INFORMATION TO USERS

This dissertation was produced from a microfilm copy of the original document. While the most advanced technological means to photograph and reproduce this document have been used, the quality is heavily dependent upon the quality of the original submitted.

The following explanation of techniques is provided to help you understand markings or patterns which may appear on this reproduction.

1. The sign or "target" for pages apparently lacking from the document photographed is "Missing Page(s)". If it was possible to obtain the missing page(s) or section, they are spliced into the film along with adjacent pages. This may have necessitated cutting thru an image and duplicating adjacent pages to insure you complete continuity.

2. When an image on the film is obliterated with a large round black mark, it is an indication that the photographer suspected that the copy may have moved during exposure and thus cause a blurred image. You will find a good image of the page in the adjacent frame.

3. When a map, drawing or chart, etc., was part of the material being photographed the photographer followed a definite method in "sectioning" the material. It is customary to begin photoing at the upper left hand corner of a large sheet and to continue photoing from left to right in equal sections with a small overlap. If necessary, sectioning is continued again — beginning below the first row and continuing on until complete.

4. The majority of users indicate that the textual content is of greatest value, however, a somewhat higher quality reproduction could be made from "photographs" if essential to the understanding of the dissertation. Silver prints of "photographs" may be ordered at additional charge by writing the Order Department, giving the catalog number, title, author and specific pages you wish reproduced.

University Microfilms
300 North Zeeb Road
Ann Arbor, Michigan 48106
A Xerox Education Company
GOULD, Kathryn Lewis, 1936-
RELATIONSHIPS OF CREATIVITY, READING
COMPREHENSION, INTELLIGENCE, AND RESPONSE TO
A LITERATURE SELECTION FOR FOURTH GRADE
INNER-CITY CHILDREN. [Pages 110-137, "Minnesota Tests of Creative Thinking" and "Gates-MacGinitie Reading Tests", not microfilmed at request of author. Available for consultation at The Ohio State University Library].

University Microfilms, A XEROX Company, Ann Arbor, Michigan
RELATIONSHIPS OF CREATIVITY, READING COMPREHENSION, INTELLIGENCE, AND RESPONSE TO A LITERATURE SELECTION FOR FOURTH GRADE INNER-CITY CHILDREN

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy in the Graduate School of The Ohio State University

By

Kathryn Lewis Gould, B.A., M.A.

The Ohio State University
1971

Approved by

Advisor
Department of Early and Middle Childhood Education
PLEASE NOTE:

Some pages may have indistinct print.

Filmed as received.

University Microfilms, A Xerox Education Company
ACKNOWLEDGMENTS

The writer wishes to recognize those who have assisted in this study:

Dr. Robert Emans, Major Advisor; Dr. Joseph Quaranta and Dr. Donald R. Cruickshank, sponsoring committee members who have all contributed many valuable suggestions. Dr. Charlotte S. Huck, committee member, who, by making available opportunities of working with a variety of inner-city schools, made possible some of my most valued learning experiences.

Mr. Kenneth Havens, principal; Essie Yuill, Barbara Drake, and Irma Taylor, for their patience and aid in collecting data.

# TABLE OF CONTENTS

ACKNOWLEDGMENTS ................................................................. ii
VITA .......................................................................................... iii
LIST OF TABLES ......................................................................... iv
INTRODUCTION ......................................................................... 1
Chapter

I. INTRODUCTION ...................................................................... 1

Background of the Problem
Statement of the Problem
Importance of the Study
Limitations of the Study

II. REVIEW OF THE LITERATURE ........................................... 23

Introduction
Importance of Creativity
Definitions of Creativity
Process of Creative Thinking
Studies Relating Creativity to Intelligence and Reading
Creativity and Socio-economic Status
Creativity and Black Children
Summary
Need for Research

III. THE PROCEDURES AND MATERIALS ................................. 50

Introduction
Population
Instrumentation
Data Analysis
Summary

IV. ANALYSIS OF THE DATA .................................................. 71

Introduction
Data Analysis
Summary
VITA

September 6, 1936 ........ Born - Lewisburg, Pennsylvania

1958 ....................... B.A., Chico State College, Chico, California

1958-1959 ................ Teacher, Davis Elementary Schools, Davis, California

1959-1968 ................ Teacher, Chico Unified School District, Chico, California

1966-1968 ................ Assistant Professor, Chico State College, Chico, California

1966-1968 ................ Director, Reading Center, Fairfield-Suisun Unified School District, Fairfield, California

1968 ....................... M.A., Chico State College, Chico, California

1968-1971 ................ Teaching Associate, Department of Early and Middle Childhood Education, The Ohio State University, Columbus, Ohio

PUBLICATIONS


FIELDS OF STUDY

Major Field: Early and Middle Childhood Education

Studies in Reading. Professor Robert Emans

Studies in Language Arts and Children's Literature. Professor Charlotte S. Huck

Studies in Teacher Education. Professor Donald R. Cruickshank
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Relationships of Reading Comprehension with Creative Thinking and Literature Response Scales with Intelligence Held Constant</td>
<td>74</td>
</tr>
<tr>
<td>2.</td>
<td>Relationships of Creative Thinking and Literature Response Scales with Intelligence Held Constant</td>
<td>75</td>
</tr>
<tr>
<td>3.</td>
<td>Relationships Between Intelligence and Scales of Creativity Variables</td>
<td>77</td>
</tr>
<tr>
<td>4.</td>
<td>Relationships Between Creative Thinking, Reading Comprehension, and Literature Response with Intelligence Held Constant</td>
<td>78</td>
</tr>
<tr>
<td>5.</td>
<td>Comparison of Boys and Girls Mean Ranks of Creative Thinking: Verbal</td>
<td>80</td>
</tr>
<tr>
<td>6.</td>
<td>Comparison of Boys and Girls Mean Ranks of Creative Thinking: Nonverbal</td>
<td>80</td>
</tr>
<tr>
<td>7.</td>
<td>Comparison of Boys and Girls Mean Ranks on Literature Response Instrument</td>
<td>81</td>
</tr>
<tr>
<td>8.</td>
<td>Inter-judge Reliability on Literature Response Instrument by Question</td>
<td>235</td>
</tr>
<tr>
<td>9.</td>
<td>Inter-judge Reliability on Literature Response Instrument by Scale</td>
<td>235</td>
</tr>
<tr>
<td>10.</td>
<td>Minnesota Tests of Creative Thinking: Verbal Total Scores Rank Order</td>
<td>237</td>
</tr>
<tr>
<td>11.</td>
<td>Minnesota Tests of Creative Thinking: Verbal Fluency Scores Rank Order</td>
<td>238</td>
</tr>
<tr>
<td>12.</td>
<td>Minnesota Tests of Creative Thinking: Verbal Flexibility Scores Rank Order</td>
<td>239</td>
</tr>
<tr>
<td>Table</td>
<td>Page</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>13. Minnesota Tests of Creative Thinking: Verbal Originality Scores Rank Order</td>
<td>240</td>
<td></td>
</tr>
<tr>
<td>14. Minnesota Tests of Creative Thinking: Nonverbal Total Scores Rank Order</td>
<td>241</td>
<td></td>
</tr>
<tr>
<td>15. Minnesota Tests of Creative Thinking: Nonverbal Fluency Scores Rank Order</td>
<td>242</td>
<td></td>
</tr>
<tr>
<td>16. Minnesota Tests of Creative Thinking: Nonverbal Flexibility Scores Rank Order</td>
<td>243</td>
<td></td>
</tr>
<tr>
<td>17. Minnesota Tests of Creative Thinking: Nonverbal Originality Scores Rank Order</td>
<td>244</td>
<td></td>
</tr>
<tr>
<td>18. Minnesota Tests of Creative Thinking: Nonverbal Elaboration Scores Rank Order</td>
<td>245</td>
<td></td>
</tr>
<tr>
<td>19. Literature Response Instrument Total Scores Rank Order</td>
<td>246</td>
<td></td>
</tr>
<tr>
<td>20. Literature Response Instrument Fluency Scores Rank Order</td>
<td>247</td>
<td></td>
</tr>
<tr>
<td>21. Literature Response Instrument Flexibility Scores Rank Order</td>
<td>248</td>
<td></td>
</tr>
<tr>
<td>22. Literature Response Instrument Originality Scores Rank Order</td>
<td>249</td>
<td></td>
</tr>
<tr>
<td>23. Literature Response Instrument Elaboration Scores Rank Order</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>24. Gates-MacGinitie Reading Comprehension Survey-D Scores Rank Order</td>
<td>251</td>
<td></td>
</tr>
<tr>
<td>25. Minnesota Tests of Creative Thinking: Nonverbal Interscale Correlation Coefficients</td>
<td>253</td>
<td></td>
</tr>
<tr>
<td>26. Minnesota Tests of Creative Thinking: Verbal Interscale Correlation Coefficients</td>
<td>253</td>
<td></td>
</tr>
</tbody>
</table>
Table 27. Minnesota Tests of Creative Thinking: Verbal and Nonverbal Interscale Correlation Coefficients ..................................... 254
28. Literature Response Instrument Interscale Correlation Coefficients ........ 254
29. Literature Response Instrument Summary Statistics ..................... 256
31. Minnesota Tests of Creative Thinking: Nonverbal Summary Statistics .... 257
32. Reading Comprehension and Intelligence Summary Statistics .......... 257
CHAPTER I
INTRODUCTION

All men have certain creative potential. This creative potential may appear as problems are solved in daily living. It may result in the solution of scientific or mathematical problems; the product may be in art, music or written form. The abilities to apply creative potential depend not only on particular personality traits, knowledge and experiences, but upon the opportunities given by parents, peers, and teachers to develop, understand, and use creative talents.¹

Mearns, in 1930, cautioned teachers to realize that creative potential exists in varying quality and quantity in all people and is easily accessible, but "unless we watch, and perhaps pray, the creative spirit dies within us, or retreats so far into the recesses of our being that it may come out only very seldom."² Too many schools appear cheerful, yet are places where the creative "wings" of children are "gradually and painlessly removed."³ In these schools


³Ibid, p. 251.
"When the creative spirit strives here and there to flutter, it becomes an activity that must be practiced in stealth, rarely with full approval of authorities."\(^4\) Thirty years later Torrance repeats these concerns by observing that, not only does creative talent often go unrecognized in the classroom, but "society in general is downright savage towards creative thinkers, especially when they are young."\(^5\)

In order for teachers to provide guidance rather than restrictiveness in encouraging the creative growth of children, they need to know about creativity, its process, and contributing factors. Once teachers recognize and respect the creative act they can better promote creative thinking within the classroom. They can carefully and subtly exploit creativity which is revealed as children live and learn in the classroom.\(^6\) They can better allow for individual differences in learning styles, motivation, and ability. It is this need to better understand and nurture the phenomenon of creativity with which this study is concerned.

Frequently the behavior of the highly creative child is considered undesirable by teachers without the teacher realizing the

\(^{4}\)Ibid.

\(^{5}\)Torrance. *Guiding Creative Talent*, p. 8.

possible explanations for a child's behavior. Gutman describes the creative individual as being inner-directed and unpredictable. The following personality traits are those which appear most frequently in these and other related literature describing the creative child:

1. Self-awareness and self-acceptance
2. Curiosity and awareness of environment
3. Independent thinking and working
4. Not overly close in a family unit
5. Open expression of feeling
6. Sensitivity
7. Persistence, often undertaking a difficult task in one area, while neglecting another area and working obsessively
8. Self-assertiveness
9. Often has individual values which are not usually identified with adult success, group identification, or leadership
10. Sense of humor and "unusual" ideas.

These characteristics can be seen as desirable; or can cause a child to alienate friends, confuse and frustrate parents, and be considered silly and deviant in his classroom behavior. Repression of the child's

---


creativity may result in an uncertain self-concept, lack of interest in learning, learning disabilities, behavior deviations, and a high degree of tension.\textsuperscript{9}

The need to recognize and understand creative ability becomes particularly important with the realization that creative abilities are present to some extent in every child. Thurston\textsuperscript{10} suggests that creative abilities exist in all persons and are inherited, but too often are uncultivated. In his studies of creative abilities he found a noticeable gap between what he terms "native potentialities," and a person's actual performance. The use of creative abilities is a factor Maslow\textsuperscript{11} finds necessary for a person to be fully self-actualizing. Individuals are taught to conform in their daily lives, in dress, books read, and leisure time activities.\textsuperscript{12} Education frequently emphasizes the right answer found through convergent thinking abilities which Guilford\textsuperscript{13} describes as requiring searching and thinking about many possible correct solutions or answers.

\begin{enumerate}
\item Torrance. \textit{Guiding Creative Talent}.
\item Maslow, Abraham H. "Emotional Blocks to Creativity," in \textit{A Source Book for Creative Thinking}.
\item Rogers, Carl A. "Toward a Theory of Creativity," in \textit{A Source Book for Creative Thinking}.
\end{enumerate}
According to Rogers, education needs to provide opportunities for growth in creative thinking in order to produce creative individuals who can make the "new and original adaptations" to their environment which are necessary in the changing world of today's society.

**Background of the Problem**

Children who grow into fully functioning persons should develop an awareness of the problems of life's daily stresses, and an ability to develop and test possible solutions. They should have ability to think of new ideas and expressions of one's self. Such abilities are aspects of creative thinking. They are not measured in the tasks of a traditional intelligence test. These abilities are not cultivated in tasks requiring the literal interpretation, evaluation, and recall of information, but rather in an environment which encourages curiosity, independence, and sustained thought. Creative thinking abilities can contribute to the acquisition of knowledge. They can appear in the personality and approaches used, for instance, by the top salespeople of a firm. Store saleswomen ranking in the top third for sales in their department also ranked higher on creativity tests than did

---


16 Aschner and Bish. Productive Thinking in Education, pp. 100-102.
low ranking saleswomen. Creative thinking abilities can make possible new ideas which find their products in such fields as science, mathematics, art, writing, and music. Results of creative thinking in these fields can be found in the scientific discoveries of Newton and Pasteur, the writings of Shakespeare, and the music of Mozart.

This investigation assumes the existence of creative thinking abilities within each child. Each individual is creative to some extent, because he must continually create solutions to problems. This is true of children as they devise ways to construct a playhouse, create a new game, or write an original story. It is with these creative abilities, intelligence, and children's reading ability that this study is concerned. Research such as that conducted by Torrance and Getzels and Jackson, indicates a low, positive relationship between factors of creativity and intelligence. These investigators conclude that creative and intellectual abilities exist independent of one another. This study is based on the hypothesis that these


19Ibid, pp. 10-11.


abilities are distinct mental operations which should be recognized as such by those concerned with the development and growth of children.

Opportunities to promote creative growth in children can occur through the use of reading as a stimulus for creative thinking. Creative reading, according to Torrance, involves being "sensitive to problems and possibilities" and missing elements in what one reads. Creative reading requires that the reader see new relationships, synthesize, redefine and build onto the reading selection; thus producing new possibilities and solutions. The addition of a new problem, event or character to think beyond a literature selection can be considered a creative act. Using an activity learned while reading a book to develop a new game can facilitate creative thinking. Creative response to reading occurs as the reader expands upon the ideas conveyed by the author's words. Such expansion, as revealed through a child's oral responses to a literature selection is one manifestation of creative thinking which this investigation seeks to study.

Questions concerning relationships between creative response to literature, verbal and nonverbal creativity, literal reading comprehension, and intelligence form the basis of this study. A search of

---

the literature concerning creativity revealed only three studies which investigate relationships between creative thinking and critical or creative reading. Stemmier analyzed the creative thinking processes used by a group of high intelligent and a group of high creative high school students who responded orally to problem solving situations stimulated by prose and poetry selections. She found differences in the use of both intellective and imaginative processes between the two groups. Although MacDougall considered critical (judging or evaluating what is read) rather than creative reading (elaborating or transforming what is read) is her investigation, she revealed a low, significant relationship (.05 level) between critical reading and creative thinking, which suggests that the two exist as distinct variables. Results of MacDougall's study also indicate that verbal creative thinking ability and critical reading were more closely related than nonverbal creative thinking and critical reading among upper elementary grade children. Separate measurement instruments were used by Roughton to assess literal reading

---


comprehension, critical reading, and creative reading abilities of high school students. When effects of these variables, creative thinking, and intelligence were studied, intelligence was found to be more closely related to each type of reading than was creativity. There was a slight trend for creativity to be more closely related to creative reading than to critical reading. Results of these three studies indicate that children bring and use different abilities in reading a written selection. These studies raise questions about what relationships exist between creative verbal and nonverbal thinking, literal reading comprehension, and ability to respond creatively to written selections when different groups of children are concerned.

Statement of the Problem

Most studies depend upon written tests of creativity, yet responses on written tests or even pencil and paper tests which involve no writing require sets of skills which may interfere with the subject's ability to communicate his creativity. The basis for verbal communication is oral; thus oral responses may help to identify creativity that is not communicated by subjects who are facile in written and other paper and pencil skills. Literature has not been utilized as a stimulus for creative response in studies investigating creative abilities of elementary school children. This study employs

a literature selection as a stimulus for creativity as manifested through oral responses. Creativity may be discovered through oral responses to literature and it may differ from creative ability measured through responses on a paper and pencil test. If so, it would indicate different aspects of creative potential which could be used as a basis for instruction.

There is a need for additional study and different measures for assessing creativity among children in lower socio-economic levels. Children from lower socio-economic homes perplex many teachers. They challenge many methods of instruction. Indeed, the research in creativity indicates that such children respond differently than children from higher socio-economic homes to present measures of creativity.27 Such measures, however, can provide teachers with an awareness of potentialities that might otherwise be unnoticed. Torrance points out a need to identify giftedness such as creative


thinking abilities especially "in culturally disadvantaged classes, minority groups, and the like." The present investigation recognized that need and attempted to study the creative thinking abilities of a group of lower socio-economic status black children as manifested through three measures: 1) verbal creativity through written response, 2) nonverbal creativity through pictures used as stimulus and response, and 3) creativity in oral responses to a literature selection.

Recognizing the need for additional ways to analyze certain creative and reading abilities, this study attempted to explore the following questions as they pertain to a group of lower status black children:

1. Is there a relationship between verbal creativity and reading comprehension?

2. Is there a relationship between nonverbal creativity and reading comprehension?

3. Is there a relationship between verbal creativity and creative oral responses to literature?

4. Is there a relationship between nonverbal creativity and creative oral responses to literature?

5. Is there a relationship between reading comprehension and creative oral responses to literature?

These questions were explored using data obtained through administration of the Minnesota Tests of Creative Thinking, the Gates-

---

MacGinitie's Reading Survey, and a Literature Response Instrument which was developed for this study.

The creative behavior patterns of the children in this investigation were further studied with regard to two additional questions. Although relationships have been found between high intelligence, high achievement, and high creativity, the relationships are low. Creativity appears to be a unique type of cognition, separate from intelligence and those cognitive skills that are associated with intelligence, such as reading comprehension. Getzels and Jackson\textsuperscript{29} found cognitive differences between a group of high intelligence - low creative students and a group of high creative - low intelligence students. These investigators reported comparable achievement between both groups despite a twenty-three point intelligence difference. Torrance\textsuperscript{30} replicated part of the Getzels and Jackson study in five elementary schools and confirmed their findings. The reading achievement of the high creative groups was significantly higher (.05 level) than was the reading of the high intelligence group. These studies indicate that intelligence and creativity are different variables. If there is validity to this theoretical assertion, then intelligence and creativity should exist independently among the lower status black children used in this study.

\textsuperscript{29}Getzels and Jackson. \textit{Creativity and Intelligence}.

\textsuperscript{30}Torrance. \textit{Guiding Creative Talent}.
An additional question was introduced by Torrance's finding that primary grade boys exhibited higher creative abilities than did primary grade girls. This would suggest that fourth grade boys might respond more creatively on a paper and pencil test and oral responses to literature than fourth grade girls.

**Importance of the Study**

Assessment of the creative thinking abilities of the children in this study can contribute to an understanding regarding the need for nurturing and guiding creative growth in various school settings. The study of relationships between specific verbal and nonverbal creative thinking factors and abilities of literal reading comprehension and creative oral responses to literature can increase our understanding of the abilities of this particular group of children. As a group these children could excel in one measure of creativity, such as nonverbal tasks, and score low on another measure, such as verbal tasks. These children, a group of lower status black boys and girls, seem to present a great challenge to our methods of teaching and our understandings of the reading and thinking processes. The finding of group strengths in creative oral responses to literature could suggest the need for varied stimuli and response modes for both creativity and

---


reading. The identification of the creative thinking variables studied among this group of children could indicate the existence and differences of such abilities.

Torrance\textsuperscript{33} discovered that different types of children responded to the \textit{Minnesota Tests of Creative Thinking} with varied strength. Black children in Georgia performed higher on nonverbal than verbal tasks; specifically on fluency, flexibility, and originality. Crutchfield reports a study in which black children gained, although "only about half as much as do the white children,"\textsuperscript{34} The black children were, however, appreciably lower on the creativity pre-test measures than were the white children. Although Crutchfield does not report enough information to determine whether the white and the black children did indeed come from the same socio-economic levels, his findings leave open the possibility that black children do differ from white children in creativity when socio-economic level is held constant. This raises the question as to whether or not the results would have been different had each child been taught according to his specific creative strengths and weaknesses, such as predicting consequences, adding to an idea with words or pictures, or improving a


product. It is probable that the two populations do not differ when cultural, socio-economic factors are held constant; however resources and the scope of the present study limited it to a study of the creative abilities of a group of lower status black children.

By revealing specific abilities in creative thinking, reading comprehension, and creative response to literature, this study was designed to promote an awareness of abilities and potentialities that might otherwise remain unnoticed. Abilities to raise questions, pose alternative solutions to problems, or extend a stimulus with many unique ideas may be transferred to children's understanding of science or social studies problems. Strengths and weaknesses appearing through response modes may suggest the need for creative discussions. Differences within individuals of creativity and reading abilities may indicate that creativity is not a unitary function, and that it must be taught in varieties of ways.

**Limitations of the Study**

The present investigation was carried out in one inner-city school in Columbus, Ohio, using seventy-four students from three classes of fourth grade children. Although all of the children in this study were black, approximately ninety-two percent of the children in the total school population of seven hundred-forty children were black. Over forty percent of the children in the school were from families on welfare. The school was selected on the basis of its identification as a school in which a high percentage (47
percent) of families were receiving Aid to Dependent Children. Therefore, the study was restricted to lower socio-economic status black children in one geographic area.

