests independently and an exact word replacement would avoid differences of opinion regarding what might have been an acceptable synonym. Keys with the exact deleted words were provided for each of the teachers.

The pre-treatment Cloze Comprehension Test was constructed by Dr. C. Pennock, Language Education Department, Faculty of Education, The University of British Columbia. The post-treatment Cloze Comprehension Test was developed by the researcher. The pre-treatment Cloze Comprehension Test was 224 words in length and contained 41 cloze items; the post-treatment Cloze Comprehension Test, 271 words in length, contained 50 cloze items. Both the pre- and post-cloze tests dealt with subject matter that was within the experiences of the children either through everyday events or through school-related activities. The pre-
test discussed diamonds—how they are cut, their color, their use. The post-test was on nickel—where it is found, how it is obtained and refined, and its uses.

The pre-treatment Cloze Comprehension Test was field-tested by Dr. Pennock and a graduate student using a sample of grade five students. They reported that the readability level was at grade five level as determined by the Dale-Chall Readability Formula. Data describing the reliability and validity of the test were not available.

The post-treatment Cloze Comprehension Test was constructed to be comparable to the pre-treatment Cloze Comprehension Test in terms of reading difficulty. Six raters, working independently and using the Dale-Chall Readability Formula, rated the readability from 4.9 to 7.0, with four of the raters establishing the test to be between the fifth and sixth grade reading level. The mean rating equalled 5.8.

A post-hoc examination of the test revealed that some of the words which appeared in the test, such as chunks, appearing three times, and nature, were not on the Dale-Chall list. These words were judged to be familiar to most of the grade five students in the sample, and thus, within their reading vocabulary. Had these words been counted, the reading level would probably have been somewhat closer to the reading level of the pre-treatment Cloze Comprehension Test. Copies of the pre- and post-treatment Cloze Comprehension Tests and instructions for the administration of the tests are included in Appendix A.

The Robertson Written Connectives Test (1968)

The Robertson Written Connectives Test was used as a post-treatment measure of the students' ability to use connectives in sentence completion exercises. The test consisted of 20 unrelated sentences
in which 14 sentences had one connective removed, five sentences had two connectives removed, and one sentence had three connectives removed. The total number of responses students would make was 27; thus the scores could range from zero to 27.

The internal consistency of the test was determined by the Kuder-Richardson formula for a sample of 199 test items which were administered to 112 children in grades four, five, and six. It was revealed that the items did have high intercorrelations with each other and that they were measures of the attribute being tested, the pupils' understanding of connectives in reading. The test items constructed were taken from basal readers that were used in the school districts in which Robertson conducted her study. A copy of the Robertson Written Connectives Test is provided in Appendix A.

Procedures

The discussion will include the field trial, the selection of classrooms, assignment of classrooms to treatment, duration of the study, administration of cloze procedure lessons, administration of tests, and the experimental control procedures.

Field Trial

A full-scale formal pilot study was not carried out. However, a sample of three lessons was given to each of two grade five teachers in Richmond, British Columbia school system. The two teachers administered the lessons to approximately fifty children and noted the students' responses. These teachers provided useful and supportive information on the method of presenting and teaching contextual aids when teaching cloze
lessons. The teachers' comments were useful in the preparation of, and refinements to the lessons and the teachers' guides for the actual study.

Selection of Classrooms

Teacher participation in the study was on a voluntary basis. A list of schools containing grade five classrooms was obtained from the superintendent of schools. From an original list of 30, schools were contacted and if the principal expressed interest in the study, a visit to the school was made. A discussion with the principal and grade five teachers followed and the final decision to participate was left to the teachers.

Twenty-six teachers expressed interest in the study and of these, twenty-four agreed to their school's participation. Since the final decision was left to the teachers, the principals arranged for meetings with the grade five teachers in their schools. During these meetings with the principal and teachers, the purposes and procedures of the study were carefully explained and the teachers were made aware that, if they participated, they would be randomly assigned to any one of the five treatment conditions. Twenty-two teachers, from nineteen schools, agreed to participate.

Assignment of Classrooms to Treatment

While students were not individually assigned to treatments, classrooms selected for the study were randomly assigned to the treatment conditions, using a table of random numbers (Glass and Stanley, 1970). The number of classes assigned to each treatment level is presented in Table 9.
Table 9

Treatment Groups, Treatment Conditions, and Classrooms for Treatment

<table>
<thead>
<tr>
<th>Treatment Group</th>
<th>Treatment Conditions</th>
<th>Number of Assigned Classrooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Students completed cloze procedure lessons with Noun/Verb deletions and received intensive teaching regarding use of contextual aids.</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>Students received cloze procedure lessons with connective deletions and received intensive teaching regarding use of contextual aids.</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Students received cloze procedure lessons with Noun/Verb deletions and did not receive intensive teaching regarding use of contextual aids.</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>Students received cloze procedure lessons with connective deletions and did not receive intensive teaching regarding use of contextual aids.</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Students did not receive cloze procedure lessons and continued with instruction as they would have normally (the control group).</td>
<td>4</td>
</tr>
</tbody>
</table>

Duration of the Study

The study was conducted for a period of eight weeks during which time a total of twenty-three cloze passages were administered. The post-tests were administered during the week following the completion of the lessons.
Administration of Cloze Procedure Lessons

Each teacher was provided with the twenty-three cloze procedure lessons along with a standard set of written instructions (Appendix B), and the teachers' guides which were part of each lesson.

Teachers were provided with instructions for the administration of the cloze procedure lessons. Teachers in Treatment Groups 3 and 4 (noun/verb and connective deletions with non-intensive teaching) were instructed to keep discussion to a minimum. All teachers in treatment conditions 1, 2, 3, and 4 were asked to encourage the students to try to respond to all the cloze blanks in the passage and to use the contextual aid chart as often as they felt necessary. For Treatment Groups 3 and 4, the objective was to determine if students could learn to use contextual clues with limited input from the teacher.

Teachers were also provided with instructions regarding the length of time intended for each lesson. Teachers agreed that each lesson would take up one class period, i.e. the length of the regular reading class. Students would be given approximately 25 minutes for the completion of the passage with the rest of the time devoted to either discussion and explanation or for merely marking the lessons. A total of approximately 40 to 50 minutes was spent on each lesson.

The cloze lessons were administered three times a week throughout the experimental period. Research design would have made it desirable to have all classes having these three sessions at a uniform time each week. Field conditions, however, made this impossible to observe as platooning of students put many classes in time conflict with one another and curriculum schedules could not be altered.
While not receiving instructions on teaching cloze lessons, the teachers in the control group were instructed to continue teaching reading lessons as they would normally have done. They were not provided with any materials or lessons during the duration of the study.

Administration of Tests

As discussed earlier, the Canadian Test of Basic Skills is administered regularly to all elementary school children within the Regina School District in May/June of each school term. Scores from Level 10, Form 3M of the Canadian Test of Basic Skills (administered in June) served as the pre-test comprehension scores. The pre-treatment Cloze Comprehension Test was administered in early October immediately prior to the introduction of the cloze lessons. Level 11, Form 4M of the Canadian Test of Basic Skills was then administered by the classroom teachers in January after completion of the treatment period. The post-treatment Cloze Comprehension Test and the Robertson Written Connectives Test were also administered in January.

Experimental Control Procedures

Monitors' Checklist

Four (4) monitors visited all classrooms in the treatment classes to observe teachers while they taught the cloze procedure lessons. Each of the monitors was provided with a Monitors' Checklist (Appendix C) on which they recorded their observations while in the classroom. The Monitors' Checklists were designed so that they were applicable to each of the treatment conditions. Visits were made to all classrooms during the course of the study.
The four monitors were each provided with information about the study and with instructions about collecting the information required. Two of the monitors were former teachers, while two were students completing their B.Ed. programs at the University of Regina.

The monitors visited the classrooms three times, with visits scheduled randomly. Following each visit, they turned in the Monitors' Checklist to the researcher at which time a conference was held with the monitor. If the monitor reported concerns that the teachers had had or problems that had been observed, the researcher visited the school and dealt with the concern or problem. Over the duration of the study the researcher made five visits to the schools to provide assistance to teachers who experienced some difficulty, as for example, in the interpretation of some explanation on the teachers' keys.

**Teachers' Comments**

The teachers of the study other than the control group teachers, were provided with a Teachers' Comment sheet (Appendix C). This was intended to provide an opportunity for teachers to make comments following the teaching of each lesson. The teachers could, on a lesson by lesson basis, record data that might be useful to the researcher.

**Teachers' Questionnaire**

Teachers were provided with a questionnaire at the end of the study. The purpose of the questionnaire was to provide an opportunity for teachers to record what they deemed pertinent and essential features of the study. Teachers' responses could also be useful for planning future studies. A copy of the questionnaire is included in Appendix C.
Experimental Design

The design of the study was a partial hierarchical design, with classes nested within treatment and both factors, treatment and ability, fully crossed with ability. This design is discussed in Kirk (1968) and Winer (1971).

Also, Campbell and Stanley (1963) describe this particular design as quasi-experimental. Both experimental and control groups were 'naturally assembled' collectives (classrooms) which in turn were randomly assigned to treatment. To account for prior differences among the classes due to the lack of random assignment of students to class, pre-test scores, which were collected before treatment commenced, were used as a co-variate in subsequent data analysis.

High, Middle, and Low reading comprehension groups were formed on the basis of scores achieved on the Reading subtest of the pre-treatment Canadian Test of Basic Skills (Level 10, Form 3M). These categories were defined on the basis of percentile levels, with the 33rd and 67th percentiles selected as division points. This meant that students with grade equivalent scores of 4.4 and lower were classified as Low Comprehenders, students with grade equivalent scores between 4.5 and 5.4 were classified as Middle Comprehenders, and students with grade equivalent scores of 5.5 and higher were classified as High Comprehenders.

Table 10 shows a distribution of the sample according to ability levels within the classrooms and assigned to the five treatment conditions. As shown, data from 20 classrooms involving 434 students were returned.
Table 10
Distribution of Classes and Students in the Five Treatment Conditions and Ability Levels

<table>
<thead>
<tr>
<th>Treatment Group</th>
<th>Class</th>
<th>Ability Levels</th>
<th>No. of Classrooms</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>H</td>
<td>M</td>
<td>L</td>
</tr>
<tr>
<td>1</td>
<td>C₁</td>
<td>5</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>C₂</td>
<td>6</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>C₃</td>
<td>5</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>C₄</td>
<td>13</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>C₅</td>
<td>15</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>44</td>
<td>43</td>
<td>23</td>
</tr>
<tr>
<td>2</td>
<td>C₁</td>
<td>9</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>C₂</td>
<td>10</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>C₃</td>
<td>7</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>C₄</td>
<td>15</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>C₅</td>
<td>15</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>56</td>
<td>44</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>C₁</td>
<td>7</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>C₂</td>
<td>14</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>C₃</td>
<td>11</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>32</td>
<td>28</td>
<td>7</td>
</tr>
<tr>
<td>4</td>
<td>C₁</td>
<td>7</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>C₂</td>
<td>8</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>C₃</td>
<td>8</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>23</td>
<td>31</td>
<td>13</td>
</tr>
<tr>
<td>5</td>
<td>C₁</td>
<td>1</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>C₂</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>C₃</td>
<td>6</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>C₄</td>
<td>7</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>19</td>
<td>32</td>
<td>24</td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td>174</td>
<td>178</td>
<td>82</td>
</tr>
</tbody>
</table>

434
Statistical Analysis

The data collection and treatment procedures were conducted in school settings where intact classrooms were randomly assigned to the experimental and the control conditions. Intact classes were used because teacher and administrative concerns made it impractical to rearrange classes within the school or to rearrange subjects within classrooms. Since research design requires that groups should be comparable or matched with respect to any relevant variables which might confound the variables under investigation, it was necessary to match or equate groups by a statistical procedure. The statistical procedure chosen for the study was the analysis of covariance (ANCOVA).

The use of this statistical procedure (ANCOVA) allows the researcher to test the significance of differences in scores between two or more groups after initial differences in pre-treatment scores have been statistically eliminated (Cochrane, 1957; Elashoff, 1969; Winer, 1971; Campbell and Stanley, 1983). This removal of initial differences allows the use of intact classrooms for the purpose of conducting research in classrooms that are not changed in any way.

The assumption could be made that the five treatment groups might differ in statistical significance on their reading comprehension scores on the pre-treatment cloze test (Cloze 1) and on the reading comprehension and vocabulary sub-test of the pre-treatment scores on the Canadian Test of Basic Skills (CTBS). On the strength of this assumption it was decided to analyze statistically the pre-test scores obtained by the five treatment groups. Analysis of variance was used with the alpha level set at .05. Results of the analysis of variance showed that there
were significant differences in scores among the treatment groups on the comprehension and vocabulary subtests of the Canadian Test of Basic Skills (CTBS). There were no significant differences in scores among treatment groups on the pre-treatment cloze comprehension test (see Table 11).

Table 11

Summary of Analysis of Variance Results on Pre-Treatment Scores on Vocabulary and Comprehension Scores on the CTBS and on the Pre-Treatment Cloze Test

<table>
<thead>
<tr>
<th>Measure</th>
<th>df</th>
<th>ms</th>
<th>F</th>
<th>Significance of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocabulary</td>
<td>4</td>
<td>390.98</td>
<td>4.102</td>
<td>0.003*</td>
</tr>
<tr>
<td>Comprehension</td>
<td>4</td>
<td>422.55</td>
<td>4.72</td>
<td>0.001*</td>
</tr>
<tr>
<td>Comprehension</td>
<td>4</td>
<td>12.72</td>
<td>0.45</td>
<td>0.769</td>
</tr>
</tbody>
</table>

*p .05

The scores on pre-treatment cloze test showed that the five treatment groups were not statistically different. This was probably attributable to the fact that none of the students had had prior experience with the cloze procedure. The fact that statistically significant differences in mean scores were present on the vocabulary and comprehension subtest of the Canadian Test of Basic Skills was sufficient to show that there was justification for the use of the analysis of covariance for the analysis of the data.

To meet the assumptions underlying the use of the analysis of covariance at least two conditions are required (Sax, 1968). The first
is that subjects be randomly assigned to experimental and control groups. The present study met this requirement. While the individual members of each classroom were not randomly assigned to each of the treatment conditions, the classrooms as a whole were randomly assigned to the treatment conditions. This random assignment of classrooms to treatment conditions fulfills the randomization requirement of ANCOVA.

A second condition necessary to meet the assumption underlying the use of the analysis of covariance was that test measures for each of the subjects should be obtained under like or uniform conditions and that these measures correspond with the dependent variables (the effect on comprehension as a result of the treatment). This second condition was met in that the test measures for each of the subjects were obtained in the normal, familiar classroom setting with the regular classroom teacher administering the tests. These conditions were uniform and consistent during both the pre- and the post-testing sessions. Also, the pre- and post-measures did correspond with the dependent variable. The pre- and post-tests are indicators of students' abilities in comprehension. These tests of comprehension are measures of the dependent variable (comprehension) which was the skill being developed over the duration of the treatment period.

Further, if ANCOVA is to be used the assumption must be made that the covariate scores in this case pre-test comprehension scores were indices of pre-experimental differences between the groups. Table 12 shows the pre-treatment means, and the unadjusted and the adjusted means obtained on the Canadian Test of Basic Skills and on the Cloze Comprehension Test for the five treatment groups. These figures show
that the covariate scores are indices of the pre-experimental differences between the groups. The figures on this table provide the reader with information that assists in the interpretation of the analyzed data.

Table 12
Pre-Treatment Means, Unadjusted Means, and Adjusted Means on the Canadian Test of Basic Skills and Cloze Comprehension Test for the Five Treatment Groups

<table>
<thead>
<tr>
<th>Criterion Measure</th>
<th>Control Variable Pre-Test Achievement Means</th>
<th>Control Variable Post-Test Achievement Means</th>
<th>Unadjusted</th>
<th>Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Canadian Test of Basic Skills</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment Group:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>52.35</td>
<td>57.95</td>
<td>57.86</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>53.66</td>
<td>58.87</td>
<td>59.69</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>53.40</td>
<td>58.93</td>
<td>60.40</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>51.18</td>
<td>59.02</td>
<td>58.78</td>
<td></td>
</tr>
<tr>
<td>(Control) 5</td>
<td>48.03</td>
<td>55.08</td>
<td>52.85</td>
<td></td>
</tr>
<tr>
<td><strong>Cloze Comprehension Test</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment Group:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>20.59</td>
<td>19.62</td>
<td>19.67</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>20.23</td>
<td>19.87</td>
<td>20.04</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>20.87</td>
<td>18.48</td>
<td>19.00</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>20.51</td>
<td>19.95</td>
<td>19.87</td>
<td></td>
</tr>
<tr>
<td>(Control) 5</td>
<td>19.79</td>
<td>18.88</td>
<td>18.15</td>
<td></td>
</tr>
</tbody>
</table>
Data Preparation

Teachers recorded students' comprehension scores obtained on the **Canadian Test of Basic Skills** (pre- and post-) and on the pre- and post-cloze tests. The raw scores obtained on the **Canadian Test of Basic Skills** tests were converted into grade equivalent scores in accordance with the tables provided by the test publishers. These were submitted to the researcher by each of the participating teachers.