Use of fourth grade children permitted the study of creative thinking at a critical period. Studies have consistently indicated a decline in creativity during the kindergarten, fourth and seventh grade years. Speculation regarding causes for these declines in creative growth include: conformity to peer groups or adult pressures, conformity to male and female roles, transition periods in socialization, reaction to new stresses, and physiological changes. The present study, thus provides data regarding creative thinking during this particular developmental period.

This study was subjected to the limitations of a group administered intelligence test. Factors of socio-economic deprivation or advantage can affect an individual's score on an intelligence

35 Mr. Orrin Smucker, Columbus Board of Education, in telephone conversation, March, 1971.


Torrance. Guiding Creative Talent, pp. 91-97.

37 Torrance. Guiding Creative Talent, p. 102.
measurement instrument. Wolf found a correlation of +.76 between rating of environment and the Henmon-Nelson intelligence test scores for a group of fifth grade children. Crosby believes that "standardized group intelligence tests reflect largely the kinds of experiences associated with middle-income people, experiences notably lacking among disadvantaged children." Because of this, intelligence tests, as used in this study, were seen as having limited value in measuring the true potentials of lower socio-economic status children.

The Literature Response Instrument developed for this study used a different mode of presentation than the Minnesota Tests of Creative Thinking, California Short-Form Test of Mental Maturity, and Gates-MacGinitie Reading Survey, in that the latter three required paper and pencil responses. Questions and responses for the Literature Response Instrument were given orally. The literature selection itself was read individually by each child as he listened in trial testing. While it added the element of listening to the testing procedure, the method


eliminated vocabulary recognition as an influencing factor on the creativity weight of the children's responses to questions. In addition, the tape recorded story provided a consistency in the presentation of the literature stimulus.

This study, then, was limited to one ethnic, geographic, and developmental age group. It was further limited by the type and procedures of administration of the measurement instruments.

Definitions of Terms Used

One may conceptualize several levels of reading, proceeding from the concrete meaning of the printed word toward more abstract thinking processes. These levels, as adapted from reading complexity progressions proposed by Russell, describe four types of reading.

1. Recognition: Word identification and meaning
2. Comprehension: Literal understanding of a selection
3. Critical: Interpreting, questioning and evaluating
4. Creative: Gaining insight and new ideas.

Although the last two levels are often combined in discussions of reading levels, Stauffer makes a distinction between the critical

---

41 Russell, David H. Children Learn to Read. (Boston: Ginn & Co., 1961), Ch. XIV.

reader and the creative reader. He sees the creative reader as being one who extrapolates from the printed material in order to think divergently and productively. The reader goes beyond the critical reading skills in such a way that his reading "may be productive of new ideas, critical of old ones, or appreciative of the art of literature." The critical reader reads logically and is concerned with the validity (internal consistency) and reliability (dependability) of the material. The creative reader is inventive and becomes at least in part, an author himself. A child responding to the literature selection in this study, for instance, might add to the story by telling what the characters would be saying in an illustration.

The reading comprehension and creative levels were explored in this study to discover their relationships to verbal and nonverbal creativity. Reading comprehension was determined by use of a standardized measurement instrument. Creative reading was measured by weighing the creativeness of oral responses related to a selection of realistic literature. As such, creative responses to a literature stimulus were assessed. Creative reading in this instance was defined as the extension beyond a literature selection by the addition of new ideas, problems, and consequences. Specific criteria for identification of these elements are presented in Chapter Three.

---

43 Ibid, p. 36.
Almost all of the definitions of creative thinking involve the production of something new or original as a result of a process of sensing some kind of deficiency, formulating ideas or hypotheses, and communicating the results.\textsuperscript{44}

Without introspective input from an individual child it is not possible to judge whether or not an idea is new to him. Therefore, this study utilized the procedures developed by Torrance\textsuperscript{45} for measuring creative thinking abilities on the basis of four factors:

1. Fluency: Quantity of relevant ideas or responses
2. Flexibility: Quantity of categories, principles, or approaches used
3. Originality: Unusualness in qualities of ideas
4. Elaboration: Details or extent to which an idea is described.

The term creative oral response to literature was derived from the definition of creative reading. As measured with the Literature Response Instrument developed for this study, creative oral response to literature is: 1) the ability to change parts of a story, 2) ability to project beyond the literal interpretation of a story, and 3) the ability to use a story as a point of departure to develop a story or event of one's own.

The tasks involved on the Minnesota Tests of Creative Thinking were designed to assess different mental processes involved in

\textsuperscript{44}Torrance. Guiding Creative Talent, p. 42.

creativity, and were used in this study to measure creative thinking ability. As such, two major processes were involved. **Verbal creative thinking** required subjects to respond in writing to various stimuli: 1) Ask-and-Guess Activities expressing curiosity and developing hypotheses, 2) a Product Improvement Activity, 3) an Unusual Uses Activity designed to free the subject from an established mind-set, 4) an Unusual Questions Activity measuring spontaneity in producing different types of questions, and 5) a Just Suppose Activity in which the subject imagines possibilities regarding a variable new to him. **Nonverbal creative thinking** required the subject to respond to picture stimuli by drawing. Only a minimum amount of writing was required. Tasks involved: 1) a Picture Construction Activity requiring a unique completion of a shape, 2) an Incomplete Figures Activity, and 3) a Repeated Figure Activity requiring many ideas applied to a single stimulus.

**Summary**

This chapter presented an introductory overview to the study. A brief description of the background and thinking which led to the formulation of this study and its hypotheses was given. Included were purposes, possible significance, and information pertinent to the interpretation of this study.

---


Chapter Two is concerned with theory and research related to creativity and its relationships to reading ability, intelligence, and socio-economic level. Subjects, instruments, and procedures used in the study are described in Chapter Three. Chapter Four includes presentation and interpretation of the data. A discussion of the responses of the children to the instruments used is presented in Chapter Five. A summary of the study, conclusions, implications, and recommendations are included in Chapter Six.
CHAPTER II

REVIEW OF THE LITERATURE

Introduction

A survey of the research and theory upon which the hypotheses and procedures of this study are based involves several facets. Explanations of the importance and process of creative thinking dominate the literature. Because actual observation of mental functioning in creative thinking processes is not possible, one method of investigating creativity has been to analyze personality traits of eminent people recognized as being creative. Other investigators of creativity questioned artists, writers, musicians, mathematicians, and scientists to discover steps they recall which led to a creative product. Further research examined creative products to provide another part of the explanations of creativity.

Identification of factors in creative persons, processes, and products guided the development of instruments for measuring individual

---


50 Ibid
creativity abilities. These abilities have been studied to test their relationships to factors such as achievement, intelligence, and personality traits. In turn, exercises have been developed to aid teachers in teaching children to use, respect, and improve creativity. 51

This study assumes the existence and importance of creativity. In order that creative thinking may be better understood, explanations of importance, definitions, and processes will be discussed. Finally, investigations of the relationships between creative thinking and reading, the particular emphasis of this study, will be explored.

**Importance of Creativity**

Explanation of the nature, products, processes, and importance of creativity offer both common and differing viewpoints. Most authorities, for instance, reflect the mutual belief of Fromm and Rogers, as reviewed by Hallman, 52 that creativity is common to everyone and can become a human process which can contribute to the self-actualization, or well-being, of a person. A circular effect, which could be self-perpetuating, can be visualized when combining the psychological freedom and safety Rogers sees necessary for good mental health with Maslow's prerequisite of good mental health for the process of letting one's self be free in creative activity. 53 Torrance

---

51 Ibid


discusses the importance of creativity in relationship to "mental health, educational achievement, and vocational success." These ideas are reflected in Kubie's call for an educational process which helps persons attain an "emotional stability and freedom" which could enable them to use their intellectual capacities creatively to new situations and would not feel a need to "staticise the world."

The notion that creativity is a necessary part of effective human functioning is not newly recognized. Getzels and Jackson cite an interest in creative thinking as prompting Dearborn, in 1898, to study imaginative responses of students to inkblots and to suggest the importance of such thinking. Imaginative thinking, however, was not a factor in the 1905 intelligence test developed by Binet and Simon. Groch reports that this test, as revised by Terman, resulted in an evaluation which equated giftedness with high academic

---

55 Kubie, Lawrence S. "Block to Creativity," in *Explorations in Creativity*, p. 33.
56 Maslow. "The Creative Attitude."
57 Getzels and Jackson. *Creativity and Intelligence*.
intelligence. Simpson,\textsuperscript{59} recognizing the need in 1922 for a broader description of giftedness, developed one of the early tests for creative ability. As a result of his study, Simpson proposed that intelligence and creativity differ.

Simpson's findings have since been supported in studies of intelligence and creativity which include those of Osborn, Thurston, and Getzels and Jackson.\textsuperscript{60} Correlations between intelligence and creativity which have been reported throughout the present century are generally low, ranging between .02 and .40.\textsuperscript{61} It was not until 1950, however, when a structure of the intellect was developed which recognized both intellective and creative factors in mental processes. The structure of the intellect model developed at that time by Guilford\textsuperscript{62} has been influential in differentiating varied mental processes. These processes are depicted as ninety separate but interacting factors. As a person thinks he applies intellectual factors in a process of convergent or divergent thinking. Convergent thinking requires use of knowledge in obtaining a single, correct

\textsuperscript{59}Simpson, R. M. "Creative Imagination."

\textsuperscript{60}Torrance. \textbf{Guiding Creative Talent.}

\textsuperscript{61}Taylor and Holland. "Development of Tests of Creativity," p. 91.

answer to a situation or problem. It is the process of divergent thinking, or using knowledge to explore many alternatives for a number of possible solutions, which Guilford sees as most related to creative thinking.

Frequently education emphasizes ability to think convergently, while neglecting creative thinking development. Such emphasis does not cultivate the divergent thinking abilities a person needs to be able to make sound, responsible judgment or to apply the problem solving steps which Dewey, as cited by Guilford, describes as productive thinking.

Skills in thinking, whether they be literal (convergent) or creative (divergent and problem solving), cannot be assumed. They need instead to be nurtured and taught in an environment which gives free reign and ready response for the exploration of the child by providing the freedom and encouragement for independent, creative thinking.

Definitions of Creativity

While those who study creativity agree that creative ability exists to some degree in all people, that such ability is a necessary component for personal self-fulfillment, and that it is the responsibility of education to provide for creative thinking development, there appears to be no absolute definition for the term.

---


Definitions of creativity have been formulated in terms of philosophy, process, products, and kind of personality. Most definitions reflect the descriptions provided by Guilford and Dewey in their references to creative thinking as acts of divergent or productive thinking. One authority, however, does cite a level of creativity which occurs in the biological forms of transformation which take place in normal body functioning. Most definitions exclude the biological level of transformation of old to new by requiring a conscious thinking process which culminates in a new or original idea or viewpoint. As seen at this level of mental functioning the result of a person's creative thinking must have some element of newness or novelty about it to the individual. Difficulty in recognizing a creative product or idea is inherent in such a definition, however, because only through introspective reporting can the originality of the ideas to a particular person be determined.

An example of creativity as transformation or uniqueness of an idea to an individual can be found in the acquisition and use of language. When learning to speak a child experiments with sounds. According to Church he "does not piece together words out of phonetic elements, but grasps and alters them globally." The child begins then to imitate the words adults use, combining them in his own short

---


sentences. Thus begins a process of language creativity which continues throughout adult life as a person uses and understands sentences previously unheard. Chomsky describes this language creativity as "the ability to understand immediately an indefinite number of entirely new sentences, but also the ability to identify deviant sentences and, on occasion, to impose an interpretation on them." 67

Sorokin more loosely describes creative activity as the "adequate and constructive response to a new situation or a more adequate response to the old situation." 68 The requirement that creative thinking must be "adaptive to, or of, reality" 69 is added by MacKinnon. Parnes 70 shares this interpretation that the uniqueness of the product must have value. He further defines creative thinking as the refocusing of the elements of a person's experience into new and meaningful relationships. The usefulness and uniqueness of the product may be accepted as creative if it is made public and is of


70 Parnes. Creative Behavior Guidebook.
value to a particular group of persons at some given time. The common strands throughout these definitions are those of uniqueness or newness of an idea to at least the originator of the idea and the usefulness or reality of the idea.

Terms used to denote creative thinking include those of problem solving and productive thinking. Dewey and Wertheimer, as compared by Aschner, see problem solving as the highest level of thinking and equate such thinking with creative activity. Aschner disagrees by defining productive thinking as the highest level of thinking. Productive thinking to her is inventive, imaginative, logical, and systematic. One form of productive thinking (or problem solving) which is also seen as creative thinking is that described by Osborn as brainstorming.

Whether the term defined be creative thinking, problem solving, productive thinking, or brainstorming, the activity results in some new or novel idea, solution, or product. Creative activity differs in degree and kind and fluctuates in "intensity and fruitfulness." 

---


72Aschner and Bish. Productive Thinking in Education, p. 93.

73Ibid


Perhaps the most universal definition is provided by Torrance when he describes creative thinking as

taking place in the process of sensing difficulties, problems, gaps in information, missing elements; making guesses or formulating hypotheses about these deficiencies; testing these guesses and possibly revising and retesting them; and finally in communicating the results.76

It is this definition of creativity upon which this investigation is based, with the additional emphasis on uniqueness of ideas which result from specific stimuli.

Process of Creative Thinking

Accurate descriptions of the creative process are difficult to develop because they have depended largely on an analysis of recalled steps following an invention, solution of a problem, or of a new idea or product. As stated by Heale, "creative thinkers can tell us so little about it."77 They do describe certain steps which would substantiate those defined by Wallas and Dewey.78 The steps usually begin with identification of a problem and application to it of one's collected knowledge and experiences. Following this step, persons who have been identified as creative thinkers reach stages of


frustration (as they raise questions) and intense interest and concentration (as they devote themselves to the problem or task). Only after these periods of progression, and often during moments of relaxation or other endeavor than the concentrated effort toward solving the task, does insight and emergence of an idea seem to occur. The process is perhaps oversimplified, but adequately summarized, by Newell as creative activity which appears as "a special class of problem solving activity characterized by novelty, unconventionality, persistence, and difficulty in problem formulation." Newell's explanation, however, concerns traits of creative thinking more than steps in the creative thinking process.

Perhaps the most widely recognized progression of creative thinking stages was formulated by Wallas in 1926. As described by Fliegler, Wallas identified an initial step of preparation during which a problem is identified and information pertaining to it is gathered. The step of incubation consists of a restructuring of ideas. It is followed by an illumination stage which provides insight and uniqueness of idea in the problem solution. A final stage of verification calls for elaboration, reformulation or reevaluation of the

---

79Gruber, et al. Contemporary Approaches to Creative Thinking, p. 66.

creative idea or solution. Dewey lists five stages of problem solving or creative thinking, the first two of which reflect Wallas' stage of incubation (preparation): recognition of a problem, analysis of a problem, suggestion of possible solutions, testing of consequences, and judgment of the selected solution. The creative process, as described by each of these men, involves a person in becoming lost in the present during the inspirational phase of creativity. The process may, according to Stein, stop at different stages and degrees for different persons (if, for example, too few hypotheses are developed). The creative thinker needs to be able to go through a destructive thinking process during which patterns of behavior and thought which become no longer useful are reshuffled into a new pattern. In order to persist through this struggle and a process including resignment from the problem, relaxation, sudden excitement or insight, and verification, the creative thinker must have a high desire or motivation to progress through each step in the complete process of creative activity.

---


84 Torrance. *Rewarding Creative Behavior*. 
Creative thinking as described above requires a process which Seidel sees as having little to do with leisure time hobbies which are "recreative". Nor would it include creative activity such as natural biological functioning or transformation of the body in normal functioning. Seidel would also exclude the curiosity of children because, although they seem naturally creative, children lack the interest and dedication of a creative artist or scientist. He feels that what is seen as curiosity in a child's questions may be a discovery of language, a test to see if there are answers to questions, or a search for attention. Usually almost any answer, Seidel continues, is accepted without the child seeing the problem involved in the initial question.

These limitations to examples of creative thinking depend on how closely one adheres to the stages proposed by Wallas and Dewey. If one applies definitions of creativity such as the requirement that an idea or solution be unique to the individual, then many curiosity based questions of children would be classified as creative thinking. The qualification would need to be whether or not the child followed up the question by searching for alternative solutions and culminating his search with a discovery unique to him. If the discovery is useful to the child, and to a particular group at a given

---

time, it would further fit one other definition of creativity and, at least to some degree, the stages of the creative thinking process.

**Studies Relating Creativity to Intelligence and Reading**

Studies in the field of creativity have concentrated on five general areas; high and low creativity comparison with personality traits; relationships of creativity, intelligence and achievement, socio-economic and environmental factors influencing creativity; inhibiting and nurturing factors for creativity; and evaluation of programs for development of creativity. Because this study specifically investigates relationships between creativity, reading, intelligence, and creative oral response to literature, this portion of the literature review will concern studies relating creativity to intelligence and reading achievement. Specific studies relating creativity to reading achievement are limited in number, therefore, studies which include measures of reading achievement in a general achievement test battery will be included. Creative abilities of black children and influence of socio-economic level on creativity will be reviewed in the following sections.

Relationships of intelligence to creative thinking ability are generally included in investigations of creativity and achievement. Studies at the elementary grade level use tests such as the *California Tests of Mental Maturity*, *Minnesota Tests of Creative Thinking*, *California Achievement Tests*, and the *Iowa Tests of Basic Skills*. The latter two achievement tests include subtests of reading vocabulary, reading comprehension, arithmetic, and language skills. Separate
relationships for reading achievement will be discussed when such information was included in a particular investigation. Using such measurement instruments Carey\textsuperscript{86} found relationships which relate reading achievement and intelligence (.01 level), but, unlike other investigators, reported no significant relationship between achievement and creative thinking ability for sixth grade students.

Altenhaus,\textsuperscript{87} using creativity tests from the Getzels and Jackson battery, explored creativity ability (defined as divergent thinking) of sixth grade students as it related to intelligence and achievement. Total achievement scores from the \textit{Iowa Tests of Basic Skills} were used. Analysis of the data indicated a significant, linear relationship between intelligence and creativity (.01 level, rho .64). Correlations for subtests of the creativity battery and intelligence ranged from .34 to .52. Correlation between intelligence and achievement as .75, and .69 between creativity and achievement. Both correlations were statistically significant at the .01 level. The intelligence test, however, was a better predictor of achievement than were the creativity measures. No significant differences were found between data for


boys and girls on any of the variables. The major implication suggested by the investigator was that both divergent and convergent thinking abilities should be included in school curricula.

DeBoer\textsuperscript{88} revealed positive relationships between intelligence and total achievement (\(\rho .65\)), intelligence and creativity (\(\rho .55\)), and total achievement and creativity (\(\rho .71\)). Reading vocabulary (\(\rho .59\)) and reading comprehension (\(\rho .61\)) both related significantly with creativity. In her study sixth grade students were administered the Getzels and Jackson creativity test battery along with the intelligence and achievement (\textit{Iowa Tests of Basic Skills}) tests. DeBoer's study, which was a partial replication of the Getzels and Jackson study of highly intelligent and highly creative groups of students, revealed that students who were both highly intelligent and highly creative had the highest mean achievement scores. Those who were high only in creativity scored a higher mean achievement than did those who were highly intelligent, suggesting that creativity may well influence achievement in school. A relationship in these two studies seems to be consistent between creativity and intelligence. DeBoer did not consider the relationship between creativity and intelligence variables to be high. The author did suggest that high creativity and high intelligence are not mutually exclusive, inasmuch as one group of students was identified which

\textsuperscript{88}DeBoer, Dorothy L. "A Study of the Relationship of Creativity to Intelligence and Achievement." (unpublished Ph.D. dissertation, Northwestern University, 1964).
measured in the top twenty percent on both variables. As stated by Getzels and Jackson, there is a relationship in that a certain amount of intelligence is needed, but intelligence is not synonymous with creativity. These researchers conclude that intellectual and creative abilities exist in varying degrees and combinations for different individuals.

The conclusion suggested by Getzels and Jackson is evidenced in studies which investigate creativity and reading achievement for different kinds of children. Beilin conducted an investigation of relationships between factors of creativity, reading ability, and intelligence. She reported a low, positive (.20 to .29 rho) relationship between reading and verbal creativity, with a lesser relationship between reading and nonverbal creativity. Intelligence and verbal creativity were positively related (.24 to .30 rho) with slighter (.08 to .24 rho) relationships between intelligence and nonverbal fluency and originality. In both groups there were further significant differences in mean verbal intelligence and all creativity factors. There were "no significant differences in the means of the reading scores of the high twenty-five percent and low twenty-five percent in

89 Getzels and Jackson. Creativity and Intelligence.

each of the seven creativity factors when verbal intelligence was held constant. Bellin concluded that a relationship exists between reading comprehension and creative thinking ability which is affected by intelligence. The relationship between creativity and intelligence again appears to be consistent, but low and not conclusive.

In a study comparing relationships between creativity, intelligence, and achievement (determined by students' grade point average) of upper elementary grade students, Van Pelt grouped subjects by age and sex. Creativity within these groups, as measured by the Minnesota Tests of Creative Thinking, was found to be related to achievement for girls, but not for boys. The most significant interrelationships reported by Van Pelt were those between intelligence and achievement, and age and creativity. Creativity and intelligence were significantly related (.31) at the .01 level. To a lesser degree, creativity and achievement were related.

Relationships between creative thinking and critical reading ability were studied by MacDougall as part of an experiment testing the effectiveness of critical reading instruction. One hundred seventy-five upper elementary grade students received critical reading


93MacDougall. "Relationship of Critical Reading and Creative Thinking."
instruction for one year. Although the investigator does not define the process or comparative effects, experimental groups were matched with control groups according to the socio-economic level of the school. Four measurement instruments were administered to the sample: The Ohio State Critical Reading Test, Minnesota Tests of Creative Thinking, California Reading Test, and Lorge-Thorndike Intelligence Test. MacDougall described critical reading essentially as judging of a selection based upon experientially developed criteria. Torrance's definition defined creativity in the study. A significant relationship between intelligence and creative thinking ability was found (.05 level). A relationship between critical reading skills and creative thinking abilities was found; low, but significant in grades four and five. At each grade level verbal creative thinking related more highly to critical reading ability than did nonverbal creative thinking ability. At all grade levels general reading achievement demonstrated a significant relationship with creative thinking ability.

One study analyzed relationships between literal, critical, and creative reading abilities as measured by three standardized tests: the Nelson-Denny Reading Test, Watson-Glaser Critical Reading Test, and The Cooperative Literary Comprehension and Appreciation Test. Relationships were tested between the reading variables, creative thinking abilities, and intelligence. Intelligence, and not creativity, was the main source of variation in the reading scores of the high school
students tested. In the study, Roughton found a slight trend for creativity to be related to creative reading more closely than to critical reading. Roughton concluded, however, that creativity did not exist as a factor influencing reading achievement.

An investigation by Stemmler appears unique in that she attempted to discover processes high school students apply to the actual reading act. Reconstructing the organization of the Getzels and Jackson study, using highly creative and highly intelligent groups of students, Stemmler sought to understand how a person responds and processes ideas, information, and relationships in reading. Students verbalized their thinking, introspectively, retrospectively, and in response to questions based on one prose and one poetry selection. A series of intelligence, reading, and creativity tests was used to gather base measure data. Relationships of these measures to the investigator's own framework for assessing intellectual and imaginative processes of the reading act were analyzed. Stemmler studied literal and non-literal (surface meanings as opposed to meanings beyond the surface to applied, affective, and stylistic elements) levels of reading. The highly creative student responded more imaginatively and less evaluatively, as well as with greater group variations, than did students in the highly intelligent group. Perhaps the most

---

Roughton. "Creativity as a Factor in Reading Achievement."

Stemmler. "Similarities and Differences in Reading Styles for Highly Intelligent and Highly Creative Students."
important conclusion drawn states that "each group manifested a
dominant reading style." The study supports the premise that the
reading process is, indeed, a very complex one. It implies the
importance of the different reading styles as a factor which could
guide changes in both curricula and literature use.

**Creativity and Socio-economic Status**

Lower status fifth grade students were compared to middle
status students in an investigation of socio-economic status levels
conducted by Dukes. He found that middle socio-economic level
students scored significantly higher (.05 level) on verbal creativity
factors than did lower status students, and slightly higher on non-
verbal tasks in originality. Students in the middle socio-economic
levels scored higher means on reading achievement, as measured with
the Stanford Achievement Test, than did the lower status students.
Relationships between the variables, which included anxiety, self-
concept, and reading achievement, were computed. Significant relation­
ships (.05 level) between each of these variables and socio-economic
level were found. Duke's findings indicate an interacting influence of
socio-economic status on relationships between creativity and
achievement.

96 Ibid, p. 149.

97 Dukes. "Anxiety, Self-Concept, Reading Achievement, and
Creative Thinking in Four Socio-Economic Status Levels."
Four additional studies which investigate relationships between creativity and socio-economic status will be reported in the following section. These studies concern creativity as it relates to both socio-economic status and race.

**Creativity and Black Children**

In a study comparing black with white children, Savoca$^{98}$ administered four tests of the Guilford divergent thinking battery and the Stanford Binet Intelligence Test to four year old children. Two divisions each of race, intelligence, socio-economic level, and reward or nonreward were combined in patterns allowing a factorial analysis of data. Both reward and socio-economic level were found to influence creative thinking at a significantly high (.001) level. Race and intelligence interaction significantly (.05 level) influenced creative thinking. Socio-economic level, as measured by parental education and occupation, negatively effected creative thinking of the preschool children. A relationship was found, particularly for low socio-economic status black children, between the lower intelligence scores and lower divergent thinking scores.

Relationships between achievement, intelligence, sex, and socio-economic status were studied by Karsten.$^{99}$ Thirteen year old black


$^{99}$Karsten, Mary O. "The Relationship of Tested Creative Abilities and Selected Factors of Academic Achievement, Intelligence, Sex, Socio-Economic Status and Pupil Attitudes." (unpublished Ph.D. dissertation, University of Southern California, 1967.)
students were administered the Guilford creativity tests and a group intelligence test. Average grade point provided achievement data. A culturally disadvantaged and a nonculturally disadvantaged group, as established with the Warner scale, were studied. In both groups achievement related to intelligence at the .01 level. Creativity and intelligence were related at the .05 level. The investigator concluded that intelligence and creativity measures estimate independent aspects of ability, however. No significant relationships were evidenced between creativity, socio-economic status, or sex. This could be influenced by the lack of any upper-class students in the study.

Race was not an influencing factor on creative thinking for low socio-economic status children in a study conducted by Pogue.100 Students in grades four, five, and six in one elementary school were the subjects of the investigation. Scores for two tasks from the Minnesota Tests of Creative Thinking were compared with results of two projective measurements. The investigator reported a significant, positive relationship between socio-economic level and creativity. No significant statistical difference was found in the creative thinking ability of black and white children of low socio-economic status.

Forty upper elementary grade black children were given the California Test of Mental Maturity, the Iowa Tests of Basic Skills, and the Minnesota Tests of Creative Thinking in a replication of a Torrance study of high and low intelligence and high and low creative children. Fugua found no significant relationship between total creative thinking scores and intelligence test scores. The high creative child performed higher on the achievement test than did the low creative child. Low, but significant, relationships were found between nonverbal creative thinking and intelligence and total achievement test battery scores. This finding differs from other investigations reviewed in that nonverbal creative thinking generally has a lesser relationship to intelligence or achievement than does verbal creative thinking.

While the Crutchfield study reported in Chapter One suggests that creative thinking abilities of lower socio-economic level black children measure lower than those of white children, the studies reviewed above present no conclusive evidence that race and creativity may be related. Rather, these studies support the conclusion offered


102 Crutchfield. "Creative Thinking in Children."
by Ellinger\textsuperscript{103} that "the lower class parent is passing on his own lack of vision, regard for learning, and neglect or opportunities available to his children." Thus, the culture imposed upon children by a lower socio-economic status may well influence creative thinking ability as measured with standardized tests.

While relationships exist between creativity and intelligence, and creativity and reading achievement, they are reported by investigators to be low. These relationships are influenced by achievement level and socio-economic level of each student. In order to better understand these relationships, more information is needed regarding different groups of children and the strengths and learning styles of children within each group.

\textbf{Summary}

Definitions of creativity and explanations of the creative process vary according to the authority presenting the discussion. Research is not conclusive regarding relationships between creativity, intelligence, and reading achievement. Nevertheless, certain generalizations have been suggested:

1. Mental processes include both intellective and creative factors, each of which exist to some extent in all persons.

2. Creative thinking ability needs to be nurtured and developed in order for persons to be mentally healthy, socially contributing, and fully self-actualizing.

3. Creativity can take place at an unconscious level in the form of normal body functioning such as transformation of food to energy. Most definitions of creativity require a conscious development of a new or unique idea or product. Definitions differ as to whether the idea or product is considered creative if it is unique to the individual, or if it must be both new and useful to a particular group at a specific time.

4. Creative thinking is described by a variety of terms, such as divergent thinking, productive thinking, problem solving, and brainstorming.

5. The creative thinking process involves at least four steps: 1) Preparation or identification of the problem and information gathering, 2) Incubation or study of the problem and alternative solutions, 3) Illumination or insight, and 4) Verification or elaboration, evaluation and hypotheses testing of the selected solution.

6. There is a low, positive relationship between intelligence and creativity. Intelligence and creativity are neither synonymous nor mutually exclusive. Each exists in varying degrees and combinations for different individuals.
7. Both intelligence and creativity influence school achievement. Achievement in reading is more closely related to verbal than to nonverbal creativity.

8. Literal, critical, and creative reading processes require different skills or abilities. Each type of reading appears to be approached differently depending upon an individual's intellectual and creative thinking abilities.

9. Socio-economic status seems to have an interacting influence on achievement and creativity, especially on verbal creativity factors.

**Need for Research**

While research concerning relationships between creativity, intelligence, and general school achievement is extensive, the field is relatively limited in two areas which are of major concern to this study. In the course of review of related research only three studies specifically investigated creative thinking as stimulated through a reading activity. Research pertaining to children's response to literature concentrates on children's literature preferences, rather than children's interpretation or extension of literature. None of the studies which were found in the search for literature pertained to creativity and listening to literature or to oral responses to literature. Few studies have been conducted primarily to examine the creative thinking abilities of black children. This study, then, indicates a need to examine these variables in order to increase the
understanding of various types of creativity, reading, and responses to literature; as well as the learning abilities and styles of black children.
CHAPTER THREE

THE PROCEDURES AND MATERIALS

Introduction

The major purpose of this study concentrated on the exploration of relationships between children's creative thinking, reading comprehension, and creative oral response to literature abilities as defined in Chapter One. This study included investigation of relationships between these variables, intelligence, and sex of the selected subjects. The following hypotheses were tested as they pertain to the lower status black children in this study:

1. There is no statistically significant relationship between verbal creativity and reading comprehension.

2. There is no statistically significant relationship between nonverbal creativity and reading comprehension.

3. There is no statistically significant relationship between verbal creativity and creative oral responses to a literature selection.

4. There is no statistically significant relationship between nonverbal creativity and creative oral responses to a literature selection.

5. There is no statistically significant relationship between literal reading comprehension and creative oral responses to a literature selection.

6. There is no statistically significant relationship between verbal creativity and intelligence.

7. There is no statistically significant relationship between nonverbal creativity and intelligence.
8. There is no statistically significant relationship between reading comprehension and intelligence.

9. There is no statistically significant relationship between creative oral responses to a literature selection and intelligence.

10. There is no statistically significant relationship between verbal creativity and sex.

11. There is no statistically significant relationship between nonverbal creativity and sex.

12. There is no statistically significant relationship between creative oral responses to a literature selection and sex.

Chapter Three presents explanations of the subject selection, instrumentation, measurement procedures, and data analysis processes employed to study the relationships between the variables questioned in the hypotheses. A brief introductory description of the procedures follows.

Each of the fourth grade children in one inner-city school was administered three standardized paper and pencil tests: 1) California Short-Form Test of Mental Maturity, 2) Minnesota Tests of Creative Thinking, and 3) Gates-MacGinitie Reading Survey D - Comprehension Test. An informal measurement, the Literature Response Instrument, was developed in order to assess the subjects' creative oral response to literature ability. A realistic children's book was selected and the text was tape recorded. Children individually listened to the tape recording while following the text in the book. Each child was then asked four questions designed to elicit creative responses. The child's answers were tape recorded and later transposed to typewritten protocols which were scored for creative content by three judges.
Raw scores for the Literature Response Instrument and the standardized measurement instruments provided the data which were analyzed using predominately nonparametric statistical procedures.

**Population**

The fourth grade students in one inner-city school in Columbus, Ohio, were the subjects of this study. Although all of the seventy-four children in this study were black, approximately ninety-two percent of the children in the total school population of seven hundred-forty children are black. Over forty percent of the children in the school are from families on welfare. The school was selected on the basis of its identification as a school in which a high percentage (47 percent) of the families were receiving Aid to Dependent Children. The school district categorizes schools receiving special funding on a priority basis. The school used in this study was classified as a Priority II school during the 1970-1971 school year. (Number of priority schools in each group was: Priority I = 3, Priority II = 10, Priority III = 10, Priority IV = 15, and Priority V = 14). Of the total eighty-nine students in the three fourth grade classes, seventy-four supplied the data analyzed in this study. Students were eliminated from the original number for one of four reasons:

1. They were transferred from the school.

---

104 Mr. Orrin Smucker, Columbus Board of Education.
2. They were absent during one or more of the testing periods.
3. Their Literature Response Instrument results were used for purposes of training judges.
4. They had previously read the literature selection.

**Instrumentation**

The population responded to three standardized paper and pencil instruments. The *Minnesota Tests of Creative Thinking*, Form A (Thinking Creatively with Words and Thinking Creatively with Pictures), provided an assessment of verbal and nonverbal creative thinking abilities. The *Gates-MacGinitie, Survey D, Reading Test* measured reading comprehension ability. The *California Short-Form Test of Mental Maturity*, Level 2, yielded an intelligent quotient. Each of these instruments is described below. The *Literature Response Instrument*, developed for this study, assessed creative ability as manifested through oral responses. The investigator administered the creativity test battery and the reading comprehension test during April, 1971; the classroom teachers administered the intelligence test the previous May. The *Literature Response Instrument* was administered by the investigator in May, 1971.

**Standardized Instruments**

*Minnesota Tests of Creative Thinking*. Creative behavior, thinking, and potential were measured using the verbal and nonverbal creative
thinking tests battery developed by Torrance. Each section in the battery is scored according to fluency, flexibility, originality, and, in the nonverbal subtest, elaboration. The tasks are each designed to elicit use of a variety of creative thinking abilities. The Ask-and-Guess Test, as example, is designed to tap curiosity and hypotheses development as a means of filling gaps in one's knowledge concerning the stimulus picture. Other activities provide opportunity to separate one's self from well-established ideas about the known (a toy, uses of boxes), to imagine causes and consequences (improbable situation), to control tensions and respond in varieties of ways to a single stimulus (lines, circles), to structure and integrate ideas (incomplete figures).

Interscorer and intrascorer reliability for the tests are .90 and above. Tests can be scored commercially by trained, professional scorers, or a layman may use the manual for scoring. Scoring directions are explicit and cover a wide range of specific possible responses. Test-retest coefficients of reliability range from .35 to .93 (generally .60 and above). Identifying and weighing creative processes and products makes it difficult to establish validity. Study of personalities of creative persons, the nature of creative performances, and creativity research and theory, provided background


for establishing content validity. Construct validity has been established through studies comparing creativity task responses with ink blot responses, drawings, teacher and peer group identification of personality traits, and creative movement abilities. Similar comparisons have been employed in developing concurrent validity, although Torrance states that "no generally acceptable criteria"\textsuperscript{108} has been established. Through long range studies, criteria for predictive validity are presently being established.

Comparison group norms are provided by mean, standard deviation, and T scores of subtests and the total verbal and nonverbal test sections. Norms were established using a "wide range of socio-economic levels"\textsuperscript{109} in a southern California school system, as well as schools in Minnesota and Wisconsin. Norms are provided by grade level, but are not offered from the identical locations for both verbal and nonverbal batteries.

**Gates-MacGinitie Reading Survey.** Three subtests, two of which are arranged according to scaled difficulty, comprise the *Gates-MacGinitie Reading Survey.* The comprehension test involves short paragraphs in which two or three missing words must be supplied from groups of word options. Multiple choices are provided for selecting the best synonym for key words in the vocabulary section. The speed and accuracy subtest, which has items similar in difficulty, measures

\textsuperscript{108}ibid, p. 42.

\textsuperscript{109}ibid, p. 57.
speed in reading short paragraphs and answering inferential and literal type questions. Although each subtest is timed, the comprehension and vocabulary sections are designed to allow each student ample time to progress as far as his ability allows him. As suggested in the Technical Manual,110 the present study used only the comprehension subtest because only a measure of literal and inferential reading ability was desired. Appendix 8 of this study provides a copy of the total test battery.

A heterogeneous nationwide population was used for the normalizing distribution of the Gates-MacGinitie Reading Survey. Means, standard deviations, standard scores, percentiles, stanines, and grade level equivalents are presented. Reliability between subtests and the same subtest on alternate forms is offered. Alternate form reliability is .83, while split-half reliability is .94, for the comprehension section.111 Possible grade level range is 2.2 to 11.9.112

California Short-Form Test of Mental Maturity. The 1963 revision of the intelligence test used in this study has eight levels, from kindergarten age through adults. The third-fourth grade version is designed for forty-two minutes of marking time in order that it may


be administered to a group during one class period. Concepts are presented in seven subtests: Opposites, Similarities, Analogies, Numerical Value, Number Problems, Verbal Comprehension, and Delayed Recall. The Verbal Comprehension subtest measures vocabulary knowledge. The final subtest demands reading and memory skill as the student responds to a story read aloud by the teacher before beginning to mark subtest one.113

Norm standardization was done using heterogeneous groups. A table for intra-individual differences is published. Scores are presented as percentiles, standard scores, mental age, and an Intellectual Status Index (for comparison with grade level of the national norm population). Inasmuch as no equivalent forms were developed, reliability coefficients are offered only between this revision and the 1957 version of the test (between .72 and .81). Stanley,114 in evaluation of this instrument, criticized the ambiguities and need for visual experiential background involved in poor artwork and confusing vocabulary. Indeed, comments of teachers and students participating in this study support Stanley's criticism. The instrument was used, however, with this study group because it is administered district-wide.


114 Ibid, p. 695.
The Literature Response Instrument

The Literature Response Instrument, developed specifically for this study, had as its central purpose the assessment of creative reading ability as stimulated by a single, realistic children's literature selection. Development of this instrument involved phases of selecting the book to be read by the subjects; procedures of administration, or reading and interviewing; and procedures for weighing the creative reading responses.

Selection of the Literature Sample. The initial step involved in developing the instrument for measuring creative oral responses to literature was to choose a literature selection. Since both high and low ability readers were to be studied, the literature selection needed to fit a wide range of ability. To maximize motivation, the choice had to contain colorful illustrations, adventure, and excitement.115 Because children's responses to questions might rely as much upon reading the pictures as the written text,116 selection criteria included pictures and text which complement and supplement one another. It was essential that the selection encourage children to extend story ideas so that creative reading ability could be


assessed according to definitions applied in this study. Interest appeal, readability level, and openendedness, then, were the major considerations used in guiding the choice of the specific literature selection.

The investigator interviewed fifteen third, fourth, and fifth grade children to determine which of four picture books written at primary grade readability levels (two realistic and two fantasy) appealed most highly to them. The children did not read the books, but selected them according to initial appeal of pictures, format, and content as conveyed through the pictures. All but two children made Goggles their favorite and immediate choice. The book proved to be an appropriate selection according to both children's spontaneous interest and readability level. It was a new book for the subjects in that only two fourth grade children had read the book prior to the study. None of the classroom teachers had read the book to their class and each teacher agreed to read books other than Goggles so as not to contaminate the study.

Before the final selection of the literature sample could be determined it was necessary to calculate the readability levels of the samples. Formulas such as the Dale-Chall, Flesch, and Spache are available. The Spache formula is the one here considered to be most fitting inasmuch as it renders readability levels of 1.0 to

3.9 and thus measures the lower reading ability levels at which some of the students in this study read. Responses to the literature selection were to be compared with general reading comprehension ability. The Spache formula has been found to have a rank order correlation of .70 with measured levels of general reading ability. This implies a satisfactory relationship between estimates on the Spache formula and actual children's performance in reading. The Spache formula uses both sentence length and number of hard words (determined from a list of 769 specific words suggested by Dale and revised by Stone). The multiple correlations obtained by combining sentence length and percent of hard words in predicting grade level of books is .818. Spache uses this correlation to justify the application of these two criteria. The complete Spache readability formula is: Grade level = .141 average sentence length per 100 words + .086 percent hard words + .839. The worksheet for using the formula for the final selection of this study appears in Appendix C. The selection used for this study proved to have a 1.8 readability level.

Development of the Questions. Four basic questions were devised which would stimulate creative responses from the fourth grade children. The questions were openended in that they permitted children to


119Ibid.

120Ibid, p. 126.
respond freely without requiring right or wrong answers. In this way questions were designed to enable children to creatively extend the literature selection both qualitatively and quantitatively. The appropriateness of the questions was judged through trial interviews with fifteen boys and girls from grades three, four, and five in the school from which the subjects were drawn. Three graduate students majoring in children's literature evaluated possible questions according to the criteria and goals of this study. The questions were revised as the elementary school children and the graduate students made suggestions. If questions could be answered without reading the literature selection or if they elicited only literal or evaluative responses, they were withdrawn and others were substituted which seemed more appropriate.

The questions selected for use were designed so that their format could be used for literature selections other than the one used in this study. Each question, by being open-ended in nature, was considered to be an appropriate stimulus for responses which would enable children to exhibit creative qualities in fluency, flexibility, originality, and evaluation. In addition, the first question provided opportunity for evaluation and formulation of alternate situations and solutions. The second and third questions asked the respondent to predict consequences, while the fourth required projection of self into the story. The questions, as finally determined, follow.

1. If you could change any part of the book, what would you change?
2. What do you think Peter and Archie will do next?

3. What do you think Peter and Archie will do the next time they are at their hideout?

4. If you saw Peter after school today, what would you say to him?

**Administration of the Literature Response Instrument.** The investigator interviewed each child, having the child read the literature selection and respond to the four questions. Precautions were taken to develop rapport and to prevent extraneous nonverbal clues and interviewer bias. An interview procedure (Appendix D) was used to encourage a free-flow of ideas for children who might not be able to write freely. At the beginning of the interviews, given during the month of May, 1971, each child was told that he would read a book and then answer four questions. The children were reminded of the Minnesota Tests of Creative Thinking which they had taken the previous month. The children had enjoyed the creativity exercises and the freedom of responding in a situation where there could be no wrong answer. They were encouraged again to relate as many and as unusual and clever ideas as they could think of. This was done to give the children a purpose and freedom for reading the selection and responding to the questions. It also established goals similar to those given in the directions for the creative thinking tests.

Each child listened to a taped recording of the literature selection as he followed the text and pictures in the book, *Goggles*. This particular procedure was selected after having different children read a literature selection two ways: 1) independent silent reading,
and 2) following and reading the text while listening to a taped recording of the selection. Each child chose the latter method as the one he felt most comfortable with regardless of his reading ability. This method also best assured the absence of vocabulary reading ability as a variability influencing the oral responses to the literature selection.

Numbers assigned according to a random table of numbers determined the order in which children were interviewed. Interviews began with a brief explanation of purpose and procedure, which was followed by the child reading the literature selection. He then responded as each of the four questions were asked. The order in which the four questions were asked was rotated for each child so as to control influence of response to any one question on following responses. The interviewer encouraged responses with the following questions: "Why?", "What happened then?", and "Can you tell me more about that?" As the child answered the questions his oral responses were tape recorded. Typed transcriptions of these taped recordings provided the protocols used to measure children's creative oral responses to the literature selections. The typed transcripts of these protocols appear in Appendix E of this study.

Rating the Literature Response Instrument. Categories for identifying creative behavior responses to the literature sample were selected from those used by Torrance\textsuperscript{121} in the \textit{Minnesota Tests for Creative Thinking: Directions Manual and Scoring Guide}, pp. 16-50.

Thinking. The category of sensitivity to the story supplemented those analyzed in the Torrance test battery. Definitions were adapted to fit the literature selection. Agreement of categories between the creative thinking and the literature response measurement instruments was felt desirable and necessary because a product moment correlation coefficient formula was to be used to determine relationships between the two types of children's thinking. Judges analyzed verbal responses to questions pertaining to the literature selection according to the following five criteria:

1. Fluency Quantity of total responses to a question without qualification of creativity weight: objects, situations, reactions, characters, or descriptions.

2. Flexibility Quantity of different approaches or principles applied in responding to the story. Ideas which indicate a different way of looking at the story: point of view, setting, problem solving, extended plot.

3. Originality Ideas which differ from those most commonly offered: vividness, imagery, humor, invented words, personal involvement, uniqueness.

4. Elaboration Quantity of ideas offered which extend a thought through situations or questions: explanation of situation or event, cause and effect, details.