Verification of Scores

Scores were verified to establish the accuracy with which scores were entered. The verification procedure, conducted before the scores were submitted for statistical analysis, was carried out by an independent examiner, a graduate student in the Language Education Department of the Faculty of Education at The University of British Columbia. The results of the verification revealed that the error rate was less than one percent. The coded data were then keypunched with 100% verification by personnel at the Data Processing Centre at The University of British Columbia.

Preliminary Analyses

Preliminary analyses were conducted to explore the feasibility of pooling classrooms. Results of this analysis revealed that although the probability of a Type I error was greater than .05 for class within treatment (CL x TR), it was less than .20, the minimum recommended level to be exceeded for pooling (Winer, 1971). As a result, subsequent analyses were completed according to the partially nested analysis of covariance model (Kirk, 1968; Winer, 1971).
Final Analyses

Each of the dependent variables—comprehension as measured by the post-treatment Canadian Test of Basic Skills and by the post-treatment Cloze Comprehension Test, and knowledge of use of connectives as measured by the Robertson Written Connectives Test—was analyzed separately with the pre-treatment Cloze Comprehension Test used as the covariate measure. Classes were treated as a random factor; thus the main analysis was a partially nested, mixed analysis of covariance.
CHAPTER IV

RESULTS AND DISCUSSION

The present chapter describes the statistical analyses of the data collected to test the null hypothesis originally presented in Chapter I. Hypothesis I focused on the reading comprehension achievement of three ability groups (AB), five treatment groups (TR), and an interaction of ability and treatment (AB x TR) as measured by the post-treatment Canadian Test of Basic Skills and the post-treatment Cloze Comprehension Test following an experimental treatment program that used cloze exercises presented in different forms of deletion systems and different degrees of teaching intensity. Hypothesis II focused on a competency in the use of connectives by the groups under the same treatment conditions. The knowledge of connectives was measured by the Robertson Written Connectives Test. In both Hypothesis I and II, the ability groups were categorized as High, Middle, and Low achievers in reading comprehension. Hypothesis III investigated interaction effects of the treatments and the ability groups and also the classrooms.

The study involved 434 students located in 20 intact classrooms. The classrooms were randomly assigned to one of two treatment conditions or a control group. The experimental groups were required to complete regularly, over a period of eight weeks, cloze passages where either noun/verb deletions ("idea clues") or connective deletions ("presentation
clues") were deleted. The experimental groups were also subjected to
different intensities of instruction. Data were obtained through pre-
test and post-test procedures using a quasi-experimental design.

**Test of Hypothesis I**

Hypothesis I stated that there would be no significant differences
in the mean levels of reading comprehension obtained by the students on
the (1) *Canadian Test of Basic Skills*, and (2) post-treatment *Cloze*
Comprehension Test among:

a) the five treatment groups;

b) the three ability groups; and

c) the groups formed by the crossing of the ability of
the students and the treatment factors, (AB x TR), and
the crossing of class within treatments (CL w TR).

**Scores Obtained on the Canadian Test of Basic Skills (CTBS)**

Table 13 shows that no significant differences between the groups
were obtained for treatment (TR). The three ability groups did obtain
scores that were significantly different at the .01 level. Further anal-
ysis, using Scheffe's multiple means test applied at the .05 level of
significance revealed that the means of the three ability groups were
significantly different from each other with low ability groups scoring
lowest and high ability groups scoring highest. Table 13 showed that the
groups formed by the interaction of the ability levels and the treatment
conditions (AB x TR) did not obtain significant differential results.
Table 14 shows the adjusted means and standard deviations obtained by
each of the ability groups. Tables of means and standard deviations for
the five treatment groups and interaction of ability by treatment (AB x TR)
can be found in Appendix D.

Table 13

ANCOVA Reading Comprehension Mean Scores with the Canadian Test of Basic Skills as the Criterion Variable and the Pre-Cloze Comprehension Test Scores as the Covariate

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>TR--Treatment</td>
<td>4</td>
<td>203.15</td>
<td>2.62</td>
<td>0.07678</td>
</tr>
<tr>
<td>CLwTR--Class within Treatment</td>
<td>15</td>
<td>77.53</td>
<td>1.37</td>
<td>0.16051</td>
</tr>
<tr>
<td>AB--Ability</td>
<td>2</td>
<td>2496.2</td>
<td>31.66</td>
<td>0.00000**</td>
</tr>
<tr>
<td>AB x TR</td>
<td>8</td>
<td>101.43</td>
<td>1.29</td>
<td>0.28879</td>
</tr>
<tr>
<td>CLwTR x AB</td>
<td>29</td>
<td>78.84</td>
<td>1.39</td>
<td>0.09068</td>
</tr>
<tr>
<td>Residual</td>
<td>319</td>
<td>56.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>433</td>
<td></td>
<td></td>
<td>**p&lt;0.01</td>
</tr>
</tbody>
</table>

Table 14

Adjusted Means and Standard Deviations of the Three Ability Groups as Measured by the Canadian Test of Basic Skills, Reading Comprehension Subtest

<table>
<thead>
<tr>
<th>Ability Levels</th>
<th>High n=173</th>
<th>Medium n=178</th>
<th>Low n=83</th>
</tr>
</thead>
<tbody>
<tr>
<td>Means</td>
<td>64.97</td>
<td>56.45</td>
<td>46.87</td>
</tr>
<tr>
<td>Standard Deviations</td>
<td>8.53</td>
<td>7.61</td>
<td>10.12</td>
</tr>
</tbody>
</table>
Scores Obtained on the Post-Treatment Cloze Comprehension Test (CCT)

Table 15 shows that significant differences were not obtained for treatment (TR) nor for the interaction of ability by treatment (AB x TR). The three ability groups, however, did obtain scores that were significantly different at the .01 level.

Table 15

ANCOVA Reading Comprehension Mean Scores with the Post-Cloze Comprehension Test as the Criterion Variable and the Pre-Cloze Comprehension Test as the Covariate

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>TR—Treatment</td>
<td>4</td>
<td>31.76</td>
<td>2.18</td>
<td>0.12110</td>
</tr>
<tr>
<td>CLwTR—Class within Treatment</td>
<td>15</td>
<td>14.58</td>
<td>0.81</td>
<td>0.67010</td>
</tr>
<tr>
<td>AB—Ability</td>
<td>2</td>
<td>270.71</td>
<td>16.12</td>
<td>0.00002**</td>
</tr>
<tr>
<td>AB x TR</td>
<td>8</td>
<td>14.76</td>
<td>0.88</td>
<td>0.54558</td>
</tr>
<tr>
<td>CLwTR x AB</td>
<td>29</td>
<td>16.79</td>
<td>0.93</td>
<td>0.57507</td>
</tr>
<tr>
<td>Residual</td>
<td>319</td>
<td>18.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>433</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p<0.01

Scheffe's multiple means test applied at the .05 level of significance showed that, as was the case in the CTBS scores, the High ability group scored significantly different from the Middle and Low ability groups. The differential in scores between the Middle and Low ability groups, however, was not significantly different. The adjusted means and standard deviations obtained by each of the three ability groups on the
post-treatment _Cloze Comprehension Test_ are shown in Table 16. Tables of adjusted means and standard deviations for the five treatment groups and the interaction of Ability by Treatment (AB x TR) can be found in Appendix D.

**Table 16**

*Adjusted Means and Standard Deviations of the Three Ability Groups as Measured by the Post-Treatment Cloze Comprehension Test*

<table>
<thead>
<tr>
<th>Ability Levels</th>
<th>High (n=173)</th>
<th>Medium (n=178)</th>
<th>Low (n=83)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Means</td>
<td>22.44</td>
<td>18.44</td>
<td>15.29</td>
</tr>
<tr>
<td>Standard Deviations</td>
<td>5.15</td>
<td>4.42</td>
<td>4.44</td>
</tr>
</tbody>
</table>

In summary, then, the analyses of the data provided information that led to the following conclusions regarding Hypothesis I.

1. The first part of Hypothesis I which stated that there would be no significant differences in the mean level of reading comprehension among the five treatment groups as measured by the post-treatment _Canadian Test of Basic Skills_ and the post-treatment _Cloze Comprehension Test_ could not be rejected. The analyzed data indicated that neither the types of deletions systems nor the level of intensity of teaching produced differential effects on the scores obtained by the five treatment groups.
2. The second part of Hypothesis I stated that there would be no significant differences in the mean level of reading comprehension as measured by the post-treatment Canadian Test of Basic Skills and the post-treatment Cloze Comprehension Test among the three ability groups. The three ability groups did obtain significantly different comprehension scores; thus, part two of Hypothesis I was rejected. Each of the three ability groups obtained mean scores on the post-treatment Canadian Test of Basic Skills that were significantly different from each other. However, scores obtained on the post-treatment Cloze Comprehension Test showed that while the High ability group obtained scores significantly different from the Middle and Low ability groups, there were no significant differences between the Middle and Low comprehension groups. The scores on the Canadian Test of Basic Skills provided information that the High, Middle, and Low ability groups remained as they were before the instructional program. They did not shift in any direction that would indicate that the treatment had a major effect on any of the groups. However, the students' scores on the post-treatment Cloze Comprehension Test did indicate a shift in comprehension ability. This was demonstrated by the fact that the test scores did not show a significant difference between Middle and Low ability comprehension. It might be speculated that the Low ability comprehension could have achieved a sufficient increase in comprehension ability which brought them closer to the Middle ability group.

3. The third part of Hypothesis I stated there would be no significant differences in the mean levels of comprehension, as measured by the post-treatment Canadian Test of Basic Skills and the post-
treatment **Cloze Comprehension Test**, among the groups formed by the crossing of ability by treatment (AB x TR). The data indicated that this part of the hypothesis could not be rejected. As shown in Tables 13 and 15, the differences in mean scores as a result of the interaction of ability by treatment (AB x TR) were insufficient to reach statistical significance. The types of deletion systems and the levels of intensity of teaching did not have differential effects on the scores obtained when ability groups within treatments were examined.

**Discussion of the Results Relating to Hypothesis I**

Evidently the treatment provided for the four experimental groups, i.e. receiving different deletion systems and differing intensities of teaching was not any more effective in developing reading comprehension as measured by the post-treatment **Canadian Test of Basic Skills** and the post-treatment **Cloze Comprehension Test**, than the treatment provided for the control group receiving the regular developmental reading program. The results suggest discussion around issues such as the duration of the study, the rate and density of the presentation of the cloze lessons and of the context clues, the characteristic nature of the cloze exercises, and perhaps even experimental variables in the form of design factors and statistical treatment. A summary of the findings of Hypothesis I follows this discussion.

**Duration of the study.** Field constraints limited the duration of the study to eight weeks. Jongsma (1971) and other researchers such as Rhodes (1972), had suggested that studies of six weeks or eight weeks were probably too short in duration to bring about statistically significant changes or growth of reading comprehension in students through
cloze exercises. While this suggestion has an obvious appeal as far as design is concerned, other studies (Guscott, 1971; Martinez, 1978) demonstrated significant gains with much shorter experimental periods. The current study did, over its eight week duration, vary the intensities with which teaching was involved. Lengthening a program might well be desirable experimentally, but it might also produce negative compounding effects. For example, the students might not provide the reading intensity necessary for establishing the correct response. This would be especially true if the lessons were provided too frequently. Gain in the control groups against that of the experimental groups could also be an artifact of novelty in taking cloze tests, in that the experimental groups might have viewed the cloze tests as "just another lesson" while the control group might have responded to the test with a more serious approach.

Rate and density of presentation of cloze lessons and context clues. The study aimed at a concentration of instruction and application of the cloze procedure. This means that the students received three cloze exercises per week. Teachers responding to the Teachers' Questionnaire reported that some students became somewhat tired of frequent cloze lessons and that their motivation for the task seemed to diminish over time. It was also necessary to present the contextual aids in a concentrated manner. Charts that illustrated the "idea" clues and the corresponding "presentation" clues and their uses were then presented in toto at the beginning of the experiment rather than in a spaced sequential manner. The teachers of the experimental group mentioned that contextual clues might well have been placed more gradually
or in different ways. Could it be that efficient use of cloze procedure might parallel that of the precis writing of yesteryear? The thought of three sessions of precis writing per week would seem less than attractive, yet one can find many who would argue that regular weekly exposures of precis writing is not only educationally defensible, but even laudatory. In this case occasional exposure over an extended time appears, historically, to be seen as more beneficial than multiple exposures over a concentrated time. This subject will be returned to in Chapter V (Recommendations for Further Research).

The characteristic nature of cloze exercises. When one looks at the characteristic nature of cloze exercises as developed for this study, it is not hard to appreciate further comments on the Teachers' Questionnaire which said that the use of truncated stories caused the students concern. The cloze passages were typically about 250 words in length. The result of this restriction was that students did not have the opportunity to read any stories to any form of completion. This experience of not knowing "what happened" may well have caused some students to be negatively affected in their desire to read the passages as carefully as was necessary to effectively complete cloze exercises, and particularly the post-treatment Cloze Comprehension Test. This, coupled with the concentration within the treatment condition of doing three sessions a week, possibly added to the students' concern. The control groups had but two exposures to cloze passages, so it is theoretically possible that a novelty effect heightened their performance to the same degree that the saturation effect diminished the performance of the experimental groups. This may explain why the experimental groups did not
achieve significantly greater scores on the post-treatment **Cloze Comprehension Test** than did the control groups. It could reasonably be argued that reading comprehension as measured by the post-treatment **Canadian Test of Basic Skills** could be developed as well by the control groups as the experimental groups. The equal facility of the control groups to the experimental groups, who practiced the very behavior measured by the post-treatment **Cloze Comprehension Test**, is, however, a most difficult outcome to explain. It would almost seem that the 8 weeks of cloze lessons had virtually no effect on the students' performance. This is highly unlikely. Again it can, perhaps, be explained from the standpoint of an event occurring because of the variable of novelty. The control groups may have responded in a manner that was more enthusiastic than the experimental groups and thus achieved statistically equal results.

Experimentally it was necessary to give a common post-treatment measure, in this case, the post-treatment **Cloze Comprehension Test**. This test had every fifth word deleted. However, the two groups had different deletion patterns in their respective treatments to match the closest noun/verb or connective in the passage. Now, in the post-
treatment Cloze Comprehension Test, they had to accommodate a consistent deletion regardless of whether it was a noun-verb or a connective. This may well have washed out differences in treatment effects.

The problems of word class deletions in cloze exercises have been examined over time. Jongsma in his first review (1971) suggested the noun/verb-connective dichotomy be examined further. Clearly he had picked up on Rankin's suggestion (1959) that cloze passages might be constructed using either lexical or structural items for deletions, and also on Louthan's suggestion (1965) that deletions of structure words (connectives) might be more beneficial for improved reading comprehension. In 1972 Culhane followed that line of reasoning and suggested that noun/verb deletions should be more useful than structure words in developing reading comprehension abilities because he felt that if students were able to replace the "meaning" carrier words it would have indicated a complete understanding of the passage. His research, however, did not bear this out. This present study found similar results and students' gains in reading comprehension scores did not differ from one deletion system to the other. These two systems from the present data were equally effective.

A disturbing, even vexing, problem to a discussion of the study is the question of teacher input. It might have been expected that students who had intensive teaching and extensive discussion of context clues surrounding the deleted words would have gained over other students who did not have these experiences. This was not the case. Neither word class deletions nor the intensity of teaching was a differential factor when measured against controls. One could conjecture that
student/teacher interaction in the form of discussion about the efficacy of cloze responses and how to use the context for assistance in the selection of a deleted word would be a motivational factor for both students and teachers. However, the students' scores did not support this idea. It is possible that the Contextual Aid Chart might have served as an equalizing effect for the non-intensive teaching groups, and produced conditions that washed out any differences that might have accrued from intensive teaching.

The three ability groups' achievement were quite different on the post-treatment **Canadian Test of Basic Skills** but not on the post-treatment **Cloze Comprehension Test**. Here Middle and Low groups were undifferentiated in the experimental groups. It should be remembered that the experimental groups had the Contextual Aid Chart visible throughout the experimental period but not during the administration of the post-treatment **Cloze Comprehension Test**. It may have been that the Contextual Aid Chart had the effect of encouraging a dependency in the Middle and Lower groups and only the High ability students had the competence to act independently when it was time to perform on the post-experimental measure. On the other hand it could be argued that teaching and instructional aids did have a positive effect upon increasing the Low ability group to a point where they achieved to a level comparable to the Middle group. By definition the groups were different on the pre-treatment **Canadian Test of Basic Skills** and there is a high correlation between performance on reading comprehension achievement tests and performance on cloze comprehension tests (Bormuth, 1967). In the post-treatment **Cloze Comprehension Test** the differentiation was not
now apparent. Again, the variable that might have contributed to this is the Contextual Aid Chart. It might have been of particular value to the Low groups within the experimental cells but still not producing significantly different results between experimental and control groups for reasons discussed above.

**Experimental variables—design factors and statistical treatment.**

As with any study that through field conditions is forced to a quasi-experimental design (lacking full randomization) the question of a lack of statistical power might be one possible explanation in non-significance in the F-ratio. It would have been attractive to have randomly assigned individual students to treatment and control groups and enjoyed the increased degrees of freedom rather than the restricted degrees of freedom from using the intact groups. This was not possible in this instance. What was, was.