5. Sensitivity Ideas consistent with the story content.

A specific Rating Guide, yielding a three-point rating, was developed in order to regulate interjudge scoring procedures for the
Literature Response Instrument. The Rating Guide listed specific criteria or examples in each creativity category for each question. Use of a Q-sort technique\textsuperscript{122} applied to the oral response transcripts provided an initial rating estimate of the creative quality of the responses for the particular subjects of this study. This technique involved a sorting procedure in which a forced-normal distribution of the creative oral responses was obtained by grouping the response protocols in specified numbers within five piles. Specific criteria from the Torrance Tests of Creative Thinking: Verbal Directions Manual and Scoring Guide were adapted to fit responses to the literature selection. These criteria and examples appear in the Rating Guide (Appendix F) used by judges to weigh the creativity elements of each child’s oral responses to questions stimulated by the literature selection. Responses to a question received one, two, or three points in the creativity categories of fluency, flexibility, originality, and elaboration. These scores were totaled for each question, giving a possible score per question of four to twelve points. The total points in each of the four creativity categories, for each of the four questions were added. To this score was added a score of from one to three points for sensitivity to the story. Thus a range of scores was possible for any one subject from a low of thirteen to a high of fifty-one. Figure 1 contains a facsimile of the Rating Worksheet. (See Appendix G)

Three graduate students in education rated the responses to the literature selection. The judges did not know the creative thinking, reading comprehension, or intelligence scores for the subjects. Responses of ten children, drawn from the original subject group, served as training material for the judges. While marking the scoring worksheet for the first three subjects, the judges discussed interpretations of the Rating Guide. Responses of seven additional subjects were rated independently by each judge. Following a discussion of any discrepancies in scores, the judges rated responses of the seventy-four subjects of this study. While adhering to the specific criteria and examples provided on the Rating Guide, judges
agreed to score low when in doubt of a rating, and to consider a score of two points as average. Judges agreed not to further compare their ratings until all responses were scored. The judges' scores for each subject were averaged to get a mean score for each subject on the Literature Response Instrument. Because no normal probability of distribution and random sampling could be assumed for such an instrument a nonparametric statistical procedure, Kendall's Coefficient of Concordance, was employed to determine inter-judge reliability and support for the total score obtained for each subject.

An arbitrary acceptance level of .75 was established for inter-judge reliability in scoring the Literature Response Instrument transcripts. Kendall's Coefficient of Concordance was selected to determine the degree of association to three or more sets of rankings. Coefficients for the scales (fluency, flexibility, originality, and elaboration) and total scores ranged between .82 and .94. The criterion for inter-judge reliability for the Literature Response Instrument was thus met. Statistical data for the inter-judge reliability are reported in Appendix H.

Data Analysis

Data used in this study were drawn from raw scores of standardized instruments in creative thinking, reading comprehension, and

---

intelligence, as well as a Literature Response Instrument. Before applying statistical procedures, the data were arranged in rank order for the seventy-four subjects in each test and subtest area (Appendix I). Analysis of the data provided information regarding relationships among the raw score variables.

In order to test the influence of intelligence on verbal and nonverbal creative thinking, reading comprehension, and creative oral response to literature, the Pearson Product-Moment Correlation Coefficient was applied holding intelligence constant. Since scores from the standardized tests measuring these variables met the assumptions of interval data and number size, this parametric procedure was applied.

The Literature Response Instrument scores did not meet the assumption of interval data which would be required to apply parametric statistics, therefore, a nonparametric statistical procedure was applied as a check against the parametric procedures used when intelligence was held constant. Because the proportion of ties within the instrument was high, a correction factor was necessary in order to compute relationships between creative oral responses to literature and variables of verbal and nonverbal creativity, reading comprehension, and intelligence. The Spearman Rho statistical procedure as corrected for ties was applied to the data.

---


125 Siegel. *Nonparametric Statistics.*
Although scores on the standardized measurement instruments met the assumption of interval data, scores on the Literature Response Instrument did not fulfill this requirement for parametric statistical procedures. For this reason and because data for this study were not based on a normal sampling distribution of boys and girls, the Mann-Whitney U-test\textsuperscript{126} for uncorrelated data was used to assess the relationship of sex to other variables. This formula is recommended as a substitute for the t-test.\textsuperscript{127}

**Summary**

In order to examine relationships between verbal and nonverbal creative thinking and reading and intelligence variables, three standardized measurement instruments were administered to a group of seventy-four fourth grade children from one inner-city school. Raw scores of the Minnesota Tests of Creative Thinking, the California Short-Form Tests of Mental Maturity, and the Gates-MacGinitie Reading Survey Comprehension Test were analyzed for statistical relationships to one another and to scores on a Literature Response Instrument. The Literature Response Instrument, an informal measurement of creative oral response to literature, was developed for this study. Using this instrument each child followed the text of a realistic children's book while listening to the text on a tape recording. The child was then asked four questions designed to test creative oral response ability and his answers were tape recorded. Typed transcripts from the interview with each child provided protocols which were scored for creative content by three judges. Specific criteria for judging was
provided through a Rating Guide Sheet. Relationships between sex and scores on each of the four measurement instruments were also analyzed. The following chapter presents the statistical findings of the data obtained from the measurement instruments.
CHAPTER IV
ANALYSIS OF THE DATA

Introduction

The design of this study focused upon the examination of relationships between various manifestations of creative thinking, reading comprehension, and intelligence. Three measures of creativity were employed, thus allowing the study of interaction between children's verbal and nonverbal creative thinking on a paper and pencil test, and creative thinking in response to a realistic literature stimulus on an oral response test.

The study subjects consisted of seventy-four fourth grade boys and girls in an inner-city school. The study attempted to provide a basis for better understanding of the abilities of this group of lower status black children. As previously noted, research in the area of creativity is limited both in regard to lower status black children and to specific relationships between creativity and literal reading comprehension.

In the course of planning this investigation twelve null hypotheses were proposed, as suggested through the theory and research reviewed in the first two chapters of this study. The analysis of the data employed to test these hypotheses will be discussed in this chapter. The hypotheses formulated were stated as follows:
1. There is no statistical relationship between verbal creativity and reading comprehension.

2. There is no statistically significant relationship between nonverbal creativity and reading comprehension.

3. There is no statistically significant relationship between verbal creativity and creative oral responses to a literature selection.

4. There is no statistically significant relationship between nonverbal creativity and creative oral responses to a literature selection.

5. There is no statistically significant relationship between reading comprehension and creative oral responses to a literature selection.

6. There is no statistically significant relationship between verbal creativity and intelligence.

7. There is no statistically significant relationship between nonverbal creativity and intelligence.

8. There is no statistically significant relationship between reading comprehension and intelligence.

9. There is no statistically significant relationship between creative oral responses to a literature selection and intelligence.

10. There is no statistically significant relationship between verbal creativity and sex.

11. There is no statistically significant relationship between nonverbal creativity and sex.

12. There is no statistically significant relationship between creative oral responses to a literature selection and sex.

In studies of creative thinking, correlation coefficients between tests of creative thinking and intelligence range between .02
Correlation coefficients between mental test scores and success in reading are usually reported as ranging between .45 and .55. Previous research indicates a low, positive relationship between creative thinking and reading. Because these relationships between creative thinking and intelligence and reading were low, it was hypothesized that no statistically significant relationships would be found in this study between these variables. Thus, creative thinking and intelligence could be viewed as reflecting separate groups of children.

Results of statistical analyses applied to test the hypotheses of this study are reported on the following pages. Summary statistics reporting the means, standard deviations, and medians yielded by the data obtained from each measurement instrument are shown in Appendix K. Interscale correlations, which indicate the level at which each creativity scale predicts the total test battery, are reported in Appendix J for the Minnesota Tests of Creative Thinking and the Literature Response Instrument.

Relationships between Creativity and Reading Variables with Intelligence Held Constant

The Pearson Product Moment Correlation Coefficient was applied to test the first five hypotheses. Because this investigation was


129 Roughton. "Creativity as a Factor in Reading Achievement," p. 171.
concerned with relationships between measures of creative thinking, reading comprehension, and creative oral responses to literature, it seemed desirable to determine the effect of intelligence on these variables. Hypotheses one through five were therefore tested using a first order partial correlation coefficient holding intelligence constant.

**Hypothesis One.** The hypothesis was rejected, with the finding of a relationship \( r = .36; p < .01 \) between verbal creative thinking scores and reading comprehension scores. As indicated in Table 1, each scale (fluency, flexibility, and originality) in the verbal creative thinking battery correlated at a statistically significant level of .01 with reading comprehension.

**Table 1**

**RELATIONSHIPS OF READING COMPREHENSION WITH CREATIVE THINKING SCALES AND LITERATURE RESPONSE SCALES WITH INTELLIGENCE HELD CONSTANT**

\[ N = 74 \]

<table>
<thead>
<tr>
<th></th>
<th>Minnesota Tests of Creative Thinking</th>
<th>Literature Response Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Verbal</td>
<td>Nonverbal</td>
</tr>
<tr>
<td>Fluency</td>
<td>+.3070**</td>
<td>+.1536</td>
</tr>
<tr>
<td>Flexibility</td>
<td>+.3606**</td>
<td>+.1307</td>
</tr>
<tr>
<td>Originality</td>
<td>+.4119**</td>
<td>+.1708</td>
</tr>
<tr>
<td>Elaboration</td>
<td>**</td>
<td>+.1247</td>
</tr>
<tr>
<td>Total</td>
<td>+.3697**</td>
<td>+.1706</td>
</tr>
</tbody>
</table>

*\( p < .05 \) (\( r \) exceeds 0.232)

**\( p < .01 \) (\( r \) exceeds 0.303)

There is no elaboration scale in the verbal test battery.
Hypothesis Two. The hypothesis was supported. There was no statistically significant relationship ($r = .17; p > .05$) found between nonverbal creativity and reading comprehension. As illustrated in Table 1, no significant statistical correlation was found between any scale (fluency, flexibility, originality, and elaboration) on the nonverbal creative thinking battery and reading comprehension.

Hypothesis Three. The hypothesis was supported. No statistically significant relationship ($r = .08; p > .05$) exists between creative oral response to literature and verbal creative thinking. Examination of Table 2 suggests that no statistically significant relationship was found between scale or total scores.

**TABLE 2**

RELATIONSHIPS OF CREATIVE THINKING AND LITERATURE RESPONSE SCALES WITH INTELLIGENCE HELD CONSTANT

<table>
<thead>
<tr>
<th>Minnesota Tests of Creative Thinking</th>
<th>Literature Response Instrument Scales</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fluency</td>
</tr>
<tr>
<td>Verbal Scales</td>
<td>+.0652</td>
</tr>
<tr>
<td>Nonverbal Scales</td>
<td>+.1157</td>
</tr>
</tbody>
</table>

$^*$ $p < .05$

$^{**}p < .01$

$^{***}p < .001$ A significant relationship was found between the nonverbal scales and the verbal scales.

$^{***}$There is no elaboration scale on the verbal test battery.
**Hypothesis Four.** The hypothesis was supported. No statistically significant correlation ($r = .06; p > .05$) was found between creative oral response to literature and nonverbal creative thinking. As shown in Table 2, neither scale nor total scores were significantly related when creative oral response to literature and nonverbal creative thinking were compared.

**Hypothesis Five.** The hypothesis was supported. No statistically significant correlation ($r = .06; p > .05$) was found between reading comprehension and creative oral response to literature. As indicated in Table 1, neither total creative oral response to literature scores nor the scores of any scale within the instrument were related at a statistically significant level to the reading comprehension scores.

The first five hypothesis tested relationships between creativity and reading comprehension. Only verbal creative thinking was found to have a significant relationship with reading comprehension. No similar relationship was found for the other variables - nonverbal creative thinking and reading comprehension, verbal creative thinking and creative oral response to literature, nonverbal creative thinking and creative oral response to literature, and reading comprehension and creative oral response to literature. Thus, with the exception of verbal creative thinking, creativity variables and reading comprehension apparently are independent of each other.

**Relationships between Intelligence and other Variables**

In order to test hypotheses six through nine, the Pearson Product Moment Correlation Coefficient was applied to the data obtained
from the creativity, reading comprehension, and intelligence instruments. Table 3 provides the relationships found between the California Short-Form Test of Mental Maturity and the following measures: Minnesota Tests of Creative Thinking verbal and nonverbal batteries, Gates-MacGinitie Reading Comprehension Test, and the Literature Response Instrument.

**TABLE 3**

**RELATIONSHIPS BETWEEN INTELLIGENCE AND VARIABLES OF CREATIVITY AND READING COMPREHENSION**

N = 74

<table>
<thead>
<tr>
<th></th>
<th>Pearson Product Moment Correlation Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minnesota Tests of Creative Thinking: Verbal</td>
<td>+.4286**</td>
</tr>
<tr>
<td>Minnesota Tests of Creative Thinking: Nonverbal</td>
<td>+.4318**</td>
</tr>
<tr>
<td>Gates-MacGinitie Reading Comprehension</td>
<td>+.4318**</td>
</tr>
<tr>
<td>Literature Response Instrument</td>
<td>+.1442</td>
</tr>
</tbody>
</table>

*p < .05 (r exceeds 0.232)

**p < .01 (r exceeds 0.303)

Hypothesis Six. The hypothesis was rejected, as shown in Table 3, with the finding of a statistically significant correlation (r = .42; p < .01) between intelligence and verbal creative thinking. As indicated in Table 4, total and scale scores on the verbal creative thinking battery correlated significantly at the .01 level with intelligence.
Hypothesis Seven. The hypothesis was rejected. As indicated in Table 3, a statistically significant correlation ($r = .43; p < .01$) was found between intelligence and nonverbal creative thinking. Correlations of total and scale scores between the nonverbal creative thinking battery and intelligence are reported in Table 4. No significant relationship was found between the flexibility scale and intelligence ($r = .18; p > .01$). Significant relationships were found between intelligence and scales of fluency ($r = .31; p < .01$), originality ($r = .24; p < .05$), and elaboration ($r = .25; p < .05$).

TABLE 4

RELATIONSHIPS BETWEEN INTELLIGENCE AND SCALES OF CREATIVITY VARIABLES

$N = 74$

<table>
<thead>
<tr>
<th>Scale</th>
<th>Minnesota Tests of Creative Thinking</th>
<th>Literature Response Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Verbal</td>
<td>Nonverbal</td>
</tr>
<tr>
<td>Fluency</td>
<td>+.4049**</td>
<td>+.3056**</td>
</tr>
<tr>
<td>Flexibility</td>
<td>+.4289**</td>
<td>+.1877</td>
</tr>
<tr>
<td>Originality</td>
<td>+.4017**</td>
<td>+.2416*</td>
</tr>
<tr>
<td>Elaboration</td>
<td>______</td>
<td>+.2561*</td>
</tr>
<tr>
<td>Total</td>
<td>+.4286**</td>
<td>+.3144***</td>
</tr>
</tbody>
</table>

$^*p < .05$

$^**p < .01$

Hypothesis Eight. The hypothesis was rejected. A statistically significant correlation ($r = .43; p < .01$), as shown in Table 3, was found between intelligence and reading comprehension.
Hypothesis Nine. The hypothesis was supported. No statistically significant relationship ($r = .14; p > .05$) was found between intelligence and creative oral response to literature, as reported in Table 3. Examination of Table 4 reveals that neither total nor scale scores of the Literature Response Instrument correlated significantly with intelligence.

Analysis from the data regarding hypothesis six, seven, eight, and nine give the following results. Intelligence was found to be related to verbal creative thinking, nonverbal thinking, and reading comprehension. However, no significant relationship was found between intelligence and creative oral responses to literature.

Relationships between Sex and Creativity Variables

Using the Mann-Whitney U Test of statistical analysis, comparisons were made of the mean ranks for boys and girls on the creativity measurement instruments to test hypotheses ten through twelve.

Hypothesis Ten. The hypothesis was rejected with the finding that there was a statistically significant relationship between verbal creativity and sex. Girls performed significantly better than boys on the verbal creative thinking test battery. As indicated in Table 5, differences between boys and girls were not significant ($p > .05$) on scales of fluency or flexibility, but were significant ($p < .05$) for originality and the total verbal creative thinking battery, favoring girls.

Hypothesis Eleven. The hypothesis was supported. As illustrated in Table 6, boys and girls did not differ at a statistically significant
level \((p > .05)\) on any scale of the nonverbal creative thinking test battery.

**TABLE 5**

COMPARISON OF BOYS AND GIRLS MEAN RANKS OF CREATIVE THINKING: VERBAL

<table>
<thead>
<tr>
<th>Scale</th>
<th>(\bar{R}_b)</th>
<th>(\bar{R}_g)</th>
<th>(U)</th>
<th>(z)</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluency</td>
<td>34.25</td>
<td>42.27</td>
<td>517.0</td>
<td>1.574</td>
<td>n.s.</td>
</tr>
<tr>
<td>Flexibility</td>
<td>33.55</td>
<td>43.30</td>
<td>486.0</td>
<td>1.915</td>
<td>n.s.</td>
</tr>
<tr>
<td>Originality</td>
<td>30.92</td>
<td>47.15</td>
<td>370.5</td>
<td>3.187</td>
<td>(p \leq .05)</td>
</tr>
<tr>
<td>Total</td>
<td>32.98</td>
<td>44.13</td>
<td>461.0</td>
<td>2.190</td>
<td>(p \leq .05)</td>
</tr>
</tbody>
</table>

\(z_{.05} = 1.96\)

**TABLE 6**

COMPARISON OF BOYS AND GIRLS MEAN RANKS OF CREATIVE THINKING: NONVERBAL

<table>
<thead>
<tr>
<th>Scale</th>
<th>(\bar{R}_b)</th>
<th>(\bar{R}_g)</th>
<th>(U)</th>
<th>(z)</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluency</td>
<td>37.48</td>
<td>37.53</td>
<td>659.0</td>
<td>0.007</td>
<td>n.s.</td>
</tr>
<tr>
<td>Flexibility</td>
<td>39.28</td>
<td>34.88</td>
<td>581.5</td>
<td>0.864</td>
<td>n.s.</td>
</tr>
<tr>
<td>Originality</td>
<td>38.48</td>
<td>36.07</td>
<td>617.0</td>
<td>0.473</td>
<td>n.s.</td>
</tr>
<tr>
<td>Elaboration</td>
<td>38.51</td>
<td>36.02</td>
<td>615.5</td>
<td>0.489</td>
<td>n.s.</td>
</tr>
<tr>
<td>Total</td>
<td>38.42</td>
<td>36.15</td>
<td>619.5</td>
<td>0.445</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

\(z_{.05} = 1.96\)
Hypothesis Twelve. The hypothesis was supported. There was no statistically significant relationship \((p > .05)\) between creative oral response to literature and sex. Comparison results appear in Table 7.

Thus, when hypotheses were tested concerning relationships between sex and the creativity variables, only verbal creative thinking was significantly related to sex. This difference favored girls. More specifically, in respect to the verbal creative thinking scales, girls were found to score significantly higher than boys in originality but not in fluency or flexibility. No significant differences were found between sex and either nonverbal creative thinking or creative oral responses to literature.

**TABLE 7**

**COMPARISON OF BOYS AND GIRLS MEAN RANKS ON LITERATURE RESPONSE**

<table>
<thead>
<tr>
<th>Scale</th>
<th>(R_b)</th>
<th>(R_g)</th>
<th>(U)</th>
<th>(z)</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluency</td>
<td>38.76</td>
<td>35.65</td>
<td>604.5</td>
<td>0.611</td>
<td>n.s.</td>
</tr>
<tr>
<td>Flexibility</td>
<td>39.51</td>
<td>33.88</td>
<td>551.5</td>
<td>1.194</td>
<td>n.s.</td>
</tr>
<tr>
<td>Originality</td>
<td>38.94</td>
<td>35.38</td>
<td>596.5</td>
<td>0.699</td>
<td>n.s.</td>
</tr>
<tr>
<td>Elaboration</td>
<td>38.99</td>
<td>35.32</td>
<td>594.5</td>
<td>0.721</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>39.32</td>
<td>34.83</td>
<td>580.0</td>
<td>0.880</td>
<td></td>
</tr>
</tbody>
</table>

\(z_{.05} = 1.96\)
Summary

Relationships between verbal creative thinking, nonverbal creative thinking, reading comprehension, and creative oral response to literature were determined using a first order partial correlation coefficient which held intelligence constant. Findings for the first five hypotheses follow:

1. There is no statistically significant relationship between verbal creativity and reading comprehension.
   Hypothesis rejected (p < .01).

2. There is no statistically significant relationship between nonverbal creativity and reading comprehension.
   Hypothesis supported (p > .05).

3. There is no statistically significant relationship between verbal creativity and creative oral responses to a literature selection.
   Hypothesis supported (p > .05).

4. There is no statistically significant relationship between nonverbal creativity and creative oral responses to a literature selection.
   Hypothesis supported (p > .05).

5. There is no statistically significant relationship between reading comprehension and creative oral responses to a literature selection.
   Hypothesis supported (p > .05).

Relationships between intelligence and verbal creative thinking, nonverbal creative thinking, reading comprehension, and creative oral responses to literature were analyzed using a product moment correlation coefficient. Findings of the hypotheses were:
6. There is no statistically significant relationship between verbal creativity and intelligence.

Hypothesis rejected ($p \leq 0.01$).

7. There is no statistically significant relationship between nonverbal creativity and intelligence.

Hypothesis rejected ($p \leq 0.01$).

8. There is no statistically significant relationship between reading comprehension and intelligence.

Hypothesis rejected ($p \leq 0.01$).

9. There is no statistically significant relationship between creative oral responses to a literature selection and intelligence.

Hypothesis supported ($p > 0.05$).

Comparison of differences between boys and girls were tested with the following findings:

10. There is no statistically significant relationship between verbal creativity and sex.

Hypothesis rejected ($p \leq 0.05$). Girls scored significantly higher than boys on originality.

11. There is no statistically significant relationship between nonverbal creativity and sex.

Hypothesis supported ($p > 0.05$).

12. There is no statistically significant relationship between creative oral responses to a literature selection and sex.

Hypothesis supported ($p > 0.05$).

This chapter has reported the findings of the statistical analyses used to test the twelve hypotheses of the study. Relationships of reading comprehension and the three creativity measures were analyzed using a product moment correlation coefficient with intelligence.
held constant. Reading comprehension and verbal creative thinking were statistically related ($p < .01$). There were no significant relationships ($p > .05$) between reading comprehension and either nonverbal creative thinking or creative oral responses to literature. No significant relationships ($p > .05$) were found between creative oral responses to literature and either verbal or nonverbal creative thinking.