**Summary of the Results Pertaining to Hypothesis I.** As far as Hypothesis I was concerned, then, the results of the analyses of the data provided evidence that:

1. the first part of the hypothesis, which stated that there would be no significant differences among the five treatment groups, could not be rejected. There were no significant differences in mean levels of comprehension among the five treatment groups either on the post-treatment **Canadian Test of Basic Skills** or the post-treatment **Cloze Comprehension Test**.

2. the second part of the hypothesis, which stated that there would be no significant differences in mean levels of comprehension
among the three ability groups (High, Middle, and Low) could be rejected. Significant differences among the three ability groups were obtained.

3. the third part of the hypothesis, which stated that there would be no significant differences among the groups formed by the crossing of the ability groups (AB) and of the treatment conditions (TR), could not be rejected. These groups did not achieve significant differences in mean levels of comprehension.

**Test of Hypothesis II**

Hypothesis II stated there would be no significant differences in the mean scores in students' competencies in the use of connectives as measured by the *Robertson Written Connectives Test* among:

a) the five treatment groups;
b) the three ability groups; and
c) the groups formed by the crossing of the ability of the students and the treatment factors (AB x TR).

**Treatment Groups and Ability Groups and Knowledge of Connectives as Measured by the Robertson Written Connectives Test**

Table 17 reveals that the treatment (TR), ability (AB), were statistically significant sources of variation. Additionally, there was a significant class within treatment (CL w TR) effect.
Table 17

ANCOVA—Connectives Mean Scores with the Robertson Written Connectives Test as the Criterion Variable and the pre-treatment Cloze Comprehension Test as the Covariate

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>TR—Treatment</td>
<td>4</td>
<td>342.38</td>
<td>12.11</td>
<td>0.00014**</td>
</tr>
<tr>
<td>CLwTR—Class within Treatment</td>
<td>15</td>
<td>28.28</td>
<td>3.39</td>
<td>0.00002**</td>
</tr>
<tr>
<td>AB—Ability</td>
<td>2</td>
<td>84.14</td>
<td>11.10</td>
<td>0.00026**</td>
</tr>
<tr>
<td>AB x TR</td>
<td>8</td>
<td>8.92</td>
<td>1.18</td>
<td>0.34601</td>
</tr>
<tr>
<td>CL x TR x AB</td>
<td>29</td>
<td>7.58</td>
<td>0.91</td>
<td>0.60758</td>
</tr>
<tr>
<td>Residual</td>
<td>319</td>
<td>8.35</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total 433                      **p < .01

The results of Scheffe's test for multiple comparisons at the .05 level of significance revealed that the means of the various treatment groups were significantly different in the following ways:

1. Mean scores on the Robertson Written Connectives Test obtained by Treatment Group 1 (Noun/Verb deletions with Intensive Teaching) were significantly greater than those scores obtained by Treatment Group 5 (Control).

2. Treatment Group 2 (Connective Deletions with Intensive Teaching) were significantly greater than those of Treatment Group 3 (Noun/Verb Deletions with Non-Intensive Teaching) and Treatment Group 5 (Control).
3. Mean Scores on the Robertson Written Connectives Test obtained by Treatment Group 4 (Connectives Deletions with Non-Intensive Teaching) were significantly greater than those of Treatment Group 5 (Control).

These results are graphically depicted in Figure 1 (p. 91).

To analyze the effectiveness of the treatment procedures in the three ability groups (High, Middle, Low), Scheffe's test of multiple comparisons was again used. The test showed that the High ability group obtained significantly higher scores than the Middle and Low ability groups (p .05). There were no significant differences, however, in mean scores by the Middle and Low ability groups.
<table>
<thead>
<tr>
<th>Treatment Group Number</th>
<th>Treatment Group Number</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group No. 1</td>
<td>Group No. 5</td>
<td>Students in Treatment Group 1 achieved significantly superior scores than those students in Treatment Group 5</td>
</tr>
<tr>
<td>Noun/Verb Deletions</td>
<td>Control-Instruction</td>
<td></td>
</tr>
<tr>
<td>Intensive Teaching</td>
<td>using existing basal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>developmental reading program</td>
<td></td>
</tr>
<tr>
<td>Group No. 2</td>
<td>Group No. 3</td>
<td>Students in Treatment Group 2 achieved significantly superior scores than those students in Treatment Group 3</td>
</tr>
<tr>
<td>Connective Deletions</td>
<td>Noun/Verb Deletions</td>
<td></td>
</tr>
<tr>
<td>Intensive Teaching</td>
<td>with non-intensive</td>
<td></td>
</tr>
<tr>
<td></td>
<td>teaching</td>
<td></td>
</tr>
<tr>
<td>Group No. 2</td>
<td>Group No. 5</td>
<td>Students in Treatment Group 2 achieved significantly superior scores than those students in Treatment Group 5</td>
</tr>
<tr>
<td>Connective Deletions</td>
<td>Control-Instruction</td>
<td></td>
</tr>
<tr>
<td>Intensive Teaching</td>
<td>using existing basal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>developmental reading program</td>
<td></td>
</tr>
<tr>
<td>Group No. 4</td>
<td>Group No. 5</td>
<td>Students in Treatment Group 4 achieved significantly superior scores than those students in Treatment Group 5</td>
</tr>
<tr>
<td>Connectives Deletions</td>
<td>Control-Instruction</td>
<td></td>
</tr>
<tr>
<td>Intensive Teaching</td>
<td>using existing basal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>developmental reading program</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1. Diagram Illustrating the Areas of Significance Among the Treatment Groups and the Robertson Written Connectives Test
Tables 18 and 19 show the numbers of students, the mean scores and the standard deviations for the main effects of treatment (TR) and ability (AB). The scores obtained by the interaction of ability by treatment (AB x TR) were not significant. The table of means and standard deviations for AB x TR can be found in Appendix D. Class within treatment (CL x TR) was considered a "nuisance" factor and was not analyzed further.

Table 18

Adjusted Means and Standard Deviations for Treatment (TR) and the Robertson Written Connectives Test

<table>
<thead>
<tr>
<th>Treatment Groups</th>
<th>1 Noun/Verb Connectives</th>
<th>2 Int. Tchng.</th>
<th>3 Noun/Verb Connectives</th>
<th>4 Non-Int. Tchng.</th>
<th>5 Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noun/Verb</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connectives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Int. Tchng.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n=100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>14.90</td>
<td>16.85</td>
<td>13.36</td>
<td>16.69</td>
<td>11.39</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>3.55</td>
<td>3.66</td>
<td>4.00</td>
<td>3.48</td>
<td>3.89</td>
</tr>
<tr>
<td></td>
<td>n=115</td>
<td>n=67</td>
<td>n=67</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n=75</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 19

Adjusted Means and Standard Deviations for Ability (AB) and the Robertson Written Connectives Test

<table>
<thead>
<tr>
<th>Ability Groups</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>High n=173</td>
<td>16.77</td>
<td>3.35</td>
</tr>
<tr>
<td>Middle n=178</td>
<td>14.21</td>
<td>3.92</td>
</tr>
<tr>
<td>Low n=83</td>
<td>11.81</td>
<td>4.09</td>
</tr>
</tbody>
</table>

Discussion of the Results Relating to Hypothesis II

The hypothesis stated that there would be no significant differences on students' performances on the Robertson Written Connectives Test among the treatment groups and the ability groups.

The following discussion will focus on the treatment groups first and then the ability groups. For the reader's ease in following the discussion, a matrix of conditions and variables has been included (Figure 2).

Treatment Groups. Figure 1 illustrates the treatment groups that obtained mean scores on the Robertson Written Connectives Test that were significantly different from other groups. Students who completed cloze exercises with connectives deleted and who were exposed to either one of two intensities of teaching (Treatment Groups 2 and 4) did acquire a knowledge of connectives that was superior to those students in the control groups who did not experience the cloze passages nor to the spe-
<table>
<thead>
<tr>
<th>Treatment Group 1</th>
<th>Treatment Group 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>noun/verb deletions</td>
<td>noun/verb deletions</td>
</tr>
<tr>
<td>intensive teaching</td>
<td>non-intensive teaching</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Treatment Group 2</th>
<th>Treatment Group 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>connectives deletions</td>
<td>connectives deletions</td>
</tr>
<tr>
<td>intensive teaching</td>
<td>non-intensive teaching</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Treatment Group 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>control group receiving existing</td>
</tr>
<tr>
<td>basal developmental reading program</td>
</tr>
</tbody>
</table>

Figure 2. Matrix of Conditions and Variables for Five Treatment Groups
pecific instruction that centered around use of context clues for the comple-
tion of cloze passages. For purposes of discussion of the findings
the substantive information shown in Figure 1 is presented using the
treatment conditions as topic headings.

**Connective Deletions With Intensive Teaching.** Students complet-
ing cloze passages with connectives deleted without intensive teaching
obtained scores that were significantly different from the scores ob-
tained by the control group which received the existing developmental
reading program.

The superiority of scores on the *Robertson Written Connectives Test* obtained by students responding to cloze passages with connectives deleted and receiving intensive teaching (Treatment Group 2) over students in the control group (Treatment Group 5) indicates that the treatment was effective in developing an understanding of use of connectives. This group, however, did not achieve statistically superior scores on the *Robertson Written Connectives Test* from the other treatment group that also responded to cloze passages with connectives deleted but who did not receive intensive instruction. The question of instruction during the treatment sessions deserves focus. Was it that the instruction received by the classes in Treatment Group 2 (Connectives Deletions with Intensive Teaching) was not sufficient to raise students' understanding of connectives to a point where they could obtain scores significantly different than the classes without instruction? Could it be that the nature of the task, i.e., using the content of the passage and the assistance of the Contextual Aid Chart, was sufficient to raise knowledge of connectives levels to equal that of the students receiving intensive instruction?
The scores obtained on the **Robertson Written Connectives Test** demonstrated that the treatment materials were effective in helping students develop an understanding of the use of connectives.

Students in Treatment Group 1 (responding to lessons with nouns and verbs deleted) had to rely on remaining content which included the corresponding or related connectives. The intensive teaching and the active participation of the students could have given them an opportunity to learn how to use connectives and other contextual information to supply the missing nouns and verbs. The possibility that these students could learn connectives as well as the students in Treatment Group 2 (completing cloze lessons with connectives deleted) is very real. It might even be argued that students completing passages with nouns and verbs deleted and connectives in place might learn the use of connectives better than if the connectives were deleted. The students would have to establish what idea the connective signals. Establishing this relationship requires a very close examination of the sentences. (If the lessons were provided for an extra length of time or presented in a different way the results might have been significantly different. This is what research attempts to establish. These are the directions research takes one.)

The results on the **Robertson Written Connectives Test** showed that those students using the cloze lessons with connectives deleted (Treatment Group 2) did significantly better than Treatment Group 3 (noun and verbs deleted with limited teaching) and Treatment Group 5 (control group). Also that students in Treatment Group 4 (connectives deleted with non-intensive teaching) achieved scores better than the students in
Treatment Group 5 (control group). These results seem to suggest that students can learn the use of connectives either with intensive teaching or with limited teaching. The Robertson Written Connectives Test showed this. Good teaching and good materials could provide the necessary input for better learning and understanding of connectives. Knowledge of connectives is an important element in the development of reading comprehension.

Ability Groups. As was the case on the post-treatment Cloze Comprehension Test results, the three ability groups (High, Middle, Low) obtained scores on the Robertson Written Connectives Test that were somewhat different from what might have been expected. While the students in the High ability group achieved significantly superior scores to both the Middle and Low ability groups, the Middle and Low ability groups did not obtain scores that were statistically significantly different from each other.

A theoretical scenario can be drawn to explain this phenomenon—the same condition that was found in the post-treatment Cloze Comprehension Test. The Middle and Low groups were undifferentiated statistically. Was it a question of the Low group doing better than would be expected relative to the Middle group? Gomberg (1976) found that even her Low group was, because of the non-threatening risk-taking characteristics of cloze exercises, able to perform to task on cloze compared to other groups. Or, was it a question of the tedium, mentioned by the teachers in their questionnaire, affecting the brighter of the two groups? There seems to be some support for the idea that lower ability children are more readily able to accommodate repetitious
behavior than brighter children.

**Interaction Effects Obtained by Crossing Ability (AB) and Treatment Factors (TR)**

Neither of the two deletions systems nor the two intensities of teaching had significant differential effects on the AB x TR factor. Appendix D shows the fifteen means and standard deviations for the Ab x TR interaction.

**Summary of the Results Pertaining to Hypothesis II.** The analyzed data indicated that the completion of cloze passages with connectives deleted did have an effect on children's ability to learn and to use connectives. This was demonstrated by the students' performance on the Robertson Written Connectives Test.

The analyzed data required that parts one and two of Hypothesis II be rejected. There were significant differences among the five treatment groups and among the three ability groups ($p < .05$). Part three of Hypothesis II could not be rejected as significance was not obtained for the interaction of ability and treatment (AB x TR).

**Test of Hypothesis III**

Hypothesis III stated that there would be no significant differences in the mean comprehension scores among the five treatment groups and among the three ability groups when interaction effects, ability by treatment (AB x TR) and class within treatment (CL w TR) were considered.
Interaction of Ability by Treatment on Post-Treatment Comprehension Scores as Measured by the Canadian Test of Basic Skills and the Cloze Comprehension Test

Tables 13 and 15 show that there were no significant differences in mean scores as a result of the interaction effects. There were no significant differences in mean score results obtained due to the treatment factors in the interactions because none of the treatment groups obtained scores that were statistically different.

The three ability groups achieved scores that were significantly different when comprehension was measured by the post-treatment Canadian Test of Basic Skills but there were no significant differences between the Middle and the Low ability groups when comprehension measures were taken on the post-treatment Cloze Comprehension Test.

The significant F-ratio obtained by the three ability groups was the result of students being assigned to the three reading levels according to scores obtained on the post-treatment Canadian Test of Basic Skills given prior to the study beginning. The interaction between treatment and ability levels was not significant, however. This was also the case with the other interaction effects.

These non-significant results dealing with the interaction of AB x TR meant that this aspect of Hypothesis III could not be rejected.

Interaction of Class within Treatment on Post-Treatment Comprehension Scores as Measured by the Canadian Test of Basic Skills and the Cloze Comprehension Test

No significant differences were established when scores from the post-treatment Canadian Test of Basic Skills and the post-treatment Cloze Comprehension Test were analyzed. In either case the interaction of
classes per se and treatment conditions did not produce scores that were significantly different. Thus the part of Hypothesis III that addressed these interactions could not be rejected.

**Summary**

Chapter IV has provided the results and a discussion relating to each of the hypothesis postulated. Test results focussing on Hypothesis I revealed that treatment conditions, including differing deletion systems and intensities of teaching, did not produce significantly different comprehension mean scores on the post-treatment Canadian Test of Basic Skills and the post-treatment Cloze Comprehension Test.

Hypothesis I was also formulated to investigate the effectiveness of different teaching methods on students of different ability. It was found that differences obtained by the three ability groups on the post-treatment Canadian Test of Basic Skills, while significant, could not be attributed to treatment. The differences among the three ability groups, as measured by the post-treatment Cloze Comprehension Test, were different from those obtained on the post-treatment Canadian Test of Basic Skills in that while the High ability group was significantly different from the Middle and Low ability groups, there was no significant difference between the Middle and Low ability groups.

Hypothesis II was formulated so that the research could investigate how well students might learn the use of connectives as measured by the Robertson Written Connectives Test. The analyzed data showed that those students who completed cloze passages exercises with connectives deleted achieved significantly better on the Robertson Written Connectives Test than did the control group. However, those who received cloze
exercises with noun/verb deletions and intensive instruction also achieved significantly superior results to the control group. Further, one treatment group that completed cloze passages with connectives deleted achieved better than a treatment group that had noun/verb deletions with non-intensive teaching. The data indicate that students are able to learn the use and function of connectives when connectives are presented as they were in this study.

Hypothesis III covered the interaction effects of ability by treatment and class within treatment upon comprehension scores as measured by the post-treatment Canadian Test of Basic Skills and the post-treatment Cloze Comprehension Test. The analysis of the data revealed that there were no significant differences among the five treatment groups and ability and class.

The research, while not producing significant results in measured comprehension gains, did provide findings that will be useful to classroom practice. The results showed that students did gain a knowledge of connectives from the cloze instructional procedure and could also transfer this knowledge to a testing situation. Perhaps with modifications to materials and methodology even better results would ensue. Chapter V will address these concerns.
CHAPTER V

SUMMARY, CONCLUSIONS, DISCUSSION AND RECOMMENDATIONS

Summary of the Study

The major purpose of the study was to investigate the effectiveness of using the cloze procedure for developing reading comprehension where two types of context clues: idea clues, involving noun and verb deletions, and presentation clues, involving connectives deletions, were used in the construction of cloze passages. In addition, the study examined the effects of intensive teaching as opposed to non-intensive teaching in developing ability in learning to use context clues. Students of three reading comprehension levels, High, Middle, and Low, were compared in an attempt to determine whether or not a particular reading level would derive more benefit from cloze instruction than another reading level. Finally, the study investigated how the treatment affected the performance of the children on a specific test of connectives.