Intelligence was statistically related ($p < .01$) to verbal creative thinking, nonverbal creative thinking, and reading comprehension. Each of these three variables had an approximate .43 correlation coefficient with intelligence.

Thus, using paper and pencil measures, intelligence had a low, positive relationship with verbal and nonverbal creative thinking, and reading comprehension. However, no significant relationships were found between intelligence and creative oral responses to literature.

A statistically significant ($p < .05$) relationship favoring girls was found between sex and verbal creative thinking. Girls were found to be higher than boys on the originality, but not on the fluency or flexibility scales. No statistically significant relationships ($p > .05$) were found between sex and nonverbal creative thinking or creative oral responses to literature.

Chapter Five presents a discussion of the reactions of subjects and teachers to the measurement instruments. Observations and examples of children's answers to questions on the Literature Response Instrument
are also discussed. Chapter Six, the last chapter, will summarize the study, draw conclusions, and present the implications and recommendations.
CHAPTER V

CHILDREN'S REACTIONS TO INSTRUMENTATION

Introduction

Cultural, emotional, and motivational factors can influence an individual's test performance. "The mere use of paper and pencil or the presentation of abstract tasks having no immediate practical significance will favor some cultural groups and handicap others." Both paper and pencil and oral response measurement instruments were used in this study. To the subjects tasks may indeed have seemed abstract or purposeless. In order to better understand the findings of this study, the following comments from teachers and children are presented.

Reactions to Measurement Instruments

Although the range and dispersion of scores on the Gates-MacGinitie Reading Comprehension Test were similar between the three fourth grade classrooms, testing behavior of the children differed. Children from two classrooms continued working to the time limit for the test. These children guessed missing words from the reading paragraphs when the selections became difficult. In the third classroom children stopped working before the time limit was up, saying

they were tired or that the words were too hard. The teachers attributed this to their individual teaching styles and the ways they encouraged children to work with daily school learning tasks.

In all three classes children followed the directions for taking the reading comprehension test without asking for further instruction.

All three classroom teachers questioned the appropriateness of the reading comprehension instrument for this particular group of children. It was their feeling that words such as porter, destinations, possess, foreshore, horizon, toll, necessary, species, and sheltering were not in the children's reading vocabulary; perhaps not in their speaking or listening vocabularies. The teachers felt this would be true with any standardized reading or intelligence test.

Following administration of the creative thinking test battery, children commented to both the investigator and the classroom teachers that they had enjoyed the exercises. When asked for specific examples, the children offered the following:

Changing the toy was fun because I could do all kinds of things with it.

You could make up all different things without worrying about being wrong.

I could make up all kinds of sentences and put lots of ideas about the cardboard boxes.

I could put many different things to make the toy and the last picture more interesting.

You could draw lots of things with the lines and things and make anything you want out of them.
Some children said they could not easily write sentences in the pattern of asking questions. When describing how he felt about the verbal question asking tasks, one boy remarked, "I didn't like making up questions. They were hard to think of."

The terms "cause" and "consequence" needed clarification before the children were able to comprehend directions for exercises using them. One child helped clarify the directions by providing an example for her classmates: "Like if a girl and a boy be playing together. One hurts the other. Then they be in a fight."

The nonverbal exercises, *Thinking Creatively with Pictures*, were preferred by the children over the verbal exercises. The observations of two boys help explain this:

You can draw a lot of things with it and be different and you don't have to write too much. You can use color or use your pencil.

I heard some kids say the word part was not so fun because you had to write a lot and sometimes they don't like to write.

Children reflected these viewpoints when discussing the *Literature Response Instrument* activity. Without exception the children commented that they were glad they had been able to respond to the four questions about the literature selection using a tape recorder rather than by writing their responses. Such comments raise the question of response validity when children who express a dislike for written tasks must respond to paper and pencil measurement instruments. It may well be that this group of children has an ability to respond in writing that is different than responding orally.
Support of the hypotheses of this study concerning relationships between the oral response instrument and the paper and pencil instruments suggests two possibilities. The method of response for a measurement task may influence the subject's score on the instrument. It is also possible each instrument measured uniquely different or separate creative thinking abilities. This could be caused in part by the difference in stimuli used for the Minnesota Tests of Creative Thinking and on the Literature Response Instrument.

Observations of the Literature Response Instrument

The literature selection used, Goggles!, by Ezra Jack Keats, describes an incident in which three big boys who tried forcibly to get a pair of broken goggles away from two little boys. The little boys and their dog were able, however, to arrive safely home from their hideout in the city by tricking the big boys.

When discussing the literature selection at the close of the interviews, children stated a dislike for the fighting, but a general enjoyment of the book because it was "exciting" and "could really happen." In spite of remarks opposing a fight between the big and little boys in the book, Goggles!, the children most frequently only varied the action when proposing ways in which they would change the story. Three subjects, as example, kept the fight but chose to have the little boys win.

I'd change the part where the big boys knocked the little boy down and make the little boy knock the big boy down.
Change about where the big boy was going to hit him. I'd make it when the little boy is going to hit him, he'd hit the big boy.

When the big boys knocked the little boys down, I'd have the little boys knocking the big boys down. Then they'd run home and start playing with the goggles.

Each of these three responses was suggested in answer to the first question: If you could change any part of the book, what would you change? One subject, a boy, kept the fight and added some form of violence in each response. In his responses the little boys were thrown down a drain, beaten up "bad again", and their hideout was burned. Another subject, a girl, responded to the first question by changing the characters, setting, and object.

I'd change the boys to girls. I change it and it wouldn't be like a dump, it would be like our homes. They'd be playing in a home. They'll be building a playhouse. Somebody would find a doll. They be showing it to everybody. Some girls would try to get it. It would have been up in the bedroom window. The girls would come to the door to try to get it. They wouldn't get it, because the door be locked.

The ending of the story was extended by a girl answering question one.

I would let the boys get caught...the big boys. Their mothers would catch them 'cause they'll be running after the little boys. They'd put them on a punishment, a bad punishment 'cause they've been real bad; like not to let them go outside to play, not to let them go on dates no more, not to let them get any allowance.

A girl eliminated the problem of a fight in her solution to question one.
When they ran to the hideout the dog should have ran straight home and Peter and Archie should have ran straight home with their dog, because there was a hard time there for the dog to run around that thing (fence) and he could have run straight home. If they would have run straight home they would have had no problem.

Ten children selected to change the book by altering the illustrations. Their suggestions included cleaning up the boy's hideout, putting glass in the goggles, changing the drawings of the dog, and adding brighter, "sunny" colors. A boy volunteered that he would like to change the artist of the book. I would make the people more colorful and when you first open the cover of the book I would make it more like the inside of the book.

A girl was quite inclusive in her suggestions for changing the illustrations.

Well, I'd make the goggles have glass in them; and make it light instead of like it's dark. Make it look like it's daytime. Have the dog a little bit bigger.

An examination of the response protocols disclosed several interesting tendencies on the part of the subjects interviewed. With the exception of question four, which called for interaction of oneself with a story character (If you saw Peter after school today, what would you say to him?), dialogue was seldom used. Only nine children supplied dialogue in response to any of the first three questions. An example can be seen in a girl's response to question one.

Those boys came and wanted those goggles from Peter and Archie. I would change that. I'd change it like his mother came over there and said, "You shouldn't take it 'cause it might be somebody elses," and "You aren't going to keep it there."
In response to question two (What do you think Peter and Archie will do next?) a boy used the following narrative and dialogue:

I would have Peter tell his big brother so he could go beat them up. He'd tell him, "These boys kept picking on me and tried to steal my goggles and I tell them my big brother was going to beat them up." If the brother wouldn't do it, he'd say, "I'll go get my uncle," he would do it. When the uncle beat them up Peter would start laughing and they be running through the park crying.

Dialogue also added to another boy's response as he answered question three: What do you think Peter and Archie will do the next time they are at their hideout?

The big boys would be already in there and they'd say, "Get out. This is our hiding place. I found it already."

As can be seen in the preceding responses, children did not always refer to a character by name. References, therefore, are frequently unclear.

Although cause and consequence were frequently implied, they were not often explicated. Examples of carefully explained cause and consequence appeared in the responses of three children to the first question. The first two responses were offered by boys; the third by a girl. In the first response the subject changed the story by having a man lose a pair of goggles which were found by a little boy. The boy returned the goggles and received a reward.

I would change telling about the big boys into a man riding on his motorcycle and he lost his goggles and he saw Peter with his goggles on. Peter would give it to him and say, "I found these goggles on the street." And the man gave him a reward and then he went on home to the hideout.
The story was still more elaborately altered by the second boy.

This child had the big boys take the goggles home and place them on a dresser by a window. The little boys then came by, took the goggles, and replaced them with a cardboard pair, only to later have the big boys get the goggles back.

Well, I'll have the big boys have the glasses and the...I mean, first the two little boys and the big boys were there and all of them saw those goggles and the big boys got there before the little boys did and they got them. The little boys wanted the glasses, but the big boys wouldn't give them to them. So, one day the big boys were at home and the window was open, and they were sleeping and the goggles was up there on the dresser, and one of them little boys went in and got them. He put some cardboard ones up there like them. And the little boys took them home and started playing with them, and told their mother that they found them; but they took them. One day the big boys seen the little boys outside playing with the goggles and they beat them up and take the goggles and go home and eat supper and then go swimming with the goggles.

The big and little boys threw rocks at each other until the little boys escaped by making canes and pretending to be old men in the story changes offered by the girl.

When the two big boys came and Peter and Archie threw rocks at them and they ran. Peter and Archie, they had the glasses; and the big boys saw them and they told them, "Give me the goggles." And Peter and Archie said, "No." They ran to that hiding place and started throwing rocks at them and the big boys started running. They starts throwing rocks back at them. So Peter and Archie, they decide to make up some sticks like a joke like two old men. So they came walking along and the two big boys, they asked Peter and Archie, "Did you know where these two boys are?" And Peter and Archie told them, "They went that-away." So they started running and Peter and Archie ran home.
An example of both dialogue and cause and consequence can be found in the response of a boy to the third question.

Peter burned the hideout 'cause he was playing with matches. He was playing with smoking. His house was made out of straw. He put the matches down and it caught on the straw. He ran on home and Archie said, "Peter, Peter, Peter! Somebody put your house on fire." Peter ran up there and said, "Who did it, Archie? Who did it?" He went over there and Archie said, "You know you did it. You know you did it." And Peter said, "No, I was walking down the street and I saw somebody in there and I ran to tell you and they ran out the back door." And Archie said, "There's no back door. How could you say that?" Peter said, "Well, they did, you can see if you want to." Archie looked at the place then and he found the footprints of Peter.

With one exception the shortest responses received the lowest mean scores by the judges. The five longest interviews (including the preceding response) ranked in the top sixteen scores. Length, therefore, appeared to reflect extreme high and low scores on the Literature Response Instrument, but could not be used as a primary determiner of scores.

Of those children who referred to the goggles in their responses, half (twenty-two) used that term, while half applied the label, "glasses". Another eight children used the two labels interchangeably in their responses. The following response to question three is illustrative:

They might get in a fight because they might fuss over the glasses and they go in the house. Then their mother will separate them from each other by telling Peter not to play with Archie. I guess their mothers would throw away the goggles.
The order in which the questions were presented to different children was rotated so that possible influence of one response on following responses would be equalized. Six children perserverated by continuing an event (i.e., dog killed) or object (i.e., money) from one response to another. No single pattern between question numbers occurred. Although it was anticipated that questions two and three, both regarding prediction, might influence one another, the children seemed to respond to each independently. Whether this resulted because questions were rotated or because questions called for independent responses cannot be determined.

The hesitations made by children, particularly before answering the first and last questions, cannot be seen in the typed protocols. Children often paused while thinking of extensions or elaborations of an idea. When a child seemed to need time to ponder a question he was allowed as much time as he desired. This could be a manifestation of the stages required for a creative process to progress. This may suggest that the inactiveness or seeming lack of attention on the part of a child in a classroom could be an important part of creative thinking.

Summary

This chapter presented a discussion of children's reactions to the measurement instruments used in this study. Children did not appear to have difficulty understanding the directions or mechanics of the reading comprehension test. In two classrooms children guessed
unknown words when the reading selections became difficult. In the third classroom children stopped reading when words in the selections became difficult.

Although children said they liked the verbal creative thinking exercises, a few negative comments were reported. These comments reflected a difficulty in understanding requirements of a specific task and a dislike for writing. Children appreciated the opportunity of responding to tasks without the threat of right or wrong answers. Nonverbal creative thinking exercises were generally preferred more than the verbal creative thinking activities.

Use of a tape recorder in providing oral responses to the literature selection questions appealed to the children. Responses included changes and additions in illustrations, characters, setting, objects, and events. The more common responses altered events used in the literature selection. Children seldom suggested dialogue additions in their responses. Cause and consequence, while implied, were not often explicated. Length of responses reflected, but could not be used to consistently determine, high and low scores. Examples of children's answers were presented in the discussion of their creative oral responses to the literature selection.

Chapter Six contains a summary of the study, conclusions, implications, and recommendations for further research.
Summary

During the past two decades educators have become increasingly concerned with creativity as a factor which is frequently neglected in the efforts to enable children to develop their abilities to the fullest possible extent. In order to better understand the nature of creativity, definitions and descriptions of the creative act and person have been proposed. Measurement instruments and teaching exercises have been developed. Research has been conducted to investigate relationships between creativity, intelligence, school achievement, and personality attributes. Studies pertaining to creativity as it relates to types of creativity stimulated by reading and to lower status black children, which this study examines, are limited in number.

The central purpose of this study was to ascertain whether relationships exist between verbal and nonverbal creative thinking, literal reading comprehension, intelligence, and creative oral response to a literature stimulus. Previous research indicated that little relationship should exist among these factors since they are independent from each other. Twelve hypotheses were formulated in order to test the existence of these relationships.
Since creativity may have operated differently when different types of stimuli and responses were employed, both paper and pencil and oral response measurements were used. The Minnesota Tests of Creative Thinking measured verbal and nonverbal creativity abilities. The California Short-Form Mental Maturity Test was used to obtain intelligence quotients. The Gates-MacGinitie Reading Comprehension Test assessed reading comprehension ability. An informal measurement developed for this study, the Literature Response Instrument, assessed creative oral responses to a realistic literature selection.

Goggles!, a children's picture book by Ezra Jack Keats, fit the criteria of interest appeal, low readability level, and newness for the subjects in this study. Four open-ended questions were developed which would elicit creative responses from children reading and listening to the selection. The subjects in this study each followed the written text and pictures in the book while listening to a taped recording of the text. Each child's oral responses were then tape recorded as he answered the four questions. The typed transcripts of these interviews provided the protocols for the Literature Response Instrument. Three judges, using specific criteria from a Rating Guide, scored the oral response protocols. A coefficient of concordance was calculated yielding interjudge scoring reliability coefficients between .82 and .96 on four creativity scales: fluency, flexibility, originality, and elaboration. Creative reading, as defined for this oral response instrument, was demonstrated by extension beyond the literature selection by the addition of new ideas, problems, and consequence.
Data were collected from seventy-four fourth grade boys and girls in one inner-city school. All of the subjects in the study were black. Forty-seven percent of the children in the school were from families receiving Aid to Dependent Children financial assistance. Subjects in this study, then, were a group of lower socio-economic status black children from one geographic area.

Relationships between the creativity and reading comprehension variables were analyzed holding intelligence constant with a first order partial correlation coefficient.

1. It was hypothesized there would be no statistically significant relationship between verbal creativity and reading comprehension. Hypothesis one was rejected \( r = .36; \ p < .01 \).

2. It was hypothesized there would be no statistically significant relationship between nonverbal creativity and reading comprehension. Hypothesis two was supported \( r = .17; \ p > .05 \).

3. It was hypothesized there would be no statistically significant relationship between verbal creativity and creative oral response to literature. The hypothesis was supported \( r = .08; \ p > .05 \).

4. It was hypothesized there would be no statistically significant relationship between nonverbal creativity and creative oral response to literature. The hypothesis was supported \( r = .06; \ p > .05 \).
5. It was hypothesized there would be no statistically significant relationship between reading comprehension and creative oral response to literature. The hypothesis was supported \((r = .06; p > .05)\).

Relationships were further studied between intelligence and the creativity and reading comprehension variables. Data were analyzed using a product-moment correlation coefficient.

6. It was hypothesized there would be no statistically significant relationship between verbal creativity and intelligence. Hypothesis six was rejected \((r = .42; p < .01)\).

7. It was hypothesized there would be no statistically significant relationship between nonverbal creativity and intelligence. The hypothesis was rejected \((r = .43; p < .01)\).

8. It was hypothesized there would be no statistically significant relationship between reading comprehension and intelligence. The hypothesis was rejected \((r = .43; p < .01)\).

9. It was hypothesized there would be no statistically significant relationship between creative oral response to literature and intelligence. The hypothesis was supported \((r = .14; p > .05)\).

Data were analyzed to determine relationships between the creativity variables and sex.
10. It was hypothesized there would be no statistically significant relationship between verbal creativity and sex. Hypothesis ten was rejected with a difference favoring girls significant at the .05 level.

11. It was hypothesized there would be no statistically significant relationship between nonverbal creativity and sex. The hypothesis was supported.

12. It was hypothesized there would be no statistically significant relationship between creative oral response to literature and sex. Hypothesis twelve was supported.

Conclusions

The results of this study pertain to one group of seventy-four lower status black children. In light of the findings reported in Chapter IV, the following conclusions are drawn in relationship to this group of children:

1. It appears that, when intelligence is held constant, there is a low, positive, but significant relationship between verbal creative thinking and reading comprehension.

2. It appears that, when intelligence is held constant, neither nonverbal creative thinking, nor creative oral response to literature are significantly related to reading comprehension ability.

3. It appears that, when intelligence is held constant, neither verbal nor nonverbal creative thinking are significantly related to creative oral response to literature.
4. It appears that intelligence has a low, positive, but significant relationship to verbal creativity, nonverbal creativity, and reading comprehension.

5. It appears that intelligence is not significantly related to creative oral response to literature.

6. It appears that verbal creativity is significantly related to sex, with the difference favoring girls. There appears to be no significant difference between either nonverbal creativity or creative oral response to literature and sex.

Discussion and Implications

The finding of a low, but positive and significant relationship between verbal creativity and reading comprehension suggests that verbal creative thinking abilities interact with those of reading comprehension. Nonverbal creative thinking abilities and creative oral response to literature abilities do not appear to affect (or be affected by) reading comprehension significantly. Previous research, as reported in Chapter Two, has indicated similar interaction between verbal creative thinking and literal reading comprehension abilities. The present study lends no specific clues to the nature of the interaction. One could hypothesize that creative verbal abilities aid reading comprehension. For example, the child who can project into a large realm of experiences and also can verbalize them with facility, could be expected to comprehend a wider variety of printed material. It is possible that verbal creative thinking ability facilitates reading comprehension by enabling the reader to see new relationships, to consider new possibilities, and to linguistically understand and interpret new sentences.
It is possible the relationship between creative thinking and intelligence may be influenced by the use of paper and pencil tests. Torrance\textsuperscript{132} advises that "at the fourth grade level, scores on group administered tests of creative thinking correlate more highly with scores on tests of intelligence and achievement than scores on individually administered tests." According to Getzels and Jackson, "a fairly specific type of cognitive ability is reflected in performance on a series of paper-and-pencil tests."\textsuperscript{133} This study supports the conclusion that there is a low, positive relationship between intelligence and creativity. When analyzing a child's performance on a test, the content and administration procedures for the test need to be considered in relationship to the child's cultural background and varied abilities.

Although the scoring guide for the Minnesota Tests of Creative Thinking provided the basis for developing specific criteria for rating the Literature Response Instrument protocols, the two instruments may measure different types of creative activity. It is also possible that the subjects react differently to written and oral response tasks. Such seems to be the case when boys and girls' scores are compared.

\textsuperscript{132}Torrance. \textit{Guiding Creative Talent}, p. 59.

\textsuperscript{133}Getzels and Jackson. \textit{Creativity and Intelligence}, p. 16.
On the test of verbal creative thinking girls scored significantly higher than boys on the originality scale and on total verbal creative thinking. Girls also scored higher, although not statistically significant, on both the verbal fluency and flexibility scales. On the test of nonverbal creative thinking and on the creative oral response to literature measurement, there was no significant difference between boys and girls. However, boys' scores slightly exceeded girls' scores. An implication is that boys may be expected to be as creative as girls in tasks other than those requiring reading and writing facility.

Findings of this study indicated that creativity was not a unitary function. Rather, creative thinking abilities seem to exist in different degrees and combinations for individual children. For instance, no statistically significant relationship was found between verbal creative thinking and creative oral responses to literature. This suggests that teachers need to understand various creative thinking strengths of children, such as those investigated in this study, and the influence these abilities may have upon the way a child learns and lives with others in the school situation.

Results of this study indicate that teachers need to provide opportunities for varied modes of stimulus and response in daily school tasks. Problem situations in social science might be presented through films and solved through role playing and discussions which encourage divergent thinking. Objects available in daily living, such
as blocks or cans, could be used as stimuli for children writing to offer alternative and imaginative uses for the object. Incomplete stories could be finished through writing or creative dramatics. Discussions of reading material could raise issues for problem solving. Selections of music or poetry could stimulate creative movement, drama, or art. Thus teachers could provide stimulus and response modalities which encourage development in expression through writing, speaking, art, and music creativity. Children could excel in one mode while further developing another in which they are less talented.

Creative abilities exist within each child. Although this study identified these abilities, rather than ways of fostering their growth, previous studies have indicated ways in which teachers can guide a child's creative development. Lowenfeld and Brittain suggest that teachers facilitate creative growth by guiding children in becoming sensitive to problems, attitudes and feelings of other people; thinking rapidly and freely; changing their thinking as new situations are studied; thinking of novel responses; redefining and organizing ideas; abstracting parts of problems to see relationships; and synthesizing and organizing elements of an idea in a meaningful way. A child who scored low on verbal creative fluency, but high on


originality, might need help in thinking rapidly and freely. Encouragement in thinking of novel responses could foster creative growth for the child who could not extend the literature selection. Results of this study suggest that boys, particularly at the fourth grade level, may need specific guidance in learning to express themselves through verbal creative thinking activities.

In order to facilitate such creative development, Torrance advises teachers to follow five principles:

1. Be respectful of unusual questions.
2. Be respectful of imaginative, unusual ideas.
3. Show children that their ideas have value.
4. Provide practice without threat of evaluation.
5. Tie in evaluations with cause and consequences.

These conditions could aid teachers in encouraging, rewarding, and developing the creative behaviors identified in this study.