The sample consisted of 434 fifth grade children enrolled in 20 classrooms in the Regina public school system. Classes were randomly assigned to four experimental groups and one control group. The experimental groups were assigned to cloze exercises that had either noun/verbs deleted or exercises that had connectives deleted. In addition, experimental groups received intensive teaching or non-intensive teaching. Each of the experimental groups completed twenty-three cloze exercises over an eight-week period. The control group, consisting of four classes,
received the developmental reading programs existing within the schools at the time. The sample was ranked into groups representing High, Middle, and Low reading comprehension ability in order to investigate the treatment most effective for a particular ability group.

Each of the teachers was provided with in-service instruction in how to conduct the cloze lessons. The in-service instruction was accompanied by specific written instructions for each cloze presentation. Instruction in the classroom was observed by monitors who made random visits to the experimental classrooms. Each monitor was provided with a Monitors' Checklist for recording data related to the instructional procedure. These data were used to maintain some control on the procedures during the treatment period.

In order to determine whether the treatment had effects upon reading comprehension, pre- and post-tests were administered using standardized tests, the post-treatment Canadian Test of Basic Skills (Level 10, Form 3M, and Level 11, Form 4M) and specifically designed tests, the Cloze Comprehension Tests (pre- and post-treatment). The students were also given the Robertson Written Connectives Test to determine if the treatment had an effect upon their command of connectives. The data obtained were subjected to an analysis of covariance and levels of significance tested at the .05 degree of confidence.

Summary of the Findings

The results of the analysis of the data and also a discussion relating to each of the hypotheses postulated were given in detail in Chapter IV. Essentially the findings relating to Hypothesis I revealed that treatment conditions, consisting of different deletion systems and
varying intensities of teaching while working with cloze passages, did not produce significantly different mean comprehension scores on the post-treatment measures, the Canadian Test of Basic Skills and the Cloze Comprehension Test. The first part of Hypothesis I, which had focused upon the treatment effects of comprehension scores of the five treatment groups, could not, therefore, be rejected. The hypothesis had also been formulated to investigate the possible effectiveness of the treatment conditions on students of different reading ability levels. It was found that differences obtained by the three ability groups on post-treatment Canadian Test of Basic Skills were significant but could not be attributed to treatment as the groups obtained scores that were within expectations, i.e., the High ability group obtained scores significantly greater than the Middle and Low ability groups, and the Middle ability group obtained scores that were significantly greater than those of the Low ability group. However, the differences in scores among the three ability groups, as measured by the post-treatment Cloze Comprehension Test, revealed that the High ability group performed significantly different from the Middle and Low ability groups. There was no significant difference between the Middle and Low ability groups. The second part of Hypothesis I was, then, rejected.

Hypothesis II tested the same treatment conditions and teaching intensities upon the students' performance on the Robertson Written Connectives Test, given as a post-treatment measure. The data showed that the students who completed cloze passages where connectives had been deleted and where both intensive and non-intensive teaching occurred, achieved significantly greater scores on the Robertson Written
Connectives Test than did the control group. Also the treatment group with cloze passages with connectives deleted which had received intensive teaching achieved greater scores on the same measure than did the treatment group with noun/verb deletions with non-intensive teaching. The two treatment groups that had had intensive teaching, one group with cloze passages with noun/verb deletions and the other group with cloze passages with connective deletions, did not obtain scores that were significantly different to one another. Differences within ability groups were observed but were not in the same pattern as was found with the testing of Hypothesis I using as a criterion measure, the post-treatment Canadian Test of Basic Skills. With the Robertson Written Connectives Test the High ability groups scored significantly greater than the Middle and Low groups. The Middle and Low groups, however, were undifferentiated in their scores. Hypothesis II was, then, rejected.

A third area under investigation was the interaction of student ability groups by the various treatments (AB x TR) and the interaction of the various classes within the treatment conditions (CLwTR). The analyses showed there were no significant differential mean scores when the interaction effects were considered for scores on the post-treatment Canadian Test of Basic Skills and on the Robertson Written Connectives Test. Hypothesis III could not, therefore, be rejected.

Conclusions of the Study

The results obtained from the analysis of the data led to the following essential conclusions.
1. The findings suggest that the experimental materials as developed and as used in this study—twenty-three cloze lessons over a period of eight weeks—were not any more effective in developing comprehension skills as measured by the post-treatment Canadian Test of Basic Skills and the post-treatment Cloze Comprehension Test than the developmental reading program used by the control groups over the same period of time.

2. The intensity of teaching the cloze exercises was not a factor in developing comprehension skills as it was measured by the post-treatment Canadian Test of Basic Skills and by the post-treatment Cloze Comprehension Test. Thus whether the cloze exercises (noun-verb and connectives deleted) were administered with intensive teaching instruction or in a non-intensive fashion, the results were undifferentiated. It would appear that intensity of teaching is not as crucial as critics have hitherto supposed. Or it might be that the levels of intensity of teaching were not, in practice, as distinct as was thought.

3. The intensity of teaching was a significant factor in the results pertaining to the Robertson Written Connectives Test. Here those groups having intensive teaching and noun-verbs and connectives deleted achieved significantly higher results than did the control group.

4. Instruction in cloze passages with connectives deleted, whether intensive or non-intensive teaching was applied, produced superior results to the control group on the Robertson Written Connectives Test. It can then probably be concluded that cloze lessons with connective deletions are worthwhile devices for developing an understanding of connectives.

5. The results of this study suggest that neither of the word classes deleted (representing idea context clues—noun/verb; presentation
context clues-connectives) were more effective in developing reading comprehension skills as measured by the post-treatment Canadian Test of Basic Skills and by the post-treatment Cloze Comprehension Test.

Discussion and Recommendations

The results of the study and the conclusions from the results generated the following discussion and recommendations. The discussion and recommendations are presented under groupings concerning the design of the study and the materials used.

Design Features

1. Extending the duration of cloze studies as Jongsma suggested in 1971 may not be as necessary as was once felt. The fact that some researchers (Faubien, 1971; Martinez, 1978) reported significant findings when studies were in fact shorter than the present study suggest that variables such as teaching style, materials, and test instruments may be factors more critical than the length of time the studies were continued or the number of lessons used in the studies. It is recommended that future researchers might investigate some of these variables, possibly in short iterative studies, when exploring the value of cloze lessons for teaching context clues in order to raise comprehension levels.

2. The lessons may have been presented too frequently. For practical reasons (school constraints) the length of the study was not able to be extended beyond eight weeks, but it was thought that students should respond to as many lessons as possible. Future investigators
might have the teachers present the lessons less frequently than the three lessons per week as was done in the present study. Some teachers reported that the exposure of three lessons per week was too frequent and that the students did not have sufficient time to process and assimilate the ideas and concepts. Some students, especially those in the non-intensive teaching groups which lacked direct teacher input found this degree of saturation tedious. The cloze lessons might be provided once per week and might be used as supplemental material to an existing program.

3. Schneyer (1965) stated that cloze procedure in and of itself would not foster greater growth in reading comprehension skills than other methodologies unless group discussion were to be made an integral part of the cloze lessons. However, discussion of the cloze responses in heterogeneous groups, as used in this study, might have presented problems. Further research could take a closer look at the question of group heterogeneity and homogeneity. Random assignment of homogeneously grouped children would address this issue and is a recommendation for further studies.

4. Scores on the post-treatment Canadian Test of Basic Skills indicated that the students designated as having High, Middle, and Low reading comprehension abilities did not perform in a manner that indicated the cloze exercises were more suitable for any one of these reading ability levels. The results on the post-treatment Canadian Test of Basic Skills showed significant differences between the three ability groups. These results were predictable in that the three reading ability groups did not make any significant shifts. The results on
the post-treatment Cloze Comprehension Test were somewhat different. While the High ability group scored significantly different from the Middle and Low groups, there was no significant difference between the Middle and Low ability groups. Researchers have stated (Dulin, 1970; Smith and Johnson, 1980) that a most important factor in producing successful responses to cloze items is the understanding of why a certain word is better than another, i.e. having a knowledge of semantic and syntactic features within the sentence. It is recommended that future research use a better match between students' reading abilities and the reading level of the cloze passages. In other words, a child with competencies at a middle Grade 5 level should have cloze passages at that level and a child competent at a Grade 3 level having materials at that particular level. Teachers then would be geared to the instructional levels of the particular groups. As well, passages could be selected or written so that the semantic and syntactic features are clearly apparent. Also, the passages could be of lengths that are suitable in terms of attention span, vocabulary and concept load, and in terms of print size.

5. The attitude of students towards cloze exercises might be another factor to investigate in any further study involving the cloze procedure and contextual aids. Teachers reported that some students always looked forward to completing cloze lessons while others were less enthusiastic. Gomberg (1976) working with students in Grades 3 to 5 stated that the cloze technique when used as a teaching device, freed children to take a chance, to be wrong, to try something different. She reported that even the poorer, less successful readers began to
participate, look for some logic in the response, and then finally to provide some oral support for their choice. While this study did monitor daily procedures, and recorded events anecdotaly, future studies might monitor children's attitude in a more sophisticated manner. This may provide information regarding children's approaches to cloze exercises and their continuing changes in responses, both written and oral.

6. Research evidence (Culhane, 1972) has suggested that there is no difference in students' overall achievement when both exact cloze item replacements and synonym replacements are compared. The present study, on the basis of this research evidence and also because of practical and logistical reasons, used an exact replacement system. Jongsma (1980) says, however, it is more efficacious to use synonyms as correct responses when cloze procedure is used as an instructional tool. Culhane (1972) did find that the scores of lower ability children are better when synonym replacements are accepted. It is therefore recommended that future researchers score completed exercises and tests, first accepting exact replacement only and then looking at comparisons in group means when synonyms are accepted.

7. Classroom variables might well be investigated in future studies involving cloze passages and the teaching of contextual aids. The classrooms that achieved more success in completing cloze passages than others, might, in fact, have had some teaching/teacher factor that contributed to their superior performance. Further research should investigate variables such as a particular teacher's attitude towards cloze, classroom climate (autocratic-democratic) and such issues as the
degrees of student participation and the response to cloze instruction.

**Materials**

1. Future researchers might consider changes to the actual passages used in cloze studies. In the present study stories used for cloze passages were selected from a basal reader and word deletions were made on the basis of idea and presentation clues that were present in the passages. The passage length was determined by the frequency or density of contextual aids available in the passage. The identification of ten contextual aids and a suitable cut-off point marked the end of the passage. It was suggested by the teachers and students that the next passage (lessons) might continue from where the previous passage left off. The students, rather frequently, displayed anxiety or frustration or annoyance at not knowing what the outcome or conclusion of a particular story was. The teachers stated that this produced some loss of interest which may have had a depressing effect on performance. Future studies might provide passages from continuous text to alleviate this possible problem.

2. The present study suggests that cloze procedure with connectives deleted was effective in developing an understanding of connectives in that the experimental groups replacing missing connectives achieved significantly better on the Robertson Written Connectives Test than did the control group. As a practical classroom recommendation, then, cloze passages with these connectives deleted can effectively be used.

3. It is possible that significant differences in scores might have occurred among the treatment groups or between the treatment groups
and the control group had content material been used. The researcher selected essentially narrative material from a basal reader for the reasons stated in Chapter III. However, the results were not as encouraging as those obtained by those researchers using content material (Guscott, 1971; Martinez, 1978). Researchers should consider using other materials than those used in this study; from social studies, for example. Successful studies reported in Chapter II (Table 3) did draw on social studies materials for the cloze lessons. Students reading narrative material are, perhaps, not as intense or as deliberate in their reading behavior. On the other hand, when content materials are used the reading behavior is more intense and the search for fact and detail is more purposeful. This being the case, it is reasonable to conclude that students would then focus on such features as context clues. This could, then, be the determining factor in the success of these studies with content area materials.

4. The presentation of six contextual aids at the same time might have been too much for some students. Some students had difficulty accommodating the substantive content of the model chart even though the pilot classes reported no great difficulty in working with it. Teachers in the study and this particular researcher recommended that contextual aids be presented in a spaced, rather than a massed fashion. This would mean that a particular contextual aid would be introduced and practised before another is introduced. After the students had an opportunity to practise each of the contextual aids separately, they could receive lessons which would contain a number of contextual aids at the same time.
While comprehension scores achieved by students in the experimental groups did not differ significantly from control groups after a period of completing cloze exercises with different deletion systems and teaching intensities, some effective changes were found. It was found that these cloze procedures did teach the use of connectives effectively. That the knowledge of the use of connectives is important for the development of comprehension is clearly supported by H. Alan Robinson when he stated:

Connectives, or signal words, are important aspects of vocabulary development, for they are keys to improving the precision of a student's comprehension. (1975, p. 69)

As well, it can be argued, that while the experimental groups using cloze procedure did not make significant gains over the control group, they did achieve equally well. Whether it is realistic to expect cloze procedure to fit into empirical research designs without producing negative features in students through tedium and boredom is a moot point at this time. Further research is to be encouraged. It may be, however, that cloze will ultimately be used as a classroom technique spaced over long periods of time rather than through daily saturation. The rationale for this may well have to be logical rather than empirical.
BIBLIOGRAPHY


Catterson, Jane H. Induction Versus Deduction Methods in Word Analysis in Grade Five (Doctoral Dissertation, Boston University, School of Education, 1959).


McGovern, B. L. The Effects of Instruction in Mental Imagery and a Modified Cloze Procedure on Reading Comprehension (Doctoral Dissertation, East Texas State University, 1982).


Shoop, M. "Improving Inferential Comprehension of Content by Combining In­structional Techniques." Reading Improvement, 19, Winter, 1982, 268-273.


Appendix A

Pre- and Post-Testing Instruments and
Instructions for Administration
Post-Treatment Canadian Test of Basic Skills

Reading Subtest

Instructions to Teachers

Please administer Level 11, Form 4 of the Canadian Test of Basic Skills immediately after the completion of the cloze procedure lessons. The objective of this test is to see how well students are able to respond to comprehension questions after having had experience with contextual aids. The students' responses to this test will help us determine the effectiveness of the treatment to which the students have been exposed over the past several weeks.

Instructions to Students

I would like you to do the Reading Comprehension Test that you have in front of you. You have all had this test before. I will give you the instructions again and tell you when to start and stop. Please work carefully and try to select the choices you think are best.
Canadian Test of Basic Skills

Level 11—Form 4M
Sometimes an intelligent hunting dog is gun-shy at first. This means that he shows fright when he hears the sound of a gun. Before he can be a useful hunting dog, he must be broken of this habit. Some trainers use the method described here to help dogs overcome gun-shyness.

The dog is chained to his kennel and given nothing to eat for several hours. When food is finally given to him, the dog is so hungry he can hardly wait to eat it. While the dog is eating, the trainer fires a gun. If the dog pays no attention to the noise, the trainer keeps on firing all the time the dog is eating. If the dog becomes frightened and runs into his kennel, the food is taken away. When the dog comes out of his kennel again, he finds that his food has disappeared. In a few hours another dish of food is placed before the dog, and again the trainer fires the gun while the dog is eating. If the dog runs into his kennel, the food is again removed. After this process has been repeated a few times, the dog learns that if he runs away from the noise, he will lose his meal. He also learns that the sound of a gun does not hurt him.

25. What is meant by "gun-shyness" in a dog?
   1) Fear of objects that make loud noises
   2) Suspicion at the sight of a gun
   3) Fright at the sound of a gun
   4) Dislike for a master who fires guns

26. What is the trainer trying to teach the dog?
   1) That he should look for food whenever he hears a gun
   2) That the sound of a gun will not hurt him
   3) That he can expect to be punished whenever he does not obey
   4) That he should stay in his kennel when he is frightened

27. When is the gun fired during the training?
   1) When the dog comes out of his kennel
   2) Before the dog's food is served to him
   3) Just after the dog finishes his meal
   4) While the dog is eating

28. If the dog runs into his kennel when the gun is fired, what happens?
   1) The trainer takes his food away.
   2) The trainer gives him a good scolding.
   3) The trainer chains him.
   4) The trainer keeps firing until he comes out again.

29. Why does the trainer continue to fire the gun if the dog does not appear to be frightened?
   1) To check the dog's hearing
   2) So that the dog will get used to the sound of the gun
   3) To teach the dog to know the sound of a gun when he hears one
   4) To scare the dog into obeying commands

30. With which of these statements would the writer most surely agree?
   1) A good hunting dog jumps when he hears a gun.
   2) Smart hunting dogs are seldom gun-shy.
   3) A good hunting dog is not gun-shy.
   4) Hungry dogs make the best hunters.

31. What is the main purpose of the writer?
   1) To describe one method of teaching a dog to remain calm when a gun goes off
   2) To explain why some dogs are gun-shy while others are not
   3) To describe the qualities of a good hunting dog
   4) To show that you can't teach an old dog new tricks

A candy most of us like is made from the seed of the cacao. The cacao is a large yellow fruit. It may be as big as 25 cm long. It grows on a tree in warm, wet countries. Inside the ripe cacao are many seeds. Each is about the size of a large bean. The seeds are taken out, cleaned, and roasted. Then they are mashed into a paste. Sugar and vanilla may be added. Sometimes milk is stirred in. This paste is spread out in thin cakes. When these harden, they are sweet brown chocolate bars!

32. Which of these is always used in making a chocolate bar?
   1) Milk
   2) Sugar
   3) Vanilla
   4) Cacao paste

Go on to next page
33. Which of these comes first in making a chocolate bar?
1) Mashing the cacao seeds
2) Adding sugar and vanilla
3) Roasting the cacao seeds
4) Spreading the paste out

34. The cacao is about the size of
1) a pinhead. 3) a baseball.
2) a bean. 4) a football.

35. What is this story about?
1) How to grow a cacao tree
2) How a chocolate bar is made
3) Plants that grow in warm countries
4) Many kinds of candy made of chocolate

Bill showed Leo how to make himself taller.
Bill’s mother gave them four large empty juice cans. The tops had been cut off. Bill drove a nail through each side of one can near the bottom to make two holes. He then put strong string through the can from one hole to the other. Then he turned the can over, so that the bottom end was up. He and Leo made three more like it.
Then Leo stood on the bottom of two of the cans. Bill tied the strings around his shoes. Bill stood on the other two cans, and Leo tied them on. The cans added 15 cm to their height. Leo was now 152 cm tall, and Bill was 155 cm tall. When they first tried to walk, they had to hold each other’s hands so they would not fall. After they practised a little, they could walk alone. Now they could see over the fence in Bill’s yard. They walked all around the yard. Then they walked over to Leo’s yard to show his mother.
“My, how you’ve grown!” she said.

36. For what were the strings used?
1) To tie the cans to the boys’ feet
2) To tie the cans together
3) To keep the boys from falling
4) To keep the cans from turning over

37. About how tall were the juice cans?
1) 152 cm
2) 155 cm
3) 15 cm
4) There is no way of telling from the story.

38. Which drawing best shows what one of the finished cans looked like?

39. What did Leo’s mother mean by saying he had grown?
1) She had not seen him for a long time.
2) She thought he had really grown.
3) She meant that he was taller than Bill.
4) She was pretending she did not know about the juice cans.

40. Which of these tells best what this story is about?
1) Ways to use old tin cans
2) How to learn to walk
3) How to walk without shoes
4) A way to be taller

41. About how high was the fence in Bill’s yard?
1) 122 cm
2) 145 cm
3) 155 cm
4) Almost 180 cm

Go on to next page ➤
Tom's job at home was to take out the garbage. One day in July, the men who picked up the garbage went on strike. They wanted more money for their work. Soon the garbage began to pile up. Cans and barrels were overflowing. Streets and alleys were littered. Tom could find no place to put his family's garbage. He was also kept busy cleaning up paper, bottles, and other trash along his street.

Downtown the stores were in trouble, too. Heaps of boxes and cartons blocked doors. Trucks could not get through to deliver new goods. People did not come in to buy. Piles of garbage behind restaurants drew rats and flies. The whole town smelled!

Finally, the mayor called a meeting. He asked the people to vote to pay higher taxes. The garbage men could then be given better pay. The people did decide to raise the taxes. The mess was slowly cleaned up. Tom's town was turned from a giant dump back into a beautiful place to live.

42. Why did the garbage men strike?
1) They didn't like their jobs.
2) They didn't like the mayor.
3) They were tired of working.
4) They wanted higher pay.

43. What did the men who went on strike do?
1) They left town.
2) They quit working.
3) They changed their jobs.
4) They picked up trash downtown.

44. When did the strike happen?
1) In the summer
2) In the winter
3) In the spring
4) In the fall

45. What were the streets like behind the restaurants during the strike?
1) Busy
2) Blocked
3) Unhealthy
4) Narrow

46. How did the strike affect Tom?
1) He didn't have to do so much work.
2) It made more work for him.
3) It made him sick.
4) His father was out of a job.

47. What did the trash pile-up do to the downtown area?
1) It held up traffic.
2) It drew crowds.
3) It gave more people jobs.
4) It raised the price of parking.

48. Why were the stores downtown in trouble?
1) The rats ate their goods.
2) Their goods cost more.
3) Their trucks were out of order.
4) They lost business.

49. Why was there trash in yards and streets?
1) People were careless about where they threw trash.
2) Strong winds blew the trash down on the ground.
3) There was no more room in the trash containers.
4) The garbage men put it there while on strike.

50. What was the first thing the people did in solving their problem?
1) They met with city leaders.
2) They voted for a new mayor.
3) They asked for help from a nearby city.
4) They decided to pay better wages.

Make no marks in this booklet.
51. Where did the extra money come from to pay the garbage men's wages?
   1) From gifts of money
   2) From the downtown stores
   3) From the mayor
   4) From tax money

52. What did the people have to do before the taxes could be raised?
   1) Talk with the mayor
   2) Clean up their town
   3) Cast their votes
   4) Meet with the garbage men

53. Which did the garbage men not do for their town after they went back to work?
   1) Make it look better
   2) Make it into a giant dump
   3) Make it more healthful
   4) Make it easier to get around in

54. What do the trees in the poem look like?
   1) They are covered with snow.
   2) They are covered with leaves.
   3) They are bare.
   4) Leaves are falling from them.

55. What are the trees waiting for?
   1) The sun
   2) Snow
   3) Wind
   4) Rain

56. What part of the trees is meant by "boughs"?
   1) The roots
   2) The leaves
   3) The trunks
   4) The branches

57. How many other words does the word "tall" in line 4 rhyme with?
   1) One
   2) Two
   3) Three
   4) Four

58. What kind of a tree might the one in the poem be?
   1) Pine
   2) Spruce
   3) Fir
   4) Maple

59. How would you best show how the trees look?
   1) By standing still and holding your arms up high
   2) By jumping and running fast
   3) By shivering as though you were cold
   4) By standing very still with your arms down

60. What are the last four words in the poem supposed to show?
   1) How trees' hands look
   2) How snow falls
   3) How leaves fall
   4) How the trees are standing
A fisherman was fishing in the Atlantic Ocean, near the coast. He pulled in his trawl, a kind of net he was dragging behind his boat. In the net were several fish. There was also something that looked like a large tooth. When he got it to shore, other fishermen said it was a tooth, an elephant’s tooth. They had heard of elephant’s teeth and bones taken from the sea bed off that shore, many metres down.

The fisherman could scarcely believe this. He did not think there had ever been elephants in North America. He wrote the museum in the city and told about the tooth. A man came from the museum. He was much excited by the fisherman’s find. He said it was the best elephant’s tooth he had seen brought up from the sea bed and that it was probably 11,000 to 15,000 years old. That long ago, he explained, the land now under that part of the sea was a grassy plain. Elephants and other big animals lived on it. Then big ice sheets moved down from the north and covered it. The remains of animals were buried under these glaciers. When the ice melted, the ocean became deeper, and water covered the bones. There they had lain until the fishermen’s nets brought up teeth or some other part of the skeleton.

The fisherman gave the tooth to the museum. Now many people can see it and learn that these huge animals once lived on this land.

61. What is told in the first paragraph?
1) How an elephant’s tooth was found
2) How elephants first came to North America
3) Why the fisherman wrote to the museum
4) What happened when the glaciers came

62. How did the fisherman know he had an elephant’s tooth in his net?
1) He had often found such teeth in his net.
2) He knew that elephant bones were under the water.
3) Other fishermen told him what it was.
4) It was too large to be any other kind of tooth.

63. Why did the fisherman find it hard to believe it was an elephant’s tooth?
1) Fishermen often lie about their catch.
2) He thought it strange to find such a thing in the ocean.
3) He knew that there had never been elephants in North America.
4) The man from the museum thought it was something else.

64. Where had the tooth come from?
1) The tide had washed it there.
2) A fisherman’s net had dragged it there.
3) Ice sheets from the north had brought it.
4) An elephant had once lived there.

65. Why was the man from the museum much excited about the find?
1) No other elephant’s tooth had ever been found in an ocean.
2) He was with the fisherman when the tooth was found.
3) The tooth that was found was in such good condition.
4) It was the oldest tooth ever found.

66. What does the article tell about the area 15,000 years earlier?
1) Many Indians fished there.
2) There were fields in which pioneers raised barley.
3) It was a sheet of ice that had moved down from the north.
4) It was grassland where animals lived.

67. What happened as the glaciers melted?
1) They flooded the plains.
2) They washed the bones up on the land.
3) The water drowned all the animals.
4) The animals came back to the plain.

68. Why was the tooth put in the museum?
1) No others had ever been found.
2) Few people had ever seen an elephant.
3) It was the oldest tooth ever found.
4) It told something important of the past.

69. The article shows which of these?
1) Glaciers drove elephants from North America.
2) Elephants once lived in North America.
3) The coast was once under deep water.
4) Ice once covered all of North America.
70. Which tells best what the “sea bed” is?
   1) The ocean shore where water is shallow
   2) The land and rocks under the ocean
   3) A place in the ocean where the fish sleep
   4) A deep hole made in the sea by melting glaciers

71. How did Nancy find out where Kimi lives?
   1) A man at the post office told her.
   2) Her teacher gave her Kimi’s address.
   3) She went to visit Kimi.
   4) The story does not say.

72. Why is a stamp printed on an aerogramme?
   1) To show that the sender has paid for mailing the letter
   2) To show which city the letter comes from
   3) To tell the post office where to send the letter
   4) To show the writer which side of the paper to write on

73. Why does Nancy write so carefully?
   1) She does not want to spoil the aerogramme and waste the stamp.
   2) A letter with mistakes in it cannot go by air mail.
   3) She cannot write very well.
   4) Her teacher will see her letter.

74. Where does Nancy write Kimi’s name and address on the aerogramme?
   1) At the top of her letter
   2) On the outside of the folded letter
   3) On the envelope she puts the letter in
   4) Just above her own name and address

75. What is the most likely reason that Nancy uses air mail?
   1) It is easier to write letters on aerograms.
   2) Air mail costs less than ship mail.
   3) There is no other way to send letters to Japan.
   4) Air mail travels faster than ship mail.

76. How does the story show that Japan has air mail, too?
   1) Kimi writes to Nancy every month.
   2) Kimi lives in the big city of Tokyo.
   3) Kimi’s aerogrammes have Japanese stamps.
   4) Kimi sent Nancy a picture of the post office.

77. What is the second paragraph about?
   1) How Nancy learned Kimi’s name
   2) Where Kimi lives in Japan
   3) What the pen pals gave each other for Christmas
   4) How the pen pals’ letters are sent

78. Which is the best title for this story?
   1) “Two Little Girls”
   2) “All About Air Mail”
   3) “Pen Pals Far Apart”
   4) “Letters from a Girl in Tokyo”

79. Every paragraph is about
   1) what pen pals do.
   2) how to choose a pen pal.
   3) sending aerogrammes to a pen pal.
   4) gifts and invitations for a pen pal.
Old Ramon and the boy sat by the fire eating in the silence of good appetites. Old Ramon cleaned oft his plate and set it down beside him and drained his third cup of black coffee and set the cup down on the plate. The boy finished too and set his plate down beside him and his cup on it. Old Ramon reached to his own cup and rattled it a little on the plate and looked at the boy.

The boy looked straight back at him in the firelight. "I prepared the food." Old Ramon thumped a hand on the ground. "And I took care of the ticks." He pushed up to his feet. "There is one way to decide such a thing. We will toss the coin." He searched in a pocket of his shapeless old trousers that had been patched until there was little or the original cloth left and had patches on the patches. He pulled out a small round piece of metal that shone in the firelight from the constant rubbing against the cloth of the pocket.

"I will take the heads," said Old Ramon. He flipped the coin spinning in the air and caught it in his right hand and slapped it down on his left wrist. He peered at it. "Ah, it is the heads. Do you see?" He held the wrist toward the boy, and the boy too peered at the coin.

Slowly the boy rose and began to gather the dishes. He was turning toward the pool that had settled now clear and clean in the dim darkness when Old Ramon spoke, softly, with a small chuckle in his voice. "Mother of God. I cannot do it. To one who thinks himself so clever like my cousin Pablo, yes. To the son of my patron, no. Look you now at this and see." He held out the coin and turned it over slowly between his fingers. Both of the sides were the same.

80. Why were Old Ramon and the boy so quiet during mealtime?
1) They were shy.
2) They were hungry.
3) They feared one another.
4) They were angry.

81. What else did the boy mean when he looked at Old Ramon and said, "I prepared the food"?
1) He had done his share of the work.
2) He had cooked the meal.
3) He did not know how to do anything else.
4) He was proud of his work.

82. Why did Old Ramon's coin shine?
1) It was new.
2) It had been washed.
3) He had polished it with a cloth.
4) It had been buffed by being carried.

83. Why did Old Ramon want to toss the coin?
1) To settle something fairly
2) To play a trick on the boy
3) To show his skill in catching the coin
4) To see if heads or tails would come up

84. Why did Old Ramon decide to show the boy his coin?
1) He wanted to teach him a lesson.
2) He wanted to give it to him as a gift.
3) He did not want to deceive him.
4) He wanted to show how shiny it was.

85. Why would Old Ramon not mind tossing his coin for his cousin Pablo?
1) Pablo was a relative.
2) Pablo thought he was too smart to be fooled.
3) Pablo was older than the boy.
4) Pablo was easy to fool.

86. Who is the boy?
1) Ramon's son
2) Ramon's cousin
3) The boy Ramon hired to be his helper
4) The son of someone important to Ramon

87. Where are the boy and Old Ramon eating?
1) Outdoors by a campfire
2) At a table in a cottage
3) In a cafe or restaurant
4) At a picnic table in a park

88. What does the condition of Ramon's trousers show about him?
1) He was lazy and good-for-nothing.
2) He never mended his clothes.
3) He was poor.
4) He had been away from home for a long time.

89. What was necessary to make Old Ramon's trick work?
1) That he toss the coin and "call it" himself
2) That the boy not be allowed to see the head that came up
3) That the coin be caught in the right hand and turned over on the left
4) That the coin be flipped so that the same side always came up

Go on to next page.
90. What is the main idea of the last paragraph?
   1) The boy knew all of the time that Ramon was fooling him.
   2) The old man never intended to fool the boy.
   3) The old man could not go through with his plan for fooling the boy.
   4) Old Ramon would never let his patron's son wash his dishes.

91. What impression does the author give of Old Ramon?
   1) That he is both clever and dishonest
   2) That he really cares nothing about the boy
   3) That he would do anything to get out of work
   4) That he is a good man at heart

92. Which?
   Whenever I'm walking in the wood
   I'm never certain whether I should
   Shuffle along where the dead leaves fall
   Or walk as if I'm not there at all.

   It's nice to rustle as hard as you can.
   But I can't decide if it's nicer than
   Creeping along, while the woodbirds call,
   Pretending you are not there at all!

   Make no marks
   in this booklet.

93. What is the decision that the poet has trouble making?
   1) Whether to take one path or another through the wood
   2) Whether to walk through the wood or stay at home
   3) Whether to scuff noisily through the leaves or move slowly and silently
   4) Whether to rake up the dead leaves or leave them lying on the ground

94. Why is the poet's decision difficult to make?
   1) He enjoys doing both things equally well.
   2) He does not enjoy doing either thing.
   3) He has no one to help him make his decision.
   4) He has never done either thing before.

95. How does the poet walk as if he were "not there at all"?
   1) He pretends.
   2) He rustles.
   3) He shuffles.
   4) He creeps.

96. Why does the poet like to "shuffle" through the wood?
   1) He likes to hear the birds warn each other of his approach.
   2) He likes to scare the birds out of their hiding places.
   3) He likes to hear the crackle of the dry leaves underfoot.
   4) He likes to make believe he is somewhere else.

97. Which of these things does the poet especially enjoy doing when he walks through the wood quietly?
   1) Hearing the birds call the way they do when there are no people in the wood
   2) Pretending he is someone else
   3) Looking at the beautiful woodland scenery
   4) Listening to the sound the dead leaves make as they fall from the trees

98. What is the poet most likely to do the next time he is walking in the wood?
   1) To shuffle, because he mentions that possibility first in his poem
   2) To have difficulty making up his mind what to do
   3) To take a friend along with him so he won't have to make any decisions
   4) To creep, because he mentions that possibility last in his poem

Level 11
Canadian Test of Basic Skills

Level 10—Form 3M
Young Paul Wittgenstein loved to play the piano. He played so well everyone thought he would go far. But in an accident, Paul lost his right arm. Some thought he would never play again. Paul surprised them! He made one hand do the work of two. Every day he practised for hours. He worked so hard that sometimes his fingers ached. Soon his music sounded as though it were being played by two hands. Many people came to listen to him. Special piano pieces were written for him. Playing the piano became Paul's life work after all.

12. In what way was Paul's piano playing unusual?
1) He played music.
2) It was hard work.
3) He played only with his left hand.
4) It was what he liked best to do.

13. Why did Paul make one hand do the work of two?
1) He wanted to be different.
2) His right hand was hurt.
3) His fingers ached from overwork.
4) He had only one hand.

14. What does “he would go far” mean?
1) He would travel.
2) He would become famous.
3) He would lose his right arm.
4) He would be in an accident.

15. How did Paul learn to play the piano after the accident?
1) He took lessons.
2) His mother helped him.
3) He worked it out for himself.
4) He knew how before the accident.

16. When would the word “doubtful” best fit some of the people who were interested in Paul’s piano playing?
1) Just after the accident.
2) When he was young.
3) When they heard him play.
4) It would never fit.

17. How was Paul's life surprising?
1) He recovered from the accident.
2) He did what no one thought he could do.
3) He worked very hard.
4) He loved to play the piano.