Recommendaions for Future Research

Several suggestions can be made for additional research in the general area covered in this study.

1. Relationships between verbal creative thinking, nonverbal creative thinking, and creative response to literature should be studied under conditions where test administration is conducted individually and responses are oral. Findings should be compared

136 Torrance. Rewarding Creative Behavior, p. 43.
with results using the same measurement instruments when all responses are made with paper and pencil.

2. Any replication of this study should involve a larger, randomly selected population. Research should study relationships between creativity of varied types, intelligence, and reading for cross-cultural populations.

3. Further insight into children's learning behavior could be gained through study of relationships between children's oral interaction in the classroom and the variables of verbal and nonverbal creativity, intelligence, and achievement.

4. Relationships between verbal and nonverbal creative thinking, and creative response to both fantasy and realistic literature selections should be studied to determine differences that might exist when the variable of a fantasy literature selection is added.

5. Development of creative thinking abilities should be studied as a result of teaching creative thinking through experimental teacher intervention during oral discussions of literature selections.

6. Relationships should be investigated between verbal and nonverbal creative thinking and creativity as manifested in creative reading, writing, art, dance movement, and informal drama.
This study examined the relationship between variables of creative thinking, reading comprehension, intelligence, and sex. Data was obtained from tests administered to seventy-four lower economic status black children in one inner-city school. Analysis of data, holding intelligence constant, showed a relationship between verbal creativity and reading comprehension, significant at the .01 level. No statistically significant relationships were found between nonverbal creative thinking, creative oral responses to a literature selection, or reading comprehension. Relationships were found at a statistically significant level of .01 between intelligence and the variables of verbal creative thinking, nonverbal creative thinking, and reading comprehension. No statistically significant relationships were found between intelligence and creative oral responses to literature.

Insofar as sex was concerned, girls scored significantly higher than boys (.05 level) on verbal creative thinking tasks. No statistically significant differences were found between sex and either nonverbal creative thinking or creative oral responses to literature.
Appendix A

Minnesota Tests of Creative Thinking:

Thinking Creatively With Words

Thinking Creatively With Pictures
PLEASE NOTE:


UNIVERSITY MICROFILMS.
Appendix C

Worksheet for Application of Spache Readability Formula Grades 1-3

<table>
<thead>
<tr>
<th>Book</th>
<th>Goggles!</th>
<th>Copyright</th>
<th>1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author</td>
<td>Ezra Jack Keats</td>
<td>Publisher</td>
<td>Macmillan</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Page</th>
<th>2</th>
<th>8</th>
<th>12</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>From Archie</td>
<td>From Peter</td>
<td>From Before</td>
<td>From Archie</td>
<td></td>
</tr>
</tbody>
</table>

| 1. Number words | 22 | 22 | 47 | 5 |
| 2. Number sentences | 4 | 3 | 6 | 1 |
| 3. Number words not on Stone Revised Word List | 3 | 5 | 5 | 0 |
| 4. Ave. Sentence Length (Divide 1 by 2) | 5.50 | 7.33 | 7.83 | 5 |
| 5. Per cent hard words (Divide 3 by 1, multiply by 100) | 14% | 23% | 11% | 0% |
| 6. Multiply (4) by .141 | .7755 | 1.0335 | 1.1940 | .7050 |
| 7. Multiply (5) by .086 | .0120 | .0197 | .0094 | .0000 |
| 8. Constant | .839 | .839 | .839 | .839 |
| 9. Estimated grade placement (add, 6, 7, and 8) | 1.626 | 1.891 | 2.042 | 1.544 |

Average grade placement of 4 samples 1.8
Appendix D

Interview Schedule

Introduction: "I would like you to read this book called Goggles! You can listen to it on the tape recorder as you read it. Then I will ask you four questions about it. We will tape record your answers."

Remind the child of the Minnesota Tests of Creative Thinking taken the previous month. Compare with the Literature Response Instrument in that again there are no right or wrong answers.

"Say anything you think of. Be as imaginative as you can."

Reading: Child follows text and pictures in the book as taped recording of the text is played.

Questions: Responses to questions are tape recorded as the child answers each question. Encouragement to extend responses should be limited to "Why?", "What happened then?", and "Can you tell me more about that?"

1. "If you could change any part of the book, what would you change?"

2. "What do you think Peter and Archie will do next?"

3. "What do you think Peter and Archie will do the next time they are at their hideout?"

4. "If you saw Peter after school today, what would you say to him?"
Appendix E

**Literature Response Instrument Protocols**

Each protocol presents summary data for the subject which includes: sex, age, intelligence quotient, *Minnesota Tests of Creative Thinking Verbal* and *Nonverbal* raw scores, *Gates-MacGinitie Reading Comprehension* raw score, and *Literature Response Instrument* raw score. Interview questions and subjects' responses follow.
Subject 1

Sex: Boy
Age: 10-3
I.Q.: 90

Verbal Creative Thinking: 68
Nonverbal Creative Thinking: 138
Gates-MacGinitie Reading Comprehension: 5
Literature Response Instrument: 38.3

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   Yes, I'd change it around. They wouldn't find no goggles. They would find something else. The big boys had something the little boys wanted. They chased them and they got it. Then the big boys started after the little boys. Then the big boys couldn't get it. It was money. The big boys was walking down the street and saw the money. They got it. Then the little boys got it and said, "Ha, ha, we got your money."
   and the big boys started chasing them.

2. What do you think Peter and Archie will do next?
   They would talk about how much fun they had with the big boys, how they tricked them and got their money.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   They be talking about how they got the money and stuff. They would spend the money. They be eating stuff they got with the money and the big boys try to get the stuff they eating. The little boys will fake them with a trick like in the story.

4. If you saw Peter after school today, what would you say to him?
   I'd say, "How did you fake them boys out and get their money?"
Subject 2

Sex: Boy  Verbal Creative Thinking: 2  
Age: 11-5  Nonverbal Creative Thinking: 116 
I.Q.: 100  Gates-MacGinitie Reading Comprehension: 15  
Literature Response Instrument: 35.3

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change?  
I would change telling about the big boys into a man riding on his motorcycle and he lost his goggles and he saw Peter with his goggles on. Peter would give it to him and say, "I found these goggles on the street." And the man gave him a reward and then he went on home to the hideout.

2. What do you think Peter and Archie will do next?  
They'd start talking about the goggles...how nice they were and how fun it was having them. They go play with them and that's the end.

3. What do you think Peter and Archie will do the next time they are at their hideout?  
They would find another thing like the glasses...like sunglasses. They'd keep that. Or a ball. They'd keep them in the hideout under the door.

4. If you saw Peter after school today, what would you say to him?  
"I hope you gave that man back his goggles."
Subject 3

Sex: Boy  Verbal Creative Thinking: 63
Age: 10-0  Nonverbal Creative Thinking: 145
I.Q.: 82  Gates-MacGinitie Reading Comprehension: 13
Literature Response Instrument: 36.3

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?  
Dig a deeper hole and put some shadows and there and take that stuff away (Pointing to picture of hideout.). Because of this stuff looks like junk. I'd make the big boys come to the other two boys' house and take the glasses. Then they'd take them and go on where they were going.

2. What do you think Peter and Archie will do next?  
Make them sitting on the porch sad. After the big boys might take the glasses the little boys would go in the house and sit in chairs and all that stuff.

3. What do you think Peter and Archie will do the next time they are at their hideout?  
The big boys would come next time the little boys was in the hideout to see what they was doing. If they had something else they would take it. Peter and Archie would just sit around and talk about all the beat up stuff. They say, "I wish they never had take those glasses because my mother gave them to me." Then they'd get up and go home.

4. If you saw Peter after school today, what would you say to him?  
"Hi."
Subject 4

Sex: Girl       Verbal Creative Thinking: 45
Age: 10-0      Nonverbal Creative Thinking: 119
I.Q.: 93       Gates-MacGinitie Reading Comprehension: 17
               Literature Response Instrument: 41.3

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   When the two big boys came and Peter and Archie threw rocks at
   them and they ran. Peter and Archie, they had the glasses...and
   the big boys saw them and they told them, "Give me the goggles."
   And Peter and Archie said, "No." They ran to that hiding place
   and started throwing rocks at them and the big boys started
   running. They starts throwing rocks back at them. So Peter and
   Archie, they decide to make up some sticks like a joke like two
   old men. So they came walking along and the two big boys, they
   asked Peter and Archie, "Did you know where these two boys are?"
   And Peter and Archie told them, "They went that-away." So they
   started running and Peter and Archie ran home.

2. What do you think Peter and Archie will do next?
   When Peter and Archie were sitting on the steps they told their
   mother about what happened and she gave them a great award of
   cakes and cookies and ice cream and punch and them lived happy
   ever after.

3. What do you think Peter and Archie will do the next time they
   are at their hideout?
   If Peter and Archie came back and the boys saw them there, then
   Peter and Archie, they run back home and the boys start chasing
after them and they'll probably hide somewhere but the big
boys'll never find them. They won't go to their hideout anymore
but will find another one.

4. If you saw Peter after school today, what would you say to him?
"Why were you there in the hideout while two boys were chasing
you?" "The next time you have a great award, invite me over."
Subject 5

Sex: Boy  Verbal Creative Thinking: 57
Age: 11-5  Nonverbal Creative Thinking: 110
I.Q.: 77  Gates-MacGinitie Reading Comprehension: 37
Literature Response Instrument: 32.7

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   Where the big boys is getting ready to fight the little boys.
   The little boys would run instead of Peter putting up his fists.
   They'd go home.

2. What do you think Peter and Archie will do next?
   The next thing...they might go back over and the big boys might
   start chasing after them and they'd run back home again and sit
   on the front porch and talk about fooling them big boys. They'd
   wear the goggles all day long...or Peter would because he found
   them.

3. What do you think Peter and Archie will do the next time they
   are at their hideout?
   Look for some more goggles. If they found them they'd both have
   a pair of goggles and they'd wear them when they ride their bikes
   to keep the wind out of their eyes.

4. If you saw Peter after school today, what would you say to him?
   Say, "Hi, Peter."
Sex: Boy  Verbal Creative Thinking: 71
Age: 11-1  Nonverbal Creative Thinking: 133
I.Q.: 81  Gates-MacGinitie Reading Comprehension: 27
Literature Response Instrument: 35.0

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change? The part with the big boys chasing the boys with the goggles. Make it so the big boys find them but they just quit chasing them and can't catch them. The little boys would go home...with the goggles.

2. What do you think Peter and Archie will do next? They keep the goggles. If somebody in their family had a motorcycle they could go riding with them.

3. What do you think Peter and Archie will do the next time they are at their hideout? Look for some more goggles. If they don't find any they'll give up and just play around then like they had been doing...hiding go seek and hunt things...and play with the dog.

4. If you saw Peter after school today, what would you say to him? I don't know. I'd say, "Hello," or something like that.
Subject 7

| Sex: Boy    | Verbal Creative Thinking: 34 |
| Age: 9-10  | Nonverbal Creative Thinking: 196 |
| I.Q.: 110  | Gates-MacGinitie Reading Comprehension: 37 |
|            | Literature Response Instrument: 34.0 |

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change?
   I wouldn't change anything.

2. What do you think Peter and Archie will do next?
   They'd go in the house and their mother would tell them to go back outside...two boys wanted them. They went on out and the two boys started chasing them...and they caught up with their father and he made the boys leave them alone. So they went home and back in the house.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   They'd put some more stuff in their hideout...wood or something to sit on and close the door so the big boys wouldn't find them. When it comes night-time they run home.

4. If you saw Peter after school today, what would you say to him?
   "Let's go back to the hideout." He'd probably take me. We'd stay in there and talk.
Subject 8

Sex: Boy  
Age: 9-6  
I.Q.: 102

Verbal Creative Thinking: 50  
Nonverbal Creative Thinking: 152  
Gates-MacGinitie Reading Comprehension: 24  
Literature Response Instrument: 29.0

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   The big boys...well, keep them out of the book and get rid of Willie...because I don't like a weiner dog.

2. What do you think Peter and Archie will do next?
   Wear the goggles...talk...stuff like that with Archie. He'd probably go in the house and do something...with the goggles...probably look at those boys. Or ride his bike with them so he won't get any dirt in his eyes.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   Well, probably look out for these big boys. Well, probably they'd watch for Peter's parents cause they probably wanted him to go to the store and he didn't want to go...and he went to the hideout. He was going to keep from his parents there.

4. If you saw Peter after school today, what would you say to him?
   "Hi." "Good-by."
Subject 9

Sex: Boy  Verbal Creative Thinking: 13
Age: 12-2  Nonverbal Creative Thinking: 149
I.Q.: 99  Gates-MacGinitie Reading Comprehension: 24
        Literature Response Instrument: 34.0

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change?
   The title...Goggles...to A Trip Around the Village. I'd change
   the story to a walk around the village for Peter and Archie.
   They'd look for things...in their hideout.

2. What do you think Peter and Archie will do next?
   Play in the pipe...keep it for their lookout. The goggles would
   be in their house so they would know where they are.

3. What do you think Peter and Archie will do the next time they
   are at their hideout?
   Look out the tower (points to pipe in picture) so they can see
   people follow them...people that think they can get away with
   things...like stealing and shooting. They would watch for things
   that sneak up. They can put the door over the hole so there won't
   be no light. They can have snacks from their house. They can
   make a tunnel going to their house...through the sand. They'd
   run through fast.

4. If you saw Peter after school today, what would you say to him?
   "Hi." I'd say, "That was a hard thing to do."
Subject 10

Sex: Girl  Verbal Creative Thinking: 74
Age: 10-10  Nonverbal Creative Thinking: 142
I.Q.: 93  Gates-MacGinitie Reading Comprehension: 16
Literature Response Instrument: 28.7

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   Peter...If I could I'd have the big boys take the glasses and
   Peter wouldn't have them. The big boys would take them and ride
   a motorcycle.

2. What do you think Peter and Archie will do next?
   Peter would go after the glasses if the big boys had taken them.
   If they knocked Peter down and had got the glasses the big boys
   wouldn't come back.

3. What do you think Peter and Archie will do the next time they
   are at their hideout?
   The big boys might follow them and get the glasses.

4. If you saw Peter after school today, what would you say to him?
   Nothing.
Subject 11

Sex: Boy
Age: 9-6
I.Q.: 107

Verbal Creative Thinking: 83
Nonverbal Creative Thinking: 202
Gates-MacGinitie Reading Comprehension: 8
Literature Response Instrument: 36.3

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   The big boys messing with the little boys. The little boys would mess with the big boys and beat them up. They would get to have the goggles and the big boys would leave them alone then.

2. What do you think Peter and Archie will do next?
   They'd go to the store and buy another pair so the other guy can have some. Next time they go to the hideout both of them will have some.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   Think up a plan to fix the big boys. By beating them up...take sticks...throw rocks.

4. If you saw Peter after school today, what would you say to him?
   "Hi. Will you want to go to the store?" If he did, I'd say, "Come on."
Subject 12

Sex: Girl  Verbal Creative Thinking: 41
Age: 10-8  Nonverbal Creative Thinking: 83
I.Q.: 89  Gates-MacGinitie Reading Comprehension: 9
Literature Response Instrument: 35.3

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change? The part at the end...make it be true that they be going to the gas station and the big boys found the little boys...and they took them away somewhere and then Archie helped Peter get away. He took a stick and hit one of them on the head. Then Peter got away and then he took the stick and hit the rest of them and ran away.

2. What do you think Peter and Archie will do next? They would be talking and Peter would be thanking Archie for helping him get away.

3. What do you think Peter and Archie will do the next time they are at their hideout? Stay there for awhile and have a picnic there...sandwich, apple and Kool-aid, and cookies, and cake. They went to the store to get it. Then they would go back home and they would come back tomorrow and they would do the same thing.

4. If you saw Peter after school today, what would you say to him? I'd tell him about the book he was in. I might ask him, how could I be a help to Archie and him.
Subject 13

Sex: Boy
Age: 10-3
I.Q.: 109

Verbal Creative Thinking: 93
Nonverbal Creative Thinking: 251
Gates-MacGinitie Reading Comprehension: 12
Literature Response Instrument: 34.0

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change?
   I'd change the little guys into men so they could beat the big ones up. Then I want the big ones to be little ones. Then the other ones will beat them up and then they won't be messing with little kids anymore. Then I'd change them back. I'd change the dog's name to Pete.

2. What do you think Peter and Archie will do next?
   Fight them... No... they'd go back to the hideout and fix up the glasses.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   So he'd look different and the boys won't chase them. Then they'd go for a hike.

4. If you saw Peter after school today, what would you say to him?
   I'd tell him I was reading about him. "Hi, Peter." I'd ask him if he's got the glasses... those goggles.
**Subject 14**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex: Girl</td>
<td></td>
</tr>
<tr>
<td>Verbal Creative Thinking</td>
<td></td>
</tr>
<tr>
<td>Age: 9 - 11</td>
<td></td>
</tr>
<tr>
<td>Nonverbal Creative Thinking</td>
<td>93</td>
</tr>
<tr>
<td>I.Q.: 95</td>
<td></td>
</tr>
<tr>
<td>Gates-MacGinitie Reading Comprehension</td>
<td>14</td>
</tr>
<tr>
<td>Literature Response Instrument</td>
<td>34.0</td>
</tr>
</tbody>
</table>

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change?
   I would change the boys that got the goggles and give them to the big boys so that they wouldn't bother the little boys.

2. What do you think Peter and Archie will do next?
   The big boys didn't really go to the park. They went around the corner and they'll go back to the hideout and then find out where Peter and Archie went...and then they'll trap them at the house and get the goggles and then leave.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   The big boys will get them where they're at. They'll trap them and get the goggles and run away.

4. If you saw Peter after school today, what would you say to him?
   I would say that I read about the book where he had the goggles. I would ask him, "Why didn't you give them back, and they would have left you alone."
Subject 15

Sex:  Boy  Verbal Creative Thinking:  113
Age:  9-10 Nonverbal Creative Thinking:  150
I.Q.:  94 Gates-MacGinitie Reading Comprehension:  6
       Literature Response Instrument:  39.3

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change?
   Change the pipe by putting a door in it, so that you could open it and look out the end.

2. What do you think Peter and Archie will do next?
   They might see the boys coming. They would run in the house and lock the door. They would go upstairs and look out the window. The big boys would throw rocks up at the window. The little boys' mother would come home. She would chase the big boys away.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   They would look for toys like a train. They would fix it up and take it home.

4. If you saw Peter after school today, what would you say to him?
   “Are you the one that were in the book about Goggles?” I would ask him his name to see if I was right. Then I would say good-bye.
Subject 16

Sex: Girl  Verbal Creative Thinking: 107
Age: 11-9  Nonverbal Creative Thinking: 110
I.Q.: 96  Gates-MacGinitie Reading Comprehension: 20
Literature Response Instrument: 42.3

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change? The boys...I'd change one girl in it and have one girl and one boy. They would be the little ones. I'd make the big boys be two little boys. I'd change the pictures by making them have more colorful colors on them because some people don't like to look at books without colorful pictures.

2. What do you think Peter and Archie will do next? I think the big boys will find Peter and Archie when they (big boys) go out again. And when they go to school the big boys will bully them again. Then they will run every day after school to go home. Then one day Peter's father told the boys if they don't stand up to them they get a whipping. So then Peter stands up to them and the bullies ran and Peter didn't have any trouble with them. But one of the boys wouldn't stop bullying them so the father came to the school and then he looked at the big boys and started laughing and the boys ran. And Peter said, "My father sure fooled them, didn't he?"

3. What do you think Peter and Archie will do the next time they are at their hideout? They'll be more careful not to let anyone find them. They'll just play and find things and when they find things they'll be careful not to show everyone...not to be a big show-off. They
find camera. It would be real and would work and they would shoot pictures at their father and their friends.

4. If you saw Peter after school today, what would you say to him?

"Hi. Do you like being written in a book? Could I see the goggles?" "What grade are you in? How old are you? What's your hobby?" His hobby is finding things. I'd ask him, "Were the goggles real or were they play?" How did he feel when he first started to be written in a book? Was he happy or was he sad or was he just O.K.?
Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
The hideout...I'd put it somewhere around my house like the backyard...like a tent with furniture and clothes so he could play with his friends.

2. What do you think Peter and Archie will do next?
They'd go in the house and the big boys might come. Peter would give Archie the glasses. He'd put them on and play with them like on a motorcycle...on a chair. They could go to the park, go to the fair or school. It'd feel fine.

3. What do you think Peter and Archie will do the next time they are at their hideout?
The big boys caught them. And took the goggles from them and the little boys start crying and run home and tell their mom and the big boys give the goggles back. Their mother knows the big boys...She's going to go over to their house and gets them to give them back.

4. If you saw Peter after school today, what would you say to him?
"Hi, Peter. Want to come and play with my little brother?"
He'd have to ask his mother.
Subject 18

Sex: Girl  Verbal Creative Thinking: 109
Age: 10-3  Nonverbal Creative Thinking: 172
I.Q.: 100  Gates-MacGinitie Reading Comprehension: 22
Literature Response Instrument: 39.0

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   When the big boys knocked the little boys down...I'd have the
   little boys knocking the big boys down. Then they'd run home
   and start playing with the goggles.

2. What do you think Peter and Archie will do next?
   They'll hunt for some more stuff. They might find money and
   spend it on candy and stuff...about a dollar or a quarter or
   ten cents or a penny.

3. What do you think Peter and Archie will do the next time they
   are at their hideout?
   Their mother and father called them 'cause they left their goggles
   there. The big boys would come to sneak them. Those little boys
   will find the big boys there in their hideout and beat them up.
   The big boys go home crying to their mother. The little boys
   go home laughing.

4. If you saw Peter after school today, what would you say to him?
   "Want to go back to the hideout? See what we can find." This
   is if I was a boy!
Subject 19

<table>
<thead>
<tr>
<th>Sex:</th>
<th>Girl</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age:</td>
<td>10-3</td>
</tr>
<tr>
<td>I.Q.:</td>
<td>102</td>
</tr>
</tbody>
</table>

Verbal Creative Thinking: 193
Nonverbal Creative Thinking: 119
Gates-MacGinitie Reading Comprehension: 27
Literature Response Instrument: 28.7

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   I would change that they didn't see the boys they never would have went through the whole thing if they wouldn't have seen the boys. The big boys wouldn't have seen the little boys. The little boys would be alright with the glasses then and the big boys wouldn't mess with them. They'd keep the glasses or either go see if anyone lost them.

2. What do you think Peter and Archie will do next?
   That they wouldn't see the boys anymore. They would take the glasses around and show everyone what they have.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   They won't yell at the boys about where they're going.