Mr. Kozek works for the city of Kingston. He is busy the year around. In the early spring, he trims trees along the streets, which helps drivers to see better. He also clears out drains so that rain water can run off. In late spring, summer, and fall he drives a street sweeper. The sweeper’s brushes clean dirt off streets fast. Winter brings much snow. After a big storm, Mr. Kozek works day and night clearing streets. He sprinkles sand or salt on icy spots. His favourite job comes around Christmas time. Then he decorates the city’s big Christmas tree. Mr. Kozek’s work is never done.

18. Why does Mr. Kozek sprinkle salt or sand?
1) To keep streets from getting slippery.
2) To decorate the streets.
3) To help clean the streets.
4) To help drivers see better.

19. How does Mr. Kozek clean the streets?
1) He sprinkles sand and salt on them.
2) He brushes them with a big broom.
3) He washes them down with rain water.
4) He sweeps them with a big machine.

20. What does Mr. Kozek do when he “trims” trees?
1) Decorates trees.
2) Waters trees.
3) Cuts off tree branches.
4) Cuts down trees.

21. What ought to happen to the rain water?
1) It should go down the drains.
2) It should stay to help wash the streets.
3) It should water the trees.
4) It should run off onto lawns.

22. Most of Mr. Kozek’s work for the city is done on the
1) trees.
2) streets.
3) drains.
4) sweepers.

23. How many months of the year is Mr. Kozek busy?
1) One
2) Three
3) Six
4) Twelve

24. What is a good name for this story?
1) “The Street Sweeper”
2) “A Dull Job”
3) “A Busy City Worker”
4) “Decorating a Christmas Tree”
Long ago there were three brothers who lived on a farm. An old man who knew many magic secrets lived in a cave on a nearby mountain. One day Peter, the youngest brother, said to the others, “I am going up on the mountain. I want to ask the old man to teach me his magic secrets.” The older brothers did not want the youngest to outdo them. So they went along too.

The old man did not like visitors to come to his cave. He roared and screamed! But the boys did not go. Finally he said, “I will teach you my magic secrets. But you must stay with me a whole year to learn them well. And the last one to leave my cave must be my servant.”

The boys learned much magic. They could fly through the air and talk to animals. At the end of the year they were eager to go home. But the night before they were to leave, Peter overheard his brothers talking. They were planning to leave the cave first. That meant Peter would be the old man’s servant. Peter thought about what to do. He hoped the sun would shine the next day.

Luckily, the morning was bright and sunny. The three brothers started for the door of the cave. Peter was the last one there. “Stop!” called the old man. “You are the last one out of my cave. You are my servant.” “Oh, no,” cried Peter. “There is one behind me.” He pointed to his black shadow on the wall of the cave. As the old man tried to catch the shadow, Peter ran out. And Peter was without a shadow ever after.

25. Why did Peter’s brothers want to go along?
   1) They wanted to take care of Peter.
   2) They did not want Peter to get ahead of them.
   3) They wanted to prove they could walk as far as Peter.
   4) They wanted to hear the old man roar and scream.

26. Which word would best describe the boys when they met the old man?
   1) Brave
   2) Timid
   3) Silly
   4) Surprised

27. Which would be an example of the magic secrets the brothers learned?
   1) Running out of the cave
   2) Going up the mountain
   3) Making the sun shine
   4) Speaking with a fox

28. What were Peter’s brothers planning to do the last day?
   1) Try a magic trick on the old man
   2) Stay and be the old man’s servants
   3) Leave Peter behind for the old man
   4) Leave their shadows behind for the old man

29. Why did the old man make the brothers stay so long?
   1) So they would be his servants
   2) So they would be company for him
   3) So they would learn his secrets well
   4) So they would teach him some magic

30. What were Peter’s brothers going to do to him?
   1) Help him
   2) Betray him
   3) Tease him
   4) Sell him

31. Why did Peter hope the sun would shine?
   1) So he would have a shadow
   2) So he would wake up early
   3) So he could find his way down the mountain
   4) So he could see the old man

32. Why was it lucky the morning was sunny?
   1) Peter could see his brothers.
   2) Peter’s escape plan would work.
   3) Peter could see the door of the cave.
   4) Peter’s shadow would not be seen.

33. What helped Peter the most from becoming the old man’s servant?
   1) Magic secrets he had learned
   2) His brothers’ planning
   3) His ability to run fast
   4) His own clever thinking
34. What did the old man get in return for teaching his magic secrets?

1) Money
2) A servant
3) Sunshine
4) A shadow

35. What was unusual about Peter after his visit to the old man?

1) He never had a shadow.
2) He forgot all of the magic secrets he had learned.
3) He refused to go near the mountain again.
4) He was never without his shadow.

36. Why was Peter able to get away?

1) He could run fast.
2) His brothers helped him.
3) His shadow drew the man's attention away.
4) His shadow blocked the old man's path.

37. What would ground nutmeg look like?

1) A large red seed
2) Sand
3) Sugar
4) A brown powder

38. How is nutmeg-used?

1) It is planted for decoration.
2) It is put into foods to make them taste good.
3) It is made into pies and cakes.
4) It is ground into a fine flour.

39. Why did women buy wooden nutmegs?

1) They were cheap.
2) They gave baked goods a good flavour.
3) The women didn't know they were fakes.
4) The women liked them for decorations.

40. What must be done to the nutmeg before it can be used?

1) It must be ground.
2) It must be cooked.
3) It must be soaked in water.
4) It must be flavoured.

41. How do we know if people are obeying the Food and Drugs law?

1) Special men or women check products for sale.
2) The police test everything that is sold.
3) Food and drug producers say they obey the law.
4) Only persons who sell food and drugs can tell.

42. Which would be the best name for this story?

1) "Wooden Food"
2) "How Spices Are Made"
3) "A New Food"
4) "How a Law Protects Us"
A garden in a bowl is fun to make and fun to watch. Make one in the fall. You will have green growing things, and maybe flowers, to watch when snow is on the ground.

A fish bowl or tank at least 25 cm across is the best thing to use for your garden in a bowl. It can be round or square. Be sure the opening is large enough so that you can put your fist in. It should have a glass cover. You can buy your bowl at a pet shop, a variety store, or a florist shop.

In the bottom of the bowl put 2 to 4 cm of clean sand with some gravel in it, so that it will drain well. Then add a layer of charcoal pieces or bits of burned wood from the fireplace to keep the soil sweet. If you don't want these layers to show, leave a space at the sides for soil or moss. Next add 5 cm of soil. The best soil to use is the kind your plants are growing in when you find them. Heap the soil up at the back or leave it uneven so that it will look more natural.

You may get your plants in the woods or from your own home garden. Wherever you get them, take some extra soil in which they are growing. Dig tiny plants up carefully, keeping some soil around the roots. You can break off small branches of some of the larger plants and keep them in water until they have roots. All of your plants should be kept moist until you are ready to set them in your bowl.

Put each one in carefully, keeping its own soil around its roots. Press it into the soil but not into the sand. When all the plants are in, you may want to add moss from the woods. You can also make paths and put in twigs and little rocks to make it a woods garden. Then water it with a fine spray. For this you can use a small watering can, a syringe, or your mother's clothes sprinkler. Now cover your garden and set it in the light but not in the sun. A north window is best for a woodland garden.

Water your garden once or twice a week. Always water lightly. If water collects on the sides or glass cover of the bowl, lift the cover off for a while. Aside from this, all you have to do is watch your garden grow.

43. What is the purpose of paragraph 1?
1) To tell how to plant a garden in a bowl
2) To make you want to grow a garden in a bowl
3) To tell what plants to put in a garden
4) To show how to grow a garden in the winter

44. Which is not told in paragraph 2?
1) The size of bowl to use
2) Where to buy a bowl
3) Where to get soil
4) The kind of cover to use

45. In making the bed for your garden in a bowl, which of these steps might you leave out?
1) Put sand in the bottom.
2) Add a layer of charcoal.
3) Add 5 cm of soil.
4) Leave a space at the sides.

46. Which paragraph tells the best kind of soil to use for your garden?
1) Paragraph 1
2) Paragraph 3
3) Paragraph 4
4) Paragraph 5

47. Which of these gives the reason for putting sand in the bottom of the bowl?
1) Water runs quickly through sand.
2) Sand is always wet.
3) Sand is cleaner than soil.
4) Plants grow well in sand.

48. Why are a watering can, a syringe, or a clothes sprinkler good for watering a bowl garden?
1) They are in every home.
2) They hold the right amount of water.
3) They give a fine spray.
4) They are small enough to go in the bowl.

49. In what way is a north window best for plants from the woods?
1) North windows are warmer than others.
2) Woodland plants face north.
3) Most woods are in the north.
4) It has light but little sun.

50. Which of these tells best the kind of conditions under which woodland plants grow?
1) Cool and dry
2) Cool and moist
3) Hot and wet
4) Hot and dry
Last summer our family visited the well-known site of Man and His World in Montreal. If the explorer Champlain were to sail his ship up the St. Lawrence River today, he would be surprised to find an island that was not there in 1611. Work began in 1964 to build the island of Notre Dame, which covers 400 hectares. It was created out of 23 million tonnes of rock and soil dredged from the bottom of the river and carted from the shore by trucks. The new island and nearby land were beautifully landscaped in time for the opening of the World Exposition in Montreal in 1967. Since then millions of people have visited the natural and man-made islands in the St. Lawrence River.

51. How long did it take to build the new island in the St. Lawrence River?
   1) 3 years  3) 67 years
   2) 25 years  4) over 300 years

52. What makes the island so attractive?
   1) Rocks and soil
   2) Millions of people
   3) Being in Montreal
   4) Beautiful trees and shrubs

53. Why would Champlain be surprised to find Isle Notre-Dame?
   1) It was not yet built.
   2) He did not visit all the islands.
   3) It was used for a world exposition.
   4) He did not know an island could be built.

54. How big is the man-made island?
   1) The largest island in the St. Lawrence River
   2) 23 million hectares
   3) 400 hectares
   4) The information is not given.

55. What would be a good name for this story?
   1) "Our Summer Travels"
   2) "A Visit To Expo 67"
   3) "A Trip to a Famous Spot"
   4) "How Times Have Changed"

Fall Music
Pitter on the housetop,
Patter on the pane,
Patter, tap, and whisper
On the gravel in the lane.
Not the swish of snowflakes.
Not the splash of rain,
But the plip, plop, whisper
Of the autumn leaves again.

56. What is making the "pitter" and "patter" in the poem?
   1) Rain on the roof
   2) Snowflakes coming down
   3) Leaves falling
   4) Small animals running

57. When does the reader find out what is making the noise?
   1) In the first line
   2) In the first stanza
   3) In the fifth line
   4) In the last line

58. Where do the noises that "patter on the pane" happen?
   1) On the roof
   2) At the window
   3) On a path
   4) At the door

59. What does the word "whisper" mean in the poem?
   1) Someone is telling a secret.
   2) Someone is walking in the lane.
   3) Leaves are sliding along the lane.
   4) Gravel stones are being spread.

60. How often does the poet hear the "patter, tap, and whisper"?
   1) He listens to them during a certain season.
   2) He hears them every time it rains or snows.
   3) They are new to him.
   4) He hears them all the time.
Do you know about a river that fights the ocean? One that does is the Amazon, one of the great rivers of the world. You may know that this river is in South America. It runs west to east, roughly along the equator, almost from the Pacific Ocean to the Atlantic, mostly through dense jungle. It is 6300 km long and is fed by 1100 other rivers and streams, its tributaries. At its mouth it is more than 65 km wide, and so powerful that its yellow water pushes more than 160 km into the Atlantic before mixing with the ocean water. In fact, it carries the most water of any river system in the world. This is how it fights with the ocean: when the ocean tide is rising, salt water runs into the river. At very high tide, salt waters often move as far as 800 km inland. Sometimes the tide comes in waves that break near the mouth of the river, and then the Amazon fights back. Its own waters are so strong that they push against the ocean waves. But the waves are strong, too, and they push back. The result is a great rising wave of the two fighting waters, which may be 6 m high. This wave may travel 160 km or more up the river before it comes crashing down. It makes such a roar that people on the river or the shores can hear it coming and get out of the way. The people in South America call this battle wave the pororoca.

The Amazon is not the only river that fights the ocean. In other parts of the world, the wave of river and ocean meeting is known as bore, from an Old Norse term meaning wave. The pororoca of the Amazon is one of the most famous.

61. Why is the river in the article called the Amazon?
   1) It lies along the equator.
   2) It is very big and powerful.
   3) Its source is the Amazon Mountains.
   4) The article does not say.

62. The banks of the Amazon are mostly covered with
   1) salt.
   2) plants.
   3) sand.
   4) huts.

63. In the article it is stated that the Amazon River system ranks first in
   1) length.
   2) number of tributaries.
   3) amount of water moved.
   4) speed of water flow.

64. Which fact in the article indicates that the Amazon is in a hot climate?
   1) It starts near the Pacific Ocean.
   2) It is in South America.
   3) It is 6300 km long.
   4) It runs close to the equator.

65. What is the purpose of the first paragraph?
   1) To describe the Amazon River
   2) To explain what a pororoca is
   3) To tell why the article was written
   4) To give the history of the Amazon River

66. A “tributary” is which of these?
   1) A river that runs into the ocean
   2) A stream that runs into another stream
   3) A river that runs a great distance
   4) An ocean that is fed by a river

67. What is told first about the pororoca?
   1) How the river meets the tide
   2) How far it may travel
   3) The sound it makes
   4) How high it may be

68. The cause of a bore is most like which of the following?
   1) Lightning striking a tall building
   2) A tree crashing down in a windstorm
   3) A semi-trailer truck travelling on a flatcar of a train
   4) A head-on crash of two cars

69. What happens to the pororoca?
   1) It travels up the river, breaks down, and is carried back down the river to the sea.
   2) It travels up the river and floods the land.
   3) It travels out 160 km or so into the ocean and mixes with the ocean water.
   4) It goes up into the air, evaporates, and falls again as rain.

70. Which is given as a cause of the pororoca?
   1) The time of the ocean tide
   2) The depth of the river water
   3) The way the tide comes in
   4) Hurricanes along the coast
"Save your Christmas trees," read the poster. "Members of the Junior Nature Club will pick them up January 2."

"What do you do with old dry trees?" Mrs. Hawkins asked Bill Tompkins, when he came to get her tree. "They're surely not good for anything but a bonfire."

"Oh, no," answered Bill. "They're important conservation tools. We plan to take the trees we collect to the country. There we'll stack them up like teepees in gullies or windblows. The trees make fine homes for birds and small animals during the winter. Rabbits especially like them. By March, the trees will have settled down. Then they will keep the soil from washing or blowing away. We can do two things at once: help wildlife and prevent erosion."

"There's one more thing your club does," added Mrs. Hawkins.

"What's that?" asked Bill.

"You help clean up our town," she replied. "Thank you."

71. Why did Mrs. Hawkins thank Bill for getting her tree?
1) He was helping wild animals.
2) He was helping to stop soil from blowing or washing away.
3) He was helping her clean her house.
4) He was helping to make the city neat.

72. When would the trees be most useful in helping to stop erosion?
1) In summer
2) In winter
3) In spring
4) In fall

73. How long would it take the stacked trees to settle down?
1) A few days
2) A couple of weeks
3) Several months
4) An entire year

74. What was the club's main goal in collecting the trees?
1) To clean up the town
2) To help preserve nature
3) To build a big bonfire
4) To beautify the countryside

75. What would be the main purpose of placing trees in gullies?
1) To keep the dirt from washing away
2) To keep the dirt from blowing away
3) To provide homes for rabbits
4) To decorate bare spots in the country

76. How would the trees help prevent erosion?
1) They would enrich the soil.
2) They would hold the soil in place.
3) They would provide places for animals to live.
4) They would keep the country looking neat.

77. How would the stacks of trees look?
1)  
2)  
3)  
4)  

78. Where was the club going to put the trees?
1) Near farmhouses in the country
2) Near rabbit holes
3) In unprotected areas
4) Back in the forest

79. When did the club collect the trees?
1) The day after Christmas
2) About a week after Christmas
3) Several weeks after Christmas
4) The story gives no hint.
Pre-Treatment Cloze Test

Diamonds

Instructions to Teachers

Please administer this test before you begin any instruction with the cloze procedure lessons. The objective is to see how well the students are able to complete cloze passages before they receive special instruction regarding the cloze procedure. We will administer a similar test when the instruction period is completed. The students' responses to these tests will help us determine the effectiveness of the treatment to which students will be exposed over the next several weeks. Please do not give the students any instruction or assistance in regards to how they might establish what the missing words are.

Time: 25 minutes

Instructions to Students

I have a short story about diamonds. Some of the words have been removed. Please see how many of the words you can replace. If you are finished before time is up, please read something until others are finished or until I say stop. Do as well as you can.
Diamonds

Stones and rocks that we find on the beach may look pretty, but they are not valuable. We take them to a and sell them for .

Diamonds look like small and rocks until they cut and polished; then sparkle and shine. Diamonds beautiful, but they are to find. That is they are worth so money.

Cutting and polishing rough diamonds makes the gems and glint like fire, cutting a diamond is difficult job. A diamond so hard that the thing that will cut is another diamond. The cutting machines have to diamond cutting blades. Also, the diamond is cut wrong way, it is and then it is nothing. One diamond cutter was once asked to a very valuable diamond so scared he might it the wrong way he fainted onto the .

The purest diamonds have colour at all. If dropped one into a of water, it would to disappear. This sort diamond is the most . Other diamonds not quite valuable have shades of, pink, brown, and black them.

The best diamonds used in jewellery. They made into rings and , and of course--crowns.
Post-Treatment Cloze Test

Nickel

Instructions to Teachers

Please administer this cloze test immediately after completion of the cloze lesson passages. The objective of this test is to see how well the students can complete the cloze passage after they have had experience with contextual aids. The students' responses to this test will help us determine the effectiveness of the treatment to which students have been exposed over the past several weeks. Please do not give the students any instruction or assistance.

Time: 25 minutes

Instructions to Students

I have a short story about nickel. Some of the words have been removed. Please see how many of the words you can replace. If you are finished before time is up, please read something until the others have finished or until I say stop. Do as well as you can.
Nickel

Nickel is a metal obtained from rock known as ore. Along the nickel in the are thirteen other elements uses which range from eyes to valuable jewellery. have discovered ways to the nickel as well the other thirteen elements the ore. The discovery more and more uses the elements found in ore has made it more .

The nickel ore locked up by Nature under the surface of earth. Like anything else is locked up--such money in a safe--ore is difficult to at. Then when the has been removed from , there is another job of removing the from it.

When the is brought up to surface it looks like chunks of rock. Hidden these chunks is the and other valuable metals begin their journey through long process which finally the shiny white metal plays such an important in our daily lives.

chunks of rock are into a crusher that reduces into small pieces a of an inch or . The ore then goes the grinding mills in the pieces are ground a fine sand. The is now in a that valuable elements can separated.

The fine sand put into large tanks which water and various are added. The mixture water and chemicals causes various metals to float the top where they can be skimmed off. This is called "flotation."
Post-Treatment Robertson Written Connectives Test

Instructions to Teachers

Please administer this connectives test immediately after the completion of the cloze passage lessons. The objective of this test is to see how well the students can complete sentences, with connectives removed, after they have had experience with use of connectives. There are a total of twenty-one sentences with one, two, or three connectives removed from the sentences. The students' responses to this test will help us establish the effectiveness of the treatment to which the students have been exposed over the past few weeks. Please do not give the students any instruction or assistance.

Time: 30 minutes

Instructions to Students

I have a number of sentences which have some words removed. Please read each sentence carefully and see if you can determine which word best completes the sentence. The words that have been removed are the same types of words that you have been using over the last several weeks when you completed the short stories. Work as carefully as you can. If you are finished before time is up please read something until others have finished or until I say stop. Do as well as you can.
1. "She can't hear the organ ____________ she puts her fingers in her ears," said Bill.

2. They must realize ____________ there is a lot of gold here ____________ will be a great fortune for me.

3. The world did not know ____________ a ship could make a long haul, ____________ they did not believe it ____________ the steamers devoured such mountains of coal.

4. Never once did he complain about the pain, ____________, at times it was so intense, ____________ he had to be helped to dress in the mornings.

5. The house was covered with water when the river flooded. ____________ the furniture was flooded.

6. ____________ the soldiers saw the king's grief, they knew ____________ his daughter must be found.

7. ____________ the school at ____________ they learned to play football defeated them many times.

8. Carl paddled straight against the current and hoped ____________ he could crawl up to the place ____________ Jim and the lamb were awaiting rescue.

9. Sam laughed ____________ Jane tumbled into a mound of wet snow.

10. Anyway we need not carry her at all, ____________ they are taking her by car.

11. They hurried back to the farm ____________ Tom was learning to rope horses.

12. The deer was friendly, ____________ he took the bread out of our hands.

13. ____________ indignation flooded his heart for a minute, Arthur showed no anger.

14. "Will you catch the rabbit?" called the old man to the boys ____________ were watching it in the garden.

15. "I've eaten my breakfast," Alice replied in an offended tone, "___________ I'm not very hungry."
16. "You need not run so fast Bob," she advised. ____________
Joe and Howard added, "Run faster."

17. The two children were both ashamed. ____________ each child
still wanted to have his own way.

18. This time Bill concentrated his attention on the honey,
___________ the bees became angry.

19. One cannot always be a hero, ____________ one can always be a.
man.

20. The streams are dry ____________ there has been little rain.
Appendix B

Instructions to Teachers; Cloze Exercise Passages;
and Teachers' Keys
Statement of Instructions

General Statement to Teachers in Treatment Groups 1, 2, 3, and 4, Regarding Cloze Procedure and Its Use in the Present Study

The cloze procedure is a technique which involves the removal of words from a passage of continuous prose. The words removed are usually on an every nth word basis. However, there are times when it might be desirable to remove particular words or special word classes. If this non-random procedure is used, then the cloze procedure is referred to as a modified cloze procedure. This study in which you are participating is an example of the modified cloze procedure.

The cloze procedure was developed by Taylor (1953) for the purpose of measuring students' reading abilities or reading levels. Since that time a number of researchers have attempted to find other applications for the use of the cloze. One of these was the development of reading comprehension.

This present study focuses on comprehension development. The cloze procedure, as used in this study, will attempt to develop a knowledge of contextual aids. It is hypothesized that the comprehension skills will improve if children acquire a better understanding of contextual clues.
Statement of Instructions

Teaching Instructions to Teachers in Treatment Groups 1, 2, 3, and 4

Under your supervision and direction children in your class will be completing cloze exercises over the next several weeks. The purpose of the cloze exercises is to give your students an opportunity to use new materials that are designed to provide practice in learning and using selected contextual clues which are called Idea Clues and Presentation Clues. In turn, it is hypothesized that a better understanding of the function and meaning of connectives will enhance the growth and development of comprehension skills and abilities.

Your duties as a teacher participating in this study are to:
1. read any instructions as necessary before the students begin work,
2. answer any general questions the students might have that relate to the lessons,
3. distribute and collect the cloze exercises,
4. engage students in an indepth discussion, if in Treatments Groups 1 and 2, regarding reasons why a particular word was or was not a suitable replacement,
5. correct, with the students, their response to cloze exercises without indepth discussion of responses if in Treatment Groups 3 and 4,
6. record students' scores on the specially designed score sheets,
7. collect and retain all the lessons completed by the students.

Thank you for your participation and cooperation.
Instructions for Teachers Participating in Treatment Groups 1 and 2

For the next several weeks you will be administering the completion of cloze passage lessons with noun/verb or connective deletions. Besides the assistance the students obtain from the Contextual Aid Chart, they will receive intensive instruction from you.

Through a process of randomization you have been assigned to a treatment group that requires intensive teaching. When the students have completed a cloze passage lesson you will then involve the students in an in-depth discussion of how they used or might have used contextual aids to determine which noun/verb or connective had been deleted from the cloze passage.
Statement of Instructions

Instructions for Teachers Participating in Treatment Groups 3 and 4

For the next several weeks you will be administering the completion of cloze lessons with noun/verb or connective deletions. The students will each have a Contextual Aid Chart which is designed to assist them in selecting the word that has been removed from the passage.

Through a process of randomization you have been assigned to a treatment group that will not involve intensive teaching. When the students have completed a cloze passage lesson you will correct the lessons with them, but you will not be required to engage the students in an indepth discussion of how contextual aids might be used to assist in selecting the correct noun/verb or connective that has been deleted from the passage.
Statement of Instructions

Instructions for Students Completing Cloze Passages in Treatment Groups 1 and 2

For the next few weeks you will be reading short stories that have some words removed. When you have completed replacing the missing words we will discuss the words you have written into the blanks. We will also discuss how you decided on the particular words that you chose. We will also discuss how you might improve in your use of the Contextual Aid Chart that each of you have.

I think you will enjoy the short stories that were selected for the exercises. There is no pass or fail on these lessons. Do not be afraid to take a chance on the selection of a word. The idea is to see how well you can use the words and sentences around the blank to help you select a word that you think is appropriate. Please use the Contextual Aid Chart as much as you can.
Statement of Instructions

Instructions for Students Completing Cloze Passages in Treatment Groups 3 and 4

For the next few weeks you will be reading short stories that have some words removed. I would like you to read the stories and put in a word where you see the blanks. When you have completed replacing the missing words we will discuss some of your choices. Use your Contextual Aid Chart to help you make your selection.

I think you will enjoy the short stories that were selected for the lessons. There is no pass or fail on these lessons. I would like you to replace words in each of the blanks. Do not be afraid to take a chance on the selection of a word. The idea is to see how well you can use the words and sentences around the blank to help you select a word that you think is appropriate. Please use your Contextual Aid Chart as much as you can.
Tito and his dog Bimbo lived (if you could call it living) under the city wall where it joined the inner gate. They really did not live there; they just slept there. They lived anywhere. Pompeii was one of the gayest of the old Roman towns, but although (1) was never an unhappy boy, he was not a merry one. The streets were always lively with shining chariots and bright red trappings; the open-air theatres rocked with laughing crowds; sham battles and athletic sports were free for the asking in the great stadium. Once a (2) the emperor visited the city, and the fireworks and other forms of entertainment lasted for (3) . But Tito (4) none of these things, for he was blind—had been since (5) . He was known to everyone in the poorer parts of the town. No one could say how old he was; no one remembered his parents; no one could tell where he (6) from. Bimbo was another mystery. As (7) as people could remember seeing Tito—several years at least—they had seen Bimbo. The dog never left his side. He was not only a watchdog but (8) and father to Tito.

Did I say Bimbo never left his master? (Perhaps I had better say "comrade," for if anyone was the master, it was Bimbo.) I was wrong. Bimbo did leave his master three times a day. It was a custom understood between boy and dog since the beginning of their (9) and the way it worked out was this:

Early in the morning, shortly after (10) , Bimbo would disappear. When Tito awoke, Bimbo would be sitting quietly at his side, his ears cocked, his stump of a tail tapping the ground, and a fresh baked loaf of bread—more like a large round roll—at his feet. Tito would stretch himself, Bimbo would yawn, and they would breakfast.
### Contextual Aids for the Passage—The Dog of Pompeii

#### Idea Clue Deletions

<table>
<thead>
<tr>
<th>Deleted Word</th>
<th>Contextual Clue</th>
<th>Explanation</th>
<th>Alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Tito</strong></td>
<td>Comparison/Contrast</td>
<td>While the town of Pompeii was gay, not everybody was totally happy. The word <em>but</em> signals a comparison/contrast relationship. The reader is told that there is a boy, not unhappy, but also not exactly merry. The reader would establish that the unhappy boy was Tito. The reader has previously read the name of the boy in the introductory sentence.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Past Experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2. year</strong></td>
<td>Time</td>
<td>The word <em>once</em> signals a time relationship. The reader is told the emperor visited the city during which time many festivities were held. The words &quot;once a&quot; signal the idea that the visit was one in a particular period of time—thus once a year.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>day</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>week</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>month</td>
</tr>
<tr>
<td><strong>3. days</strong></td>
<td>Description/Time</td>
<td>The festivities lasted for a period of time. The word <em>for</em> suggests to the reader there is a description of how long the entertainment lasted. The reader would know that most festivities last for a number of days.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Past Experience</td>
<td></td>
<td>weeks</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>months</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>years</td>
</tr>
<tr>
<td><strong>4. saw</strong></td>
<td>Comparison/Contrast</td>
<td>While the town was merry and many events were taking place, Tito was not able to see the things happening. The word <em>but</em> signals the reader to look for a contrasting situation—the fact that Tito could not see the events. The word <em>blind</em> also provides a clue that the necessary word is <em>saw</em>.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deleted Word</td>
<td>Contextual Clue</td>
<td>Explanation</td>
<td>Alternative</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>5. birth</td>
<td>Time Relationship</td>
<td>The sentence states that Tito was blind. The word <em>since</em> provides a signal that Tito was blind from a particular date or time in his life. The blindness began at a particular time. Using this time clue, and relying on past experience, the reader establishes that many children are born blind and thus are blind since birth.</td>
<td></td>
</tr>
<tr>
<td>6. came</td>
<td>Place Relationship</td>
<td>The word <em>where</em> signals a place relationship. The word &quot;from&quot; is also a signal that place is involved. With these clues the reader would establish that the people did not know the place where Tito originated or the place from where Tito came.</td>
<td>arrived</td>
</tr>
<tr>
<td>7. long</td>
<td>Time Relationship</td>
<td>The word <em>as</em> suggests a passage of time. The sentence suggests that people seeing Tito over a period of several years also remember seeing Bimbo. The length of time that they could remember seeing Tito they also saw the dog. The reader uses the clue as to establish a time relationship and also through familiar expression establishes the word <em>long</em> is the correct choice.</td>
<td></td>
</tr>
<tr>
<td>8. mother</td>
<td>Comparison/Contrast</td>
<td>The word <em>but</em> establishes a comparison relationship. The reader is told that Bimbo was a constant companion and was Tito's watchdog. But he was more than a watchdog—he was also Tito's parents, a father and more</td>
<td></td>
</tr>
<tr>
<td>Deleted Word</td>
<td>Contextual Clue</td>
<td>Explanation</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>friend</strong></td>
<td><strong>Time Relationship</strong></td>
<td>The boy and the dog had a custom that had been part of their lives for a particular period of time. The word since signals a time relationship. The word beginning indicates that this custom originated at the beginning of something--since the beginning of their friendship.</td>
<td></td>
</tr>
<tr>
<td><strong>dawn</strong></td>
<td><strong>Time Relationship</strong></td>
<td>The reader is informed that early in the morning, Bimbo disappears. The word after signals that he disappears at a particular time--after something occurs. The reader would establish, from the remainder of the paragraph that Bimbo leaves to get food for breakfast. From past experience it can be established that he would need some light and that people would have to be on the job baking bread. Thus, it can be established that Bimbo would disappear shortly after dawn.</td>
<td></td>
</tr>
</tbody>
</table>
The Dog of Pompeii

Presentation Clue Deletions

Tito and his dog Bimbo lived (if you could call it living) under the city wall where it joined the inner gate. They really did not live there; they just slept there. They lived anywhere. Pompeii was one of the gayest of the old Roman towns, although Tito was never an unhappy boy, he was not exactly a merry one. The streets were always lively with shining chariots and bright red trappings; the open-air theatres rocked with laughing crowds; sham battles and athletic sports were free for the asking in the great stadium. A year the emperor visited the city, and the fireworks and other forms of entertainment lasted days.

Tito saw none of these things, for he was blind —had been birth. He was known to everyone in the poorer parts of the town. No one could say how old he was; no one remembered his parents; no one could tell he came from. Bimbo was another mystery. Long as people could remember seeing Tito—several years at least—they had seen Bimbo. The dog never left his side. He was not only a watchdog, mother and father to Tito.

Did I say Bimbo never left his master? (Perhaps I had better say "comrade" for if anyone was the master, it was Bimbo.) I was wrong. Bimbo did leave his master three times a day. It was a custom understood between boy and dog the beginning of their friendship, and the way it worked out was this:

Early in the morning, shortly dawn, Bimbo would disappear. When Tito awoke, Bimbo would be sitting quietly at his side, his ears cocked, his stump of a tail tapping the ground, and a fresh-baked loaf of bread—more like a large round roll—at his feet. Tito would stretch himself, Bimbo would yawn, and they would breakfast.
### Teacher's Key