4. If you saw Peter after school today, what would you say to him?
   I'd say, "Where was your glasses?" He would have said, "They're in my home." I'd ask him, "Did you see the boys anymore? Did you run?"
Subject 20

Sex: Boy  Verbal Creative Thinking: 36
Age: 10-5  Nonverbal Creative Thinking: 130
I.Q.: 100  Gates-MacGinitie Reading Comprehension: 8
Literature Response Instrument: 36.0

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
At the end the boys might come back after them and chase them again so they might get a walking stick and tell their mother and father and tell them some boys are trying to take their goggles.

2. What do you think Peter and Archie will do next?
At the end, the boys might come back after them again. I might make the dog big and it might jump and the big boys would get scared and the little boys might go tell their mother or their father...Peter and Archie'll be happy after they tell their mother and father.

3. What do you think Peter and Archie will do the next time they are at their hideout?
Make a motorcycle out of some wheels and some boards. It would not be real. They would be playing on it.

4. If you saw Peter after school today, what would you say to him?
"Did you have fun with your glasses?" He'd say, "Yeah."
Subject 21

Sex: Girl  
Age: 9-8  
I.Q.: 104

Verbal Creative Thinking: 57  
Nonverbal Creative Thinking: 172  
Gates-MacGinitie Reading Comprehension: 23  
Literature Response Instrument: 33.0

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change?  
   If they wanted to get away from these big boys they could crawl through the pipe...or they could have ran through the fence...or crawled under there. They could start for their secret hideout then.

2. What do you think Peter and Archie will do next?  
   They could have stayed there and talked awhile, then they could run back to the secret hideout or over to Peter's house to play with their dog...or play with toys...like trucks.

3. What do you think Peter and Archie will do the next time they are at their hideout?  
   They'd stay and talk about the glasses. They'd watch out for the big boys.

4. If you saw Peter after school today, what would you say to him?  
   "Hi." He'd say, "Hi."
Subject 22

Sex: Girl  Verbal Creative Thinking: 76
Age: 9-8  Nonverbal Creative Thinking: 137
I.Q.: 101  Gates-MacGinitie Reading Comprehension: 10
Literature Response Instrument: 29.7

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change?
   When the big boys tried to get Archie's motorcycle glasses...
   Teach the boys not to play with little kids.

2. What do you think Peter and Archie will do next?
   He'll take the glasses away from Archie and then go for a walk
   with his dog.

3. What do you think Peter and Archie will do the next time they
   are at their hideout?
   They'll make a plan for the big boys...like a trap...a foot
   trap. If one of the big boys stepped into the foot trap they'd
   get caught and then Archie and Peter would get the glasses from
   the big boys and that would teach them a lesson.

4. If you saw Peter after school today, what would you say to him?
   I'd say, "Hi, Peter."
Subject 23

- Sex: Girl  
- Age: 9-7  
- I.Q.: 107

Verbal Creative Thinking: 170  
Nonverbal Creative Thinking: 187  
Gates-MacGinitie Reading Comprehension: 33  
Literature Response Instrument: 37.3

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?  
When they ran to the hideout the dog should have ran straight home and Peter and Archie should ran straight home with their dog, because there was a hard time there for the dog to run around that thing (fence) and he could have run straight home. If they would have run straight home they would have had no problem.

2. What do you think Peter and Archie will do next?  
They'd probably play with them...play like they're on a motor-cycle. They be going to a new hideout where there's a whole lot of boys there. They'd make a idea of what they be going to do the next day like hijacking a plane or something.

3. What do you think Peter and Archie will do the next time they are at their hideout?  
They probably fix their hideout up...put boards against the wall by the hole so nobody would come in.

4. If you saw Peter after school today, what would you say to him?  
"Hi, Peter. How many stories you been in?"
Subject 24

Sex: Boy  Verbal Creative Thinking: 39
Age: 10-7  Nonverbal Creative Thinking: 24
I.Q.: 76  Gates-MacGinitie Reading Comprehension: 11

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   I'd have the glasses on Peter's face. The big boys would stare at him, but they wouldn't try to get them.

2. What do you think Peter and Archie will do next?
   They be in the house. They eat beans, corn bread, meat and then go to sleep.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   They will take food to the hideout. They will eat it. It's a sandwich.

4. If you saw Peter after school today, what would you say to him?
   Ask if he has the glasses. I'd stare at the glasses.
Subject 25

Sex:  Boy  Verbal Creative Thinking:  60
Age:  9-7  Nonverbal Creative Thinking:  123
I.Q.:  99  Gates-MacGinitie Reading Comprehension:  10
        Literature Response Instrument:  23.3

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   No.

2. What do you think Peter and Archie will do next?
   Big boys come by and get the goggles. They'd run with them.
   They'd keep them.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   They'll hide from the big boys...in that hole where they were.

4. If you saw Peter after school today, what would you say to him?
   "Did those big boys get the goggles?" He'd say, "No."
Subject 26

Sex: Girl  Verbal Creative Thinking: 167
Age: 12-11  Nonverbal Creative Thinking: 245
I.Q.: 92  Gates-MacGinitie Reading Comprehension: 20
Literature Response Instrument: 35.3

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
The ending...I would let the boys get caught (big boys). Their mothers would catch them...'cause they'll be running after the little boys. They'd put them on a punishment...a bad punishment 'cause they've been real bad...like not to let them go outside to play...not to let them go on dates no more...not to let them get any allowance.

2. What do you think Peter and Archie will do next?
Archie would put back on his glasses and they would go in Archie's house and start playing...a game...any kind, like a police game. They'd use the goggles...They'll take turns.

3. What do you think Peter and Archie will do the next time they are at their hideout?
They'll play hide-and-go-seek...maybe play it with some of their friends.

4. If you saw Peter after school today, what would you say to him?
"Hi." I'll ask him, "Did the boys get in trouble?" "Did the big boys catch you?"
Subject 27

Sex: Boy  Verbal Creative Thinking: 105
Age: 9-8  Nonverbal Creative Thinking: 203
I.Q.: 92  Gates-MacGinitie Reading Comprehension: 22
Literature Response Instrument: 43.0

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
I would change...I think it was kind of silly about the dog...
when they were talking to the dog and told him to go back to the
park and the big boys heard them from the pipe and there's was
a lot of sand and I don't think they would have heard him
(Peter) from there...and I won't think dogs would have that
much sense to go back to the house where they wanted him to go...
and plus they didn't even tell that they was going back to the
house. And so I would change the part about the big boys
coming around and getting the glasses cause they didn't even
know who they were and they was just trying to take them away
from Peter and the dog and so I'd change that part about the big
boys coming around and saying that those glasses were theirs.

2. What do you think Peter and Archie will do next?
I would put that they went back to the hideout and found another
pair of glasses...and the next day they found another pair of
glasses...and the next day they found another pair of glasses
until they end up with a whole houseful of glasses. Then the
big boys come around and the little boys have a business...and
they have glasses for 50¢...and the big boys come around and
buy some. And Willie and Peter and those say they forgive
them cause they didn't know what they was doing.

3. What do you think Peter and Archie will do the next time they
are at their hideout?

Well, they would go out and show their mother the goggles and
their mother would say, "You should take them back where you
found them because somebody might come back who tried to find
them who had them first...and they might get in trouble...cause
you shouldn't never take something where you find it cause
somebody probably lost it...and when they come back for it they
won't find it." Well, maybe the big boys would find out that
they had a hideout and they'd be waiting for them and they bring
the glasses with them and the big boys jump them and take the
glasses from them.

4. If you saw Peter after school today, what would you say to him?
I would say, "I like the book which you was in. It was called
Goggles. I wonder what happened after you went back to your
parents' house." Then I'd ask him to come back home with me.
Then I'd ask him to stay for dinner, then I'd ask him to spend
the night...and the rest of the week.
Subject 28

Sex: Boy  Verbal Creative Thinking: 27
Age: 9-6  Nonverbal Creative Thinking: 133
I.Q.: 99  Gates-MacGinitie Reading Comprehension: 14
  Literature Response Instrument: 38.7

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   When the boys, Peter, would find the glasses and the big boys
   would knock him out, the big boys would grab them and run away
   with them. Then the little boys would go looking for them...
   and find them. Then Archie and Peter would get the glasses and
   grab them and run away with them to home. Then the big boys
   would come to the house and the mother would say, "What you
   doing?" and then she would call the police.

2. What do you think Peter and Archie will do next?
   They would live happy ever after.

3. What do you think Peter and Archie will do the next time they
   are at their hideout?
   They would find it and Archie and Peter would go and get
   some wood and nail up a new hideout and put some food in it. It
   would be big with TV and all kinds of stuff in it. They would
   watch TV and they would live there. They would have fun together.

4. If you saw Peter after school today, what would you say to him?
   I'd say, "Hi, Peter. Did you get your glasses back." He's say,
   "No." If he had them, I'd say to give them to me then. I would
   beat him up if he didn't give them to me.
Subject 29

Sex: Boy  Verbal Creative Thinking: 95
Age: 9-4  Nonverbal Creative Thinking: 119
I.Q.: 99  Gates-MacGinitie Reading Comprehension: 13
Literature Response Instrument: 42.3

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
The part where the dog ran to the fence. See, I would want the
dog to run to the part where the fence was open so he could run
around the fence to get away. If the big boys ran after him he
could put a fake on them and go to the friend's hideout and
wait there until his friend got there.

2. What do you think Peter and Archie will do next?
I would have Peter tell his big brother so he could go beat
them up...He'd tell him, "These boys kept picking on me and tried
to steal my goggles and I tell them my big brother was going to
beat them up." If the brother wouldn't do it, he'd say, "I'll
go get my uncle," he would do it. When the uncle beat them up
Peter would start laughing and they be running through the park
crying.

3. What do you think Peter and Archie will do the next time they
are at their hideout?
They would watch out for the big guys. They would make sure
they would make a door on the ground so they couldn't come in.
They should make a little window so they could look out to see
if they're coming or not. They would have fun in there...read
books...play with things and do a whole lot of things.
4. If you saw Peter after school today, what would you say to him? I'd say, "Hi, Peter. Is this story true?" If he said, "No," I'd say, "Who wrote it?" He'd say, "Mr. Keats." Then I would say, "Well, that's a good book. I enjoyed reading it."
Subject 30

Sex: Boy  Verbal Creative Thinking: 71
Age: 10-0  Nonverbal Creative Thinking: 161
I.Q.: 93  Gates-MacGinitie Reading Comprehension: 17
         Literature Response Instrument: 34.3

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change? The ending...They (little boys) would go back to their secret hiding place and see if they see the boys and they'll look and see if they see another one of them goggles. If they see one it'd be broken and they'd have to give the other boy one. If the big boys see the hiding place they'll know they can find one themselves.

2. What do you think Peter and Archie will do next? Go and look and see if they can find another one (goggles).

3. What do you think Peter and Archie will do the next time they are at their hideout? Make up plans...all kind of things...plans for the dog. Like when you tell him to come through the pipe...they can get those goggles from him and have another tunnel put to the house. It would go through the ground...under like in a pipe.

4. If you saw Peter after school today, what would you say to him? Tell him would he tell me where his hideout is..."I won't tell nobody." He'll tell me and tell me to promise I won't tell no-one. I'd show him some of my hiding places, too.
Subject 31

Sex: Boy  Verbal Creative Thinking: 84
Age: 9-11  Nonverbal Creative Thinking: 198
I.Q.: 102  Gates-MacGinitie Reading Comprehension: 16
Literature Response Instrument: 37.3

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   I'd change the dog...his mouth and his nose different. I'd leave the rest the same.

2. What do you think Peter and Archie will do next?
   The boys will come to their house and try still to get the goggles. The big boys would get them unless their mother was home and they run in the house. They'll tell their mother and hide somewhere. Their mother would tell the big boys to go on home.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   They build a new hideout in the same place. They paint that door and make it so it can close down on them...on their heads so they can hide. They put some stuff in the hole like little stools and stuff and chairs. So when the door close down they can be sitting on the stools and stuff.

4. If you saw Peter after school today, what would you say to him?
   "I read a book about you...What would you and Archie do if the big boys come to get the goggles to the hideout?"
Subject 32

Sex: Boy
Age: 9-10
I.Q.: 104

Verbal Creative Thinking: 54
Nonverbal Creative Thinking: 207
Gates-MacGinitie Reading Comprehension: 26
Literature Response Instrument: 34.0

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
The little boys, Archie and Peter wouldn't have the goggles. They'd play with knives or a bicycle. But they wouldn't take the bicycle cause it's too big and you'd catch them with it. No big boys. Or if they came the little boys would get on the bike and ride off.

2. What do you think Peter and Archie will do next?
Someone else will come and try to take their goggles. They'll do the same thing again like they did right here (points to book where little boys tricked them).

3. What do you think Peter and Archie will do the next time they are at their hideout?
Whoever is chasing them will find them. Like if a man comes this way around (points to picture) they'll go under the pipe. The man wouldn't see them and they'd go somewhere safe to play.

4. If you saw Peter after school today, what would you say to him?
Tell him I saw him in a story. Tell him about the goggles...that then those boys was chasing him, he got knocked down and the goggles fell out of his pocket...but Willie, he grabbed them and the big boys started chasing him. He'll say, "No, you didn't." I'll say, "I'll show you the book."
Subject 33

Sex:  Boy  Verbal Creative Thinking:  53  
Age:  9-9  Nonverbal Creative Thinking  78  
I.Q.:  107  Gates-MacGinitie Reading Comprehension:  16  
       Literature Response Instrument:  32.0

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   When the big boys was beating up on Archie. I would make Archie beat the big boys and knock them down and the big boys would go away.

2. What do you think Peter and Archie will do next?
   He'd go to show his mother his goggles and then his mother and father would probably ask him where he got it and probably tell him to take them back.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   See if they can find something else...some more goggles. They would just keep them in the hideout so their mother and father wouldn't make them throw them in the trash.

4. If you saw Peter after school today, what would you say to him?
   I would tell him that I read a book that was about him when he found the goggles.
**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change?  
The big boys chasing after the dog...Take the big boys that was chasing the dog out.

2. What do you think Peter and Archie will do next?  
Big boys were trying to catch the little boys. When they see them going to school and after school they follow them home. They'd try and get the goggles...but the dog would take them and run away to the police station. They'd put the big boys in jail cause the dog would show them the big boys.

3. What do you think Peter and Archie will do the next time they are at their hideout?  
Hide...in that big hole. They'd try to keep it quiet.

4. If you saw Peter after school today, what would you say to him?  
Ask him, "Did the big boys catch you?"
Subject 35

Sex: Girl  Verbal Creative Thinking: 151
Age: 9-7  Nonverbal Creative Thinking: 226
I.Q.: 124  Gates-MacGinitie Reading Comprehension: 45
Literature Response Instrument: 40.3

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   I would change the part where the big boys wanted the goggles. I'd change it that they found the hideout and the little boys had to run all the way home. And I wouldn't have Willie. When the one big boy hit Peter I would have had the other boy pick up the goggles and run to the hideout and then Peter would follow him.

2. What do you think Peter and Archie will do next?
   Nothing. I'd make it more of a fairy tale. It'd be underwater. Well, they have a hideout under the water and the goggles would...They found and use to swim underwater. And then the big boys swam down there and wanted the goggles and they could breathe under water too...The big boys wanted the goggles so Peter and Archie picked up the goggles and swam fast to the hideout...like running...and the other boys followed him. And they started running toward them and the little boys got out of the hideout and ran away.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   Well, they dig it a little bit deeper so their heads won't stick out. They'll clear out some of the junk...'cause it's messy.
They'd leave the pipe there so that they could fool someone like they did before.

4. If you saw Peter after school today, what would you say to him? I'd say, "Congratulations, Peter, because you outsmarted those boys."
Subject 36

Sex: Boy  Verbal Creative Thinking: 60
Age: 10-0  Nonverbal Creative Thinking: 144
I.Q.: 90  Gates-MacGinitie Reading Comprehension: 19
Literature Response Instrument: 40.3

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change?
   They...the big boys would make up with the little boys. They can have a [lawcense] and say let's be friends. The little boys would let the big boys keep the goggles for one day. They'd take turns keeping them.

2. What do you think Peter and Archie will do next?
   Those boys might look around and catch the little boys in their hideout because they wanted those goggles. They'd get the goggles, because the little boys would have them in the hideout.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   They might get in a fight because they might fuss over the glasses and they go in the house. Then their mother will separate them from each other by telling Peter not to play with Archie. I guess their mothers would throw away the goggles.

4. If you saw Peter after school today, what would you say to him?
   I'd say, "Hi. How is your mother doing?"
Subject 37

Sex: Girl  Verbal Creative Thinking: 230
Age: 10-3  Nonverbal Creative Thinking: 164
I.Q.: 110  Gates-MacGinitie Reading Comprehension: 19
Literature Response Instrument: 38.0

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change?
   Well, I'd make the goggles have glass in them and...make it light instead of like it's dark...make it look like it's daytime.
   Have the dog a little bit bigger.

2. What do you think Peter and Archie will do next?
   They're going to wear them. They're going to wear them. They going to go and they going to meet the big boys again and they going to start chasing after them again and all the same thing...
   and then they going to go somewhere else and then they going to go home. And every day they go to school or something and come back and go to their hideout...they would see those boys.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   Boys are going to catch them and the dog is going to bite them (big boys) on the leg...and the little boys'll get loose. The goggles will fall off and the big boys will pick them up and the dog will go barking at them and they'll try to hit the dog with the goggles...try to hit him across his face and he'll grab them and then run.

4. If you saw Peter after school today, what would you say to him?
   I'd say, "You still got your goggles" Where's your dog? Where you live?" and all that.
Subject 38

Sex: Boy
Age: 10-3
I.Q.: 99

Verbal Creative Thinking: 101
Nonverbal Creative Thinking: 178
Gates-MacGinitie Reading Comprehension: 21
Literature Response Instrument: 39.3

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
The title...The Boys Who Tried to Steal the Goggles.

2. What do you think Peter and Archie will do next?
The boys would come back. They'd say Peter tricked them and they'd pretend like they was going to take the goggles back.

Archie and Peter and Willie pull another trick on them...a spooky trick...At night time they get some white sheets and throw over them and stuff...and say "Boo" and get some chains and rattle them...in the alley at the parking lot. The big boys would be there.

3. What do you think Peter and Archie will do the next time they are at their hideout?
Did another hole in the hideout so them other boys would follow them and when they fall down they just reach out and take the glasses. They can play marbles in the hideout...They could play a game like me and my cousin play...They could take something and hide it and try to find it.

4. If you saw Peter after school today, what would you say to him?
"I read your book." I'd ask him, "How'd you think of a sneaky trick to get the goggles back? Did you really turn on purpose so they could get you?"
Subject 39

Sex: Girl  Verbal Creative Thinking: 117  
Age: 11-2  Nonverbal Creative Thinking: 153  
I.Q.: 107  Gates-MacGinitie Reading Comprehension: 24  
Literature Response Instrument: 31.7

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change? 
   I'd change it to a scary book. The glasses were bented, and 
   they bring bad luck. They'd bring ghosts in your house and 
   monsters a whole bunch of fish to eat you up. If he took the 
   goggles home his mother...he would move away and he would have 
   to stay by himself with his friends. Peter would make the 
   monsters go away, then he'd bring good luck. And his mother 
   would come back.

2. What do you think Peter and Archie will do next? 
   The big boys would find them sitting on the steps. They would 
   take the glasses away from the little boys. The big guys would 
   chase after them. Then the dog would bite one of them on the 
   behind. Then they'd give the glasses back and then the big 
   boys chase them again.

3. What do you think Peter and Archie will do the next time they 
   are at their hideout? 
   I don't know.

4. If you saw Peter after school today, what would you say to him? 
   I would ask for his autograph...because he's in the book. He'd 
   probably give it to me. I'd tell him that he makes some 
   exciting books.
Sex: Boy
Age: 11-6
I.Q.: 88

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   I'd change the dog into a bigger dog so that the big boys wouldn't come near Peter...then Peter and the other boy would beat up the other boys so that they wouldn't take the goggles.

2. What do you think Peter and Archie will do next?
   He will show the goggles to his mother. Then he tells his mother about him fighting the big boys and she thinks that Peter started it and he gets grounded for a week and then she finds out...and then she tells...and then the big boys find out about Peter and they take the goggles and bust them all up...and then Peter tells his mother...and then Peter finds...Peter's mother goes and tells their mother and they pay for the goggles.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   Look around for more goggles. They found some more stuff they wanted to keep.

4. If you saw Peter after school today, what would you say to him?
   I'd tell him that I was sorry they broke his goggles and ask him if I could see them and then give them right back to him...and then me and him could be friends.
Subject 41

Sex: Girl
Age: 9–11
I.Q.: 102

Verbal Creative Thinking: 97
Nonverbal Creative Thinking: 81
Gates-MacGinitie Reading Comprehension: 25
Literature Response Instrument: 34.3

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   The names...like Archie's name be Peter and Peter's name be
   Archie. The title...about the...put the title like Peter and
   Archie and the Goggles.

2. What do you think Peter and Archie will do next?
   The boys probably find them and they beat them up and take the
   goggles from them and Peter and Archie go tell their mother.
   Then the boys mother go call the other boys' mother and tell
   them what happened. Then they get in trouble. Peter and Archie
   be glad and end up with the goggles.

3. What do you think Peter and Archie will do the next time they
   are at their hideout?
   Make a deeper hold so they can't see them.

4. If you saw Peter after school today, what would you say to him?
   I'd say, "How did you all make the hideout? Why did you all
   want to make a hideout in like a parking lot?" He'll say, "So
   those boys won't find us."
Subject 42

Sex: Girl  Verbal Creative Thinking: 84
Age: 10-3  Nonverbal Creative Thinking: 165
I.Q.: 91  Gates-MacGinitie Reading Comprehension: 8
         Literature Response Instrument: 27.0

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change?
   The title...to *The Hideout*...because they hide so the big boys
   wouldn't find them.

2. What do you think Peter and Archie will do next?
   The boys caught them and beat them up. They (little boys)
   would have gone back to the hideout. Then they run home.

3. What do you think Peter and Archie will do the next time they
   are at their hideout?
   They'll just hide.

4. If you saw Peter after school today, what would you say to him?
   Asked he what happened when he got home. He'd say he got beat
   up the big boys.
Subject 43

Sex: Boy
Age: 9-1
I.Q.: 130

Verbal Creative Thinking: 230
Nonverbal Creative Thinking: 201
Gates-MacGinitie Reading Comprehension: 37
Literature Response Instrument: 50.0

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   Well, yes...by instead of having it about two little boys you
   could have it about two big boys running from two little boys
   that are cowards. Then the little boys will chase the big boys
   and they will start chasing all big boys and they will all get
   beat up. The little boys would end up with the goggles. See,
   I'm changing it around so the big boys are the little boys and
   the little boys are the big boys. Instead of a dog I'd have a
   cat. Then the cat would take the glasses for the big boys.
   Instead of having the hideout they could have a house. It would
   be theirs...the big boys...the ones who have the cat. They
   probably live a normal life there.

2. What do you think Peter and Archie will do next?
   Their mother would come out and say, "Time to eat boys." They
   would go in the house. They'd leave the goggles on the doorstep.
   The little boys would come and take them and they would have
   them. When the other boys came out of the house they would
   start crying because they just wouldn't have them anymore.

3. What do you think Peter and Archie will do the next time they
   are at their hideout?
   Probably take...play tick-tack-toe on that door right there.
   And they would color on the door...they brought colors from
their home. They could go get something to eat and eat it there and sleep there. They'd be afraid because two little boys would be afraid, so they'd go back home. They'd go to bed then.

4. If you saw Peter after school today, what would you say to him? Let's see... I would say, "Would you happen to be Peter in the book named Goggles?" First I would say, "Hi." Then I would say that. If he said, "Yes," I would just say, "Where do you live?" or something like that.
Subject 44

Sex: Girl  Verbal Creative Thinking: 69
Age: 10-1  Nonverbal Creative Thinking: 102
I.Q.: 75  Gates-MacGinitie Reading Comprehension: 16
Literature Response Instrument: 21.7

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
The part where the big boys knocked the little boys down...make the little boy knock the big boy down.

2. What do you think Peter and Archie will do next?
Make them play like they have a motorcycle. The broom would be the motorcycle. They'd pretend to go out in the country. They'd see cows and horses.

3. What do you think Peter and Archie will do the next time they are at their hideout?
They say, "Let's act like we're going to the motorcycle races."
Then they'd make plans.

4. If you saw Peter after school today, what would you say to him?
"What you going to do today?"
Subject 45

Sex: Boy
Verbal Creative Thinking: 28
Age: 11-6
Nonverbal Creative Thinking: 111
I.Q.: 77
Gates-MacGinitie Reading Comprehension: 4
Literature Response Instrument: 40.0

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change? Well, about the whole book...especially about where the little dog go in the pipe...they could have...The big boys could have known where the hideout is. The dog would run around the hole, then come through that door.

2. What do you think Peter and Archie will do next? The big boys will come. Then they going to take off in the house and stand and look out the window. They would hide the goggles in the closet or in a drawer. The big boys would think that the little boys lived somewhere else.

3. What do you think Peter and Archie will do the next time they are at their hideout? Go down there...They might have to go there a different way.

4. If you saw Peter after school today, what would you say to him? "Hi." I might talk to him about when the big boys got him. "Peter, how come those big boys was after you?" and he say,
"Cause we got those goggles." He'll say, "I'll go show you where my hideout is." I'd say, "O.K." but I'd say, "I don't want to go cause the big boys might go and find your hideout and they might see our heads."
Subject 46

Sex: Girl  Verbal Creative Thinking: 21
Age: 10-7  Nonverbal Creative Thinking: 102
I.Q.: 89  Gates-MacGinitie Reading Comprehension: 7
Literature Response Instrument: 20.0

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change?
   
   I don't know.

2. What do you think Peter and Archie will do next?
   
   Ah...maybe someone might come and they might go for another walk and the boys might see them again...and then he'll take the glasses and they won't know he took them and they won't know he snook up on them.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   
   I think they'll leave the glasses home.

4. If you saw Peter after school today, what would you say to him?
   
   I don't know.
Subject 47

Sex: Boy  Verbal Creative Thinking: 5
Age: 11-6  Nonverbal Creative Thinking: 130
I.Q.: 92  Gates-MacGinitie Reading Comprehension: 3
Literature Response Instrument: 41.0

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   I'd change the three big boys. I'd change the glasses and put them in...I'd throw them away. I'd be in the story. I'd throw them away so the big boys won't hurt the little boys.

2. What do you think Peter and Archie will do next?
   The big boys will see them sitting on the steps with the glasses and then the big boys will chase them. They'll run in the apartment. The big boys'll be right behind and run right in the apartment. The little boys going to be hiding somewhere in another room. The big boys'll be looking in all the rooms. Then they'll catch the little boys. Then they'll take the glasses. They'll leave the apartment with the glasses and the little boys never get them back.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   The big boys'll see them. Then they come after them because they seen the glasses. The little boys gave the glasses to the dog. The big boys would leave them.

4. If you saw Peter after school today, what would you say to him?
   I'll ask whether this story is true. I'll ask him, "Did the big boys catch you?" I'll tell him that the story about him was good.
Subject 48

<table>
<thead>
<tr>
<th>Sex:</th>
<th>Girl</th>
<th>Verbal Creative Thinking:</th>
<th>70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age:</td>
<td>9-8</td>
<td>Nonverbal Creative Thinking:</td>
<td>89</td>
</tr>
<tr>
<td>I.Q.:</td>
<td>78</td>
<td>Gates-MacGinitie Reading Comprehension:</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Literature Response Instrument:</td>
<td>29.0</td>
</tr>
</tbody>
</table>

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change?
   The part where those big boys were after those goggles. I would make them be friends. Then they would play with each other. They would share them and let one person wear them on one day and another person wear them on another day and another person wear them on another day.

2. What do you think Peter and Archie will do next?
   Those boys going to come and try to take them again and going to find those boys and run after the little boys. The little boys might go to the police and tell on them.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   They would play cards or something...like fish. Willie would just sit there laying there and going to sleep. They could play hide and seek or something.

4. If you saw Peter after school today, what would you say to him?
   "Did those boys take those goggles from you? How old are you? Where did you live?"
Subject 49

Sex: Girl  Verbal Creative Thinking: 117
Age: 10-3  Nonverbal Creative Thinking: 191
I.Q.: 111  Gates-MacGinitie Reading Comprehension: 17
Literature Response Instrument: 30.7

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   I'd change the bad boys to good boys. They'd say Hi and walk away.

2. What do you think Peter and Archie will do next?
   They would go home and tell their mom about it. She'd probably say they can't go play in the hideout anymore.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   If they went to the hideout again their mom would take the goggles and put them in their room. They couldn't go out for a couple of days.

4. If you saw Peter after school today, what would you say to him?
   "You'd better get home before your mom catches you out." I'd tell him that he's getting in trouble and better get home and his mom be waiting for him. He's not supposed to be out for having trouble with the big boys.
Subject 50

Sex: Boy  Verbal Creative Thinking: 77
Age: 9-7  Nonverbal Creative Thinking: 185
I.Q.: 107  Gates-MacGinitie Reading Comprehension: 21
Literature Response Instrument: 29.3

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change? The part when the big boys tried to take the glasses, I'd make them see if they could use them. Peter would say, "NO."... then the big boys would run after them. I'd keep the rest of the book the same.

2. What do you think Peter and Archie will do next? They tried to go in the house and eat. They'd eat a peanut butter sandwich. They'd try looking at people with the goggles... and playing like they got a motorcycle.

3. What do you think Peter and Archie will do the next time they are at their hideout? Make sure nobody see them...get down low enough nobody can look in down in their hideout. They be down in their hideout with their goggles. They play with their dog.

4. If you saw Peter after school today, what would you say to him? "Hi. How you been feeling?"
Subject 51

Sex: Boy  
Age: 10-4  
I.Q.: 90  

Verbal Creative Thinking: 70  
Nonverbal Creative Thinking: 157  
Gates-MacGinitie Reading Comprehension: 17  
Literature Response Instrument: 34.7

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   I'd change the glasses into a motorcycle. They'd need a key to start it, so they'd ask or look for the key, but they won't find it. They'd take it to the junk yard then.

2. What do you think Peter and Archie will do next?
   They try to go find some more glasses...to wear so they can go around and look at people and say, "I'm cool."

3. What do you think Peter and Archie will do the next time they are at their hideout?
   They'd build a new hideout...take some boards and start building a house. They'd take some matches and cook and make things like play guns. They'd play cowboys and Indians.

4. If you saw Peter after school today, what would you say to him?
   I'd say, "Hello there. How your dog?"
Subject 52

Sex: Boy  Verbal Creative Thinking: 100
Age: 10-2  Nonverbal Creative Thinking: 142
I.Q.: 109  Gates-MacGinitie Reading Comprehension: 21
Literature Response Instrument: 40.7

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
I change the boys to girls. I change it and it wouldn't be like a dump, it would be like our homes. They'd be playing in a home. They'll be building a playhouse. Somebody would find a doll. They be showing it to everybody. Some girls would try to get it. (It would have been up in the bedroom window.) The girls would come to the door to try to get it. They wouldn't get it, because the door be locked.

2. What do you think Peter and Archie will do next?
The boys would never find the glasses that the little boys had. The little boys would hide them somewhere in the house.

3. What do you think Peter and Archie will do the next time they are at their hideout?
They won't show nobody what they found. They'll stay there and play games. Any kind of games.

4. If you saw Peter after school today, what would you say to him?
I don't know. I might ask, "Was he in the story?" "Did you and Archie live in the dump?" It's kind of junky. I'd say, "Why don't you clean it up?"
Subject 53

| Sex: Boy | Verbal Creative Thinking: 104 |
| Age: 10-2 | Nonverbal Creative Thinking: 204 |
| I.Q.: 116 | Gates-MacGinitie Reading Comprehension: 24 |
|          | Literature Response Instrument: 31.0 |

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change?
   I would change that the big boys didn't try to steal the goggles from Archie and Peter. I'd rather have the big boys ask what they were instead of stealing them from them.

2. What do you think Peter and Archie will do next?
   I think that they had went into the house for something to eat and saw the big boys and they got scared so they went back in their secret hideout.

3. What do you think Peter and Archie will do next time they are at their hideout?
   Well, they stayed in there and looked through the hole to see if the big boys were around and they just talked and played around. They was whispering to each other about the boys trying to take the goggles.

4. If you saw Peter after school today, what would you say to him?
   I'd say, "Did those boys really mean to try to take your goggles?" I'd probably tell him if he ever finds something he should always leave it at home...so just in case someone had probably lost them and look for it...and they might notice it and try to take it from him.
Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   About those boys came and wanted those goggles from Peter and Archie. I would change that. I'd change it like his mother came over there and said, "You shouldn't take it 'cause it might be somebody else" and "You aren't going to keep it there."

2. What do you think Peter and Archie will do next?
   The boys was going to come. They take the goggles away from Peter and Archie and then I think Willie will carry on and run around in the front of them...and then try to knock them down...
   Then they may drop the goggles...then they can pick it up and run. So Peter and Archie get the goggles.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   I'd put it that they do things like war and making up some games...and then they can play and go some place and get some eyeglasses...and the goggles could be the eyeglasses. Then they could put in on and play some more.

4. If you saw Peter after school today, what would you say to him?
   I'd say, "Where's the goggles?" because I want to see how they look. I'd ask him, "Did you ever saw those boys?" and how they ran away from him and stuff.
Subject 55

Sex: Girl  Verbal Creative Thinking: 28
Age: 10-5  Nonverbal Creative Thinking: 111
I.Q.: 78  Gates-MacGinitie Reading Comprehension: 4
Literature Response Instrument: 37.3

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   Let the big boys catch the little boys and take the goggles from them. Then they beat the little boys up and leave. The big boys would keep the glasses. Peter and Archie would get out of the drain where the big boys had thrown them and they would look for the big boys. When they found the big boys they would ask the boys for the goggles. Then they buyed off the big boys and got the goggles.

2. What do you think Peter and Archie will do next?
   The boys would come there and chase the little boys in their house and beat them up bad again. Then the little boy's mother and father would come. And the police would come and take the big boys to the detention home.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   They tear it up 'cause the big boys had burned it down. Peter and Archie would have to make a new hideout. The new one would be better. They would have a lot of furniture and stuff like couch and chairs and piano and tables. They would steal it. They will keep it underground.
4. If you saw Peter after school today, what would you say to him?
I'd grab Peter and beat him up 'cause when I seen him before he didn't give me the goggles.
**Subject 56**

<table>
<thead>
<tr>
<th>Sex: Girl</th>
<th>Verbal Creative Thinking: 96</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age: 9-10</td>
<td>Nonverbal Creative Thinking: 231</td>
</tr>
<tr>
<td>I.Q.: 110</td>
<td>Gates-MacGinitie Reading Comprehension: 23</td>
</tr>
<tr>
<td>Literature Response Instrument: 44.0</td>
<td></td>
</tr>
</tbody>
</table>

*Literature Response Instrument Protocol*

1. If you could change any part of the book, what would you change? The part where the boys wanted the goggles...I would make it a little girl who comes along...and the boys drops the goggles... and the girl finds it and goes home with it. He'll be looking for it and go back into the hideout and then he starts to look for them but doesn't find them.

2. What do you think Peter and Archie will do next? He would find out who took his goggles and he'll ask for them and the girl will give them back to him and they'll both be friends and then they'll share the goggles.

3. What do you think Peter and Archie will do the next time they are at their hideout? Look for the goggles. Find something else...like some money... They'll put an ad in the paper and say "Whoever finds the goggles and brings them back, I'll have a reward for you."

4. If you saw Peter after school today, what would you say to him? "Hi, Peter. Are you going to go back to your hideout and look for some more stuff and some good things to find?" "The next time you go can I go with you and help you find some stuff to look for?"
Subject 57

Sex: Boy
Age: 10-9
I.Q.: 91

Verbal Creative Thinking: 111
Nonverbal Creative Thinking: 320
Gates-MacGinitie Reading Comprehension: 13
Literature Response Instrument: 27.0

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
Big boys running after the little ones...I'd make the big boys
not get after the two little boys and go and mind their own
business.

2. What do you think Peter and Archie will do next?
They make something out of the tunnel and stuff...a truck. Take
a pipe and take a door and put it up on top of the thing...down
at the bottom there's a hole, so put that on top of the hole.
And if someone comes they can look out the pipe.

3. What do you think Peter and Archie will do the next time they
are at their hideout?
I don't know. Go in and have some fun and if the big boys might
come in...and they might take those two boys and beat them up
and take the dog. Then they might take the door and make
something out of it (the big boys).

4. If you saw Peter after school today, what would you say to him?
Tell him, "How are you? How are you doing in school?"
Subject 58

Sex: Girl  Verbal Creative Thinking: 181
Age: 10-0  Nonverbal Creative Thinking: 142
I.Q.: 109  Gates-MacGinitie Reading Comprehension: 32
Literature Response Instrument: 29.0

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   Peter's name...to Larry. The dog's name...to Duke.

2. What do you think Peter and Archie will do next?
   They'd try to find a motorcycle to ride because they found the goggles and they don't have anything to do with them. They won't find one though. So they'll make something with the goggles. Maybe they'd make a hat with them.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   Watch out for the big boys because they might come around any time. Peter and Archie would watch through their pipe. If they saw them coming they'd hide under the fence. They'd leave a hole in it so they could see.

4. If you saw Peter after school today, what would you say to him?
   "What did you do with your goggles, Peter?"
Subject 59

Sex: Boy  Verbal Creative Thinking: 77
Age: 10-4  Nonverbal Creative Thinking: 128
I.Q.: 90  Gates-MacGinitie Reading Comprehension: 10
Literature Response Instrument: 35.3

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change? Part where those big boys came in. I'd take them out and put some little guys in. They'd look big. Well, for one thing, little ones under my age couldn't get away that far if they ran...they couldn't even know what to do with the goggles...They wouldn't even know what they go to.

2. What do you think Peter and Archie will do next? If the big boys were still around they would come down the street trying to find them looking all over the place...and the little kids would run in the house. They would stay in there and make sure nobody would get in. They would put some things in front of the door.

3. What do you think Peter and Archie will do the next time they are at their hideout? They'd try to (big boys) beat them up to tell them where the goggles are. Peter and Archie would tell, but they would get the goggles back from the big boys because the mother and father would come down and find the big boys like on a motorcycle somewhere and get them back...They'd find something else...like the battery of a motorcycle or something like that. They'd try to put a motorcycle together. They'd try to go get their
father and mother to help them. Then they'd see if it'd work. If they were good mechanics, they might get it to work. It'd be too heavy and big for them to drive it.

4. If you saw Peter after school today, what would you say to him? "You'd better run, little shrimp." He'd start running.
Subject 60

Sex: Boy  Verbal Creative Thinking: 184
Age: 10 = 3  Nonverbal Creative Thinking: 159
I.Q.: 100  Gates-MacGinitie Reading Comprehension: 17
Literature Response Instrument: 32.3

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change?
   I would change the big boys chasing the little boys. I would make the big boys live somewhere and make the little ones live another place. I'll have Peter and Archie live next door to each other and the big boys like somewhere else. They would meet somewhere and the little boys would run home and the big boys couldn't come that far.

2. What do you think Peter and Archie will do next?
   They might lose them again and the big boys would come and the big boys would take the goggles. And then the dog would chase them and grab the goggles and bring them back.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   They would duck low so no one could see them...or the goggles.

4. If you saw Peter after school today, what would you say to him?
Subject 61

Sex: Boy
Age: 9-8
I.Q.: 106

Verbal Creative Thinking: 84
Nonverbal Creative Thinking: 170
Gates-MacGinitie Reading Comprehension: 10
Literature Response Instrument: 44.3

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change?
   I would change at the end where the little boy was running and at the end where he and the dog was running. That was wrong because when he told the dog to come that was wrong, because the big boys seen the dog running and they thought it was a rat. So they started chasing. The little boys said, "Let's go to the parking lot. Come on, Willie, let's go to the parking lot." So when they went to the parking lot they fooled the big boys and the big boys went on and Archie and Peter went home and the big boys could have went through the parking lot and split up and went around and hunted for the little boys. They could have caught each other and the big boys could have beat them up, and took their glasses and went about their business, so they could have did that. The big boys would have ended up with the glasses.

2. What do you think Peter and Archie will do next?
   I think they going to go home...back in the club house and play. The big boys might find them with the glasses. They might have the glasses on. Or the big boys might see them and beat them up and tell them to go get the glasses. The little boys wouldn't get the glasses because they's too chicken to.
They's too scared. They afraid the big boys might follow them home and break in their home and steal their furniture and all their money and so they didn't go get the goggles. They went somewhere else instead of to Peter's house.

3. What do you think Peter and Archie will do the next time they are at their hideout? They will probably tear their hideout up...and break it up and try to kill their dog...the big boys might do this...but the dog might run and try to get away. The big boys might throw a brick at him and hit a car and have to go to court. Peter and Archie are going to have to be a witness 'cause they was with the big boys. They would not like that 'cause later the big boys would beat on them. And they were littler and would get bloody noses and black eyes, and they wouldn't want that, so they wouldn't want to be a witness.

4. If you saw Peter after school today, what would you say to him? I ask him how he would feel from the big boys beating him up. He'd say, "Bad." then he'd walk away with the little dog if he still had him.
Subject 62

Sex:  Girl    Verbal Creative Thinking: 95
Age:  10-3    Nonverbal Creative Thinking: 110
I.Q.: 97    Gates-MacGinitie Reading Comprehension: 31
Literature Response Instrument: 36.3

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   The name...Instead of Goggles, I'd change it to Glasses. I'd change the hideout to make it look more better...Move the door and put furniture down in the hole. They'd take out their old junk and when they go play in their hideout they can go sit down and sit on the furniture.

2. What do you think Peter and Archie will do next?
   That Peter might let Archie have the glasses. Then Archie probably will start talking with Peter about what happened...about the big boys and the hideout.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   Then they'd go back to the hideout and play. They might play baseball or play ball with their dog. Probably the big boys would come by and try to start a fight and the little boys would run back home.

4. If you saw Peter after school today, what would you say to him?
   I'd tell him my name and ask him what happened to him and Archie and did he let him have the goggles and did they faint.
Subject 63

Sex: Boy  
Age: 10-11  
I.Q.: 79  

Verbal Creative Thinking: 67  
Nonverbal Creative Thinking: 116  
Gates-MacGinitie Reading Comprehension: 12  
Literature Response Instrument: 40.0

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   I would change that those two boys was just walking along and
   the big boys would say, "I hear something, I hear something."
   and they peeked around the corner and they saw the little boys
   and they both carried them around the corner and started beating
   on them and they took the goggles away.

2. What do you think Peter and Archie will do next?
   His dog would take his goggles away from him and take them to
   the big boys. Then probably the big boys would be beating on
   the dog and kick the dog and tell the dog to go away. The
   goggles be gone forever.

3. What do you think Peter and Archie will do the next time they
   are at their hideout?
   The big boys would be already in there and they'd say, "Get out.
   This is our hiding place. I found it already."

4. If you saw Peter after school today, what would you say to him?
   "What happened Peter, you have two black eyes?" He'd say,
   "Well, I can't explain that, so, 'bye."
Subject 64

Sex: Boy  Verbal Creative Thinking: 38
Age: 10-5  Nonverbal Creative Thinking: 118
I.Q.: 93  Gates-MacGinitie Reading Comprehension: 6
Literature Response Instrument: 26.7

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   About where the big boy was going to hit him. I'd make it
   when the little boy is going to hit him, he'd hit the big boy.

2. What do you think Peter and Archie will do next?
   That the boys find them and then they would take the glasses.
   Then the father would come home and Peter would tell his father
   and his father would go and get the glasses back.

3. What do you think Peter and Archie will do the next time they
   are at their hideout?
   Put a big hole so they could see if the big boys were coming.

4. If you saw Peter after school today, what would you say to him?
   I would ask him, "How did you make the book? How did you
   appreciate the colors on the book?"
Subject 65

Sex: Girl  Verbal Creative Thinking: 75
Age: 9-6  Nonverbal Creative Thinking: 135
I.Q.: 96  Gates-MacGinitie Reading Comprehension: 16
Literature Response Instrument: 32.7

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
The dog into a cat 'cause cats can find more things than dogs.
The cat would find things. I'd change the glasses into a parrot that the little boys would find.

2. What do you think Peter and Archie will do next?
The big boys might come up and find them. They start fighting and the big boys would take the goggles from the little boys and the little boys would come after them. One boy was running with the goggles and the big boys stopped the little boys from running. The little boys got the goggles back by running after the big boys and knocking them down when the dog bit them. They took the goggles and ran home.

3. What do you think Peter and Archie will do the next time they are at their hideout?
They look for stuff and find a piece of a car.

4. If you saw Peter after school today, what would you say to him?
Nothing.
Subject 66

Sex: Girl   Verbal Creative Thinking: 43
Age: 9-9   Nonverbal Creative Thinking: 194
I.Q.: 98   Gates