**Contextual Aids for the Passage—The Dog of Pompeii**

#### Presentation Clue Deletions

<table>
<thead>
<tr>
<th>Deleted Word</th>
<th>Contextual Clue</th>
<th>Explanation</th>
<th>Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. but</td>
<td>Comparison/Contrast</td>
<td>The sentence states that Pompeii was a very gay town. In contrast, while Tito was not totally unhappy he was not exactly a merry boy. The reader would grasp the idea that a contrasting situation exists between the gaiety of the town and the &quot;not exactly&quot; merry state of the boy.</td>
<td></td>
</tr>
<tr>
<td>2. once</td>
<td>Time Relationship</td>
<td>The word year suggests a time relationship—a time when the emperor visited the city. From past experience the reader would probably establish the idea that the emperor would probably visit the city once a year.</td>
<td>twice</td>
</tr>
<tr>
<td>3. for</td>
<td>Description/Time</td>
<td>The visit of the emperor prompted festivities and entertainment. The word days signals the reader to supply a word that describes the condition of the entertainment lasting a number of days. The word that conveys the idea is for.</td>
<td>several</td>
</tr>
<tr>
<td>4. but</td>
<td>Comparison/Contrast</td>
<td>While the city engages in many activities of sports and entertainment, the boy, Tito, contrastingly is not able to see any of these things, he was blind. The word blind signals the idea that many people see and enjoy what is going on, Tito, in contrast, is not able to see the different activities. The</td>
<td></td>
</tr>
<tr>
<td>Deleted Word</td>
<td>Contextual Clue</td>
<td>Explanation</td>
<td>Alternative</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>5. <em>since</em></td>
<td>Time</td>
<td>The reader is provided with the information that Tito is blind. The word <em>birth</em> signals the idea that this is the time that blindness began. The choice of words to indicate time or length of blindness is <em>since</em>.</td>
<td>from</td>
</tr>
<tr>
<td>6. <em>where</em></td>
<td>Place</td>
<td>People knew very little about Tito—age, parents, etc. Also, they could not establish his origin—<em>where</em> he came from. The words &quot;came from&quot; signal the reader to select the applicable word to convey this idea—<em>where</em> completes the idea.</td>
<td></td>
</tr>
<tr>
<td>7. <em>as</em></td>
<td>Time/Familiar Expression</td>
<td>While Tito was one mystery, the author states that Bimbo was another mystery. People always remember seeing the boy and the dog together. The word <em>long</em> indicates a passage of time. To complete the idea the reader would have to use the word <em>as</em>. &quot;As long as&quot; is a commonly used expression.</td>
<td></td>
</tr>
<tr>
<td>8. <em>but</em></td>
<td>Comparison/Contrast</td>
<td>The reader is provided with the information that Tito did not have parents that were present. The sentence states that not only was Bimbo a watchdog, <em>but more</em>—he was Tito's mother and father as well. To establish the comparison/contrast situation, the word <em>but</em> is necessary.</td>
<td></td>
</tr>
<tr>
<td>Deleted Word</td>
<td>Contextual Clue</td>
<td>Explanation</td>
<td>Alternative</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>9. since</td>
<td>Time</td>
<td>The boy and the dog had a custom that had been established when they first became friends. The words &quot;the beginning of their friendship&quot; signals to the reader that the custom between the boy and dog had started at the beginning of their friendship—since the beginning.</td>
<td></td>
</tr>
<tr>
<td>10. after</td>
<td>Time</td>
<td>The sentence states that it is early in the morning that Bimbo disappears. Specifically how early in the morning is established by the words &quot;shortly&quot; and &quot;dawn.&quot; The word shortly indicates to the reader that it is a time of morning that is very close to dawn. The reader would establish that it was shortly before or shortly after dawn. The fact that Bimbo had a freshly baked loaf in his mouth might indicate it would be after dawn.</td>
<td>before</td>
</tr>
<tr>
<td>Idea Clue</td>
<td>Presentation Clue</td>
<td>Explanation</td>
<td>Example</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Causes/</td>
<td>as, because, for,</td>
<td>Cause/effect means something happens because/something. The presentation</td>
<td>They did not go outside because it was too cold.</td>
</tr>
<tr>
<td>Effect</td>
<td>since, so, but</td>
<td>clues are the words that signal the cause/effect relationships.</td>
<td></td>
</tr>
<tr>
<td>Comparison/</td>
<td>as, then, or, but,</td>
<td>To make thing clearer or more interesting we often compare or contrast</td>
<td>They lost the game although they were a bigger and better team.</td>
</tr>
<tr>
<td>Contrast</td>
<td>while, however,</td>
<td>events or objects. The presentation clues are the words that signal the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>besides, so,</td>
<td>comparison/contrast relationship.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(al)though</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>for, then, that,</td>
<td>Words and statements are described in another way to help clarify what the</td>
<td>Many cars have a design that makes them pleasing to look at.</td>
</tr>
<tr>
<td></td>
<td>which, who, how,</td>
<td>author is attempting to tell us.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>so</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>as, after, before,</td>
<td>In many cases the author describes something in a way that involves a time</td>
<td>It wasn't until the reading of the will that Henry discovered how rich he was.</td>
</tr>
<tr>
<td>Relationship</td>
<td>since, until,</td>
<td>relationship. The presentation clues are the words that signal time</td>
<td></td>
</tr>
<tr>
<td></td>
<td>when, while, once,</td>
<td>relationships.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>now, from, from</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Place</td>
<td>where, there,</td>
<td>The author will use particular words that establish a relationship of people</td>
<td>They finally reached the exact spot where the battle took place.</td>
</tr>
<tr>
<td>Relationship</td>
<td>here, near, far,</td>
<td>or events to a specific place. Presentation clues are the words that signal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>from, under,</td>
<td>place relationships.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>above, beneath</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past</td>
<td></td>
<td>In some cases these are particular words or expressions that you know from</td>
<td>The men sat around chewing the fat.</td>
</tr>
<tr>
<td>Experience/</td>
<td></td>
<td>your earlier experiences such as reading, TV, talking, movies.</td>
<td></td>
</tr>
<tr>
<td>Familiar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expression</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix C

Monitors' Checklist; Teachers' Score Sheets; Teachers' Comments; and Teachers' Questionnaire
Monitor Checklist

School: ____________________ Teacher: ____________________

Date: ____________________ Time of Class: ____________

Treatment Group: __________

<table>
<thead>
<tr>
<th>Check List Items</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How does teacher introduce lesson?</td>
<td></td>
</tr>
<tr>
<td>Discusses passage ________</td>
<td></td>
</tr>
<tr>
<td>Does not discuss passage ________</td>
<td></td>
</tr>
<tr>
<td>Amount of time for introduction _______ minutes</td>
<td></td>
</tr>
<tr>
<td>2. How much time is allowed for completion of a cloze passage?</td>
<td></td>
</tr>
<tr>
<td>Time allowed _______ minutes</td>
<td></td>
</tr>
<tr>
<td>3. Contextual Aids (for Treatments 1 and 2)</td>
<td></td>
</tr>
<tr>
<td>a. Does teacher explain what contextual aids are present and how they should</td>
<td></td>
</tr>
<tr>
<td>be used to identify missing word?</td>
<td></td>
</tr>
<tr>
<td>Yes _____ No _____</td>
<td></td>
</tr>
<tr>
<td>b. Does teacher allow children to vocalize responses?</td>
<td></td>
</tr>
<tr>
<td>Yes _____ No _____</td>
<td></td>
</tr>
<tr>
<td>4. Contextual Aids (for Treatments 3 and 4)</td>
<td></td>
</tr>
<tr>
<td>a. Does teacher discuss specific contextual aids?</td>
<td></td>
</tr>
<tr>
<td>Yes _____ No _____</td>
<td></td>
</tr>
<tr>
<td>b. Does teacher allow children to verbalize responses?</td>
<td></td>
</tr>
<tr>
<td>Yes _____ No _____</td>
<td></td>
</tr>
<tr>
<td>5. Did teacher complete the entire passage during the discussion period?</td>
<td></td>
</tr>
<tr>
<td>Yes _____ No _____</td>
<td></td>
</tr>
<tr>
<td>How much of the passage was completed during the discussion period?</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Control Group</td>
<td></td>
</tr>
<tr>
<td>Is teacher teaching contextual aids similar to experimental groups?</td>
<td></td>
</tr>
<tr>
<td>Yes _____ No _____</td>
<td></td>
</tr>
<tr>
<td>What reading activities are being done by the group?</td>
<td></td>
</tr>
</tbody>
</table>
# Teacher's Score Sheets

No. of Students: __________ Teacher's Name: __________

School: __________________

<table>
<thead>
<tr>
<th>Lesson Number</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student's Name</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lesson Number</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td>---------------</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Student's Name</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Teacher's Comments

Title of Selection:

Data of Presentation:

Name of Teacher:

Name of School:

Number of Students:

To the Teacher: Please make any comments you feel would be pertinent and beneficial to the study. The comments may centre on the Teacher's Keys, students' comments and reactions, your personal feelings, etc. Any comments you make will be welcome and will add immensely to the study.
Teacher's Questionnaire

Treatment Group: ____________ School: ____________
Name: _______________________

I. Teacher's Key
1. Were the explanations clear? Please indicate which explanations were unclear or confusing ________________________________
2. Could the explanations have been longer? shorter? _________________________________
3. Were the alternative choices sufficient in number? _________________________________
4. Was the format of the Teacher's Key such that it was clear and easy to follow? How would you recommend the Teacher's Key might be revised? _________________________________

II. Student's Contextual Aid Chart
1. Was the chart clear and easy for the students to follow? ___________________________
2. Were the explanations understood by the students? _________________________________
3. How might the format and explanations been developed so that the Contextual Aid Chart might have been more effective? _________________________________

III. The Lessons
Please make any comments regarding the lessons—effectiveness, length of passages, numbers of Idea Clues and Presentation Clues, etc. Please include a statement regarding your feelings about the study in which you participated. Make reference to frequency of presentation of lessons, duration of study, reaction of students to lessons, and other comments that you feel would contribute to further development and presentation of such lessons.
Appendix D

Tables of Means and Standard Deviations for

Treatment Groups and Ability Groups
Table 20
Pre-Experimental Means and Standard Deviations of the Five Treatment Groups as Measured by the Canadian Test of Basic Skills Level 10

<table>
<thead>
<tr>
<th>Treatment Groups</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Int. Tchng.</td>
<td>Int. Tchng.</td>
<td>n=110</td>
<td>n=115</td>
<td>n=67</td>
<td>n=67</td>
</tr>
<tr>
<td>Mean</td>
<td>52.4</td>
<td>53.7</td>
<td>53.4</td>
<td>51.2</td>
<td>48.0</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>10.8</td>
<td>8.9</td>
<td>9.1</td>
<td>8.1</td>
<td>9.4</td>
</tr>
</tbody>
</table>

Table 21
Post-Experimental Means and Standard Deviations of the Five Treatment Groups as Measured by the Canadian Test of Basic Skills Level 11

<table>
<thead>
<tr>
<th>Treatment Groups</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Int. Tchng.</td>
<td>Int. Tchng.</td>
<td>n=110</td>
<td>n=115</td>
<td>n=67</td>
<td>n=67</td>
</tr>
<tr>
<td>Mean</td>
<td>57.8</td>
<td>59.7</td>
<td>60.4</td>
<td>58.8</td>
<td>52.9</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>10.8</td>
<td>11.2</td>
<td>10.2</td>
<td>7.4</td>
<td>11.7</td>
</tr>
</tbody>
</table>
Table 22
Means and Standard Deviations for Crossed Ability and Treatment Groups (AB × TR) for Post-Canadian Test of Basic Skills Comprehension

<table>
<thead>
<tr>
<th>Treatment Groups</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Ability</td>
<td>n=43</td>
<td>n=56</td>
<td>n=32</td>
<td>n=23</td>
<td>n=19</td>
</tr>
<tr>
<td>Mean</td>
<td>65.2</td>
<td>65.9</td>
<td>66.8</td>
<td>64.0</td>
<td>59.6</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>9.0</td>
<td>7.4</td>
<td>7.4</td>
<td>6.4</td>
<td>1.2</td>
</tr>
<tr>
<td>Medium Ability</td>
<td>n=43</td>
<td>n=44</td>
<td>n=28</td>
<td>n=31</td>
<td>n=32</td>
</tr>
<tr>
<td>Mean</td>
<td>57.3</td>
<td>54.7</td>
<td>56.7</td>
<td>58.3</td>
<td>55.7</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>4.6</td>
<td>11.0</td>
<td>7.5</td>
<td>4.8</td>
<td>7.4</td>
</tr>
<tr>
<td>Low Ability</td>
<td>n=24</td>
<td>n=15</td>
<td>n=7</td>
<td>n=13</td>
<td>n=24</td>
</tr>
<tr>
<td>Mean</td>
<td>45.6</td>
<td>51.0</td>
<td>45.9</td>
<td>50.8</td>
<td>43.7</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>10.2</td>
<td>10.9</td>
<td>9.5</td>
<td>6.4</td>
<td>10.5</td>
</tr>
</tbody>
</table>
Table 23
Pre-Experimental Means and Standard Deviations of the Five Treatment Groups as Measured by the Pre-Cloze Comprehension Test

<table>
<thead>
<tr>
<th>Treatment Groups</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noun/Verb Connectives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Int. Tchn. n=110</td>
<td>20.59</td>
<td>20.23</td>
<td>20.87</td>
<td>20.51</td>
<td>19.79</td>
</tr>
<tr>
<td>Non-Int. Tchn. n=115</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>20.59</td>
<td>20.23</td>
<td>20.87</td>
<td>20.51</td>
<td>19.79</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>5.26</td>
<td>5.11</td>
<td>5.60</td>
<td>4.35</td>
<td>6.05</td>
</tr>
</tbody>
</table>

Table 24
Post-Experimental Means and Standard Deviations of the Five Treatment Groups as Measured by the Post-Cloze Comprehension Test

<table>
<thead>
<tr>
<th>Treatment Group</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noun/Verb Connectives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Int. Tchn. n=110</td>
<td>19.67</td>
<td>20.43</td>
<td>19.00</td>
<td>19.87</td>
<td>18.15</td>
</tr>
<tr>
<td>Non-Int. Tchn. n=67</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>19.67</td>
<td>20.43</td>
<td>19.00</td>
<td>19.87</td>
<td>18.15</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>5.68</td>
<td>5.67</td>
<td>5.07</td>
<td>4.80</td>
<td>5.48</td>
</tr>
</tbody>
</table>
Table 25

Means and Standard Deviations for Crossed Ability and Treatment Groups (AB × TR) for Pre-Cloze Comprehension Test (CCTI)

<table>
<thead>
<tr>
<th>Treatment Groups</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Noun/Verb</td>
<td>Connectives</td>
<td>Noun/Verb</td>
<td>Connectives</td>
<td>Connectives</td>
</tr>
<tr>
<td>High Ability</td>
<td>n=43</td>
<td>n=56</td>
<td>n=32</td>
<td>n=23</td>
<td>n=19</td>
</tr>
<tr>
<td>Mean</td>
<td>23.58</td>
<td>22.38</td>
<td>23.69</td>
<td>23.39</td>
<td>24.74</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>4.15</td>
<td>4.36</td>
<td>5.64</td>
<td>2.87</td>
<td>3.78</td>
</tr>
<tr>
<td>Medium Ability</td>
<td>n=43</td>
<td>n=44</td>
<td>n=28</td>
<td>n=31</td>
<td>n=32</td>
</tr>
<tr>
<td>Mean</td>
<td>20.39</td>
<td>19.11</td>
<td>18.61</td>
<td>20.26</td>
<td>20.81</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>4.52</td>
<td>4.75</td>
<td>4.42</td>
<td>3.83</td>
<td>4.29</td>
</tr>
<tr>
<td>Low Ability</td>
<td>n=24</td>
<td>n=15</td>
<td>n=7</td>
<td>n=13</td>
<td>n=24</td>
</tr>
<tr>
<td>Mean</td>
<td>15.58</td>
<td>15.47</td>
<td>17.00</td>
<td>16.00</td>
<td>14.59</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>4.39</td>
<td>4.73</td>
<td>2.94</td>
<td>3.79</td>
<td>5.56</td>
</tr>
</tbody>
</table>
Table 26

Means and Standard Deviations for Crossed Ability and Treatment Groups (AB x TR) for Post-Cloze Comprehension Test (CCT2)

<table>
<thead>
<tr>
<th>Treatment Groups</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Noun/Verb</td>
<td>Connectives</td>
<td>Noun/Verb</td>
<td>Connectives</td>
<td></td>
</tr>
<tr>
<td>High Ability</td>
<td>n=43</td>
<td>n=56</td>
<td>n=32</td>
<td>n=23</td>
<td>n=19</td>
</tr>
<tr>
<td>Mean</td>
<td>23.05</td>
<td>22.48</td>
<td>21.47</td>
<td>22.83</td>
<td>22.16</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>5.63</td>
<td>5.37</td>
<td>4.69</td>
<td>4.53</td>
<td>5.09</td>
</tr>
<tr>
<td>Medium Ability</td>
<td>n=43</td>
<td>n=44</td>
<td>n=28</td>
<td>n=31</td>
<td>n=32</td>
</tr>
<tr>
<td>Mean</td>
<td>19.07</td>
<td>17.84</td>
<td>17.29</td>
<td>19.52</td>
<td>18.36</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>3.51</td>
<td>5.51</td>
<td>4.39</td>
<td>3.48</td>
<td>4.54</td>
</tr>
<tr>
<td>Low Ability</td>
<td>n=24</td>
<td>n=15</td>
<td>n=7</td>
<td>n=13</td>
<td>n=24</td>
</tr>
<tr>
<td>Mean</td>
<td>14.71</td>
<td>17.40</td>
<td>14.57</td>
<td>15.46</td>
<td>14.67</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>4.98</td>
<td>2.87</td>
<td>3.60</td>
<td>4.54</td>
<td>4.73</td>
</tr>
</tbody>
</table>
Table 27
Means and Standard Deviations for Crossed Ability and Treatment Groups (AB x TR) for the Robertson Written Connectives Test

<table>
<thead>
<tr>
<th>Treatment Groups</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Ability</td>
<td>n=43</td>
<td>n=56</td>
<td>n=32</td>
<td>n=23</td>
<td>n=19</td>
</tr>
<tr>
<td>Mean</td>
<td>16.35</td>
<td>18.64</td>
<td>15.44</td>
<td>17.35</td>
<td>13.79</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>2.91</td>
<td>2.84</td>
<td>3.24</td>
<td>2.72</td>
<td>3.38</td>
</tr>
<tr>
<td>Medium Ability</td>
<td>n=43</td>
<td>n=44</td>
<td>n=28</td>
<td>n=31</td>
<td>n=32</td>
</tr>
<tr>
<td>Mean</td>
<td>14.63</td>
<td>15.36</td>
<td>11.79</td>
<td>16.13</td>
<td>12.31</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>3.56</td>
<td>3.56</td>
<td>3.85</td>
<td>3.79</td>
<td>3.39</td>
</tr>
<tr>
<td>Low Ability</td>
<td>n=24</td>
<td>n=15</td>
<td>n=7</td>
<td>n=13</td>
<td>n=24</td>
</tr>
<tr>
<td>Mean</td>
<td>12.79</td>
<td>14.53</td>
<td>10.14</td>
<td>14.31</td>
<td>8.25</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>3.53</td>
<td>3.58</td>
<td>2.91</td>
<td>3.25</td>
<td>2.85</td>
</tr>
</tbody>
</table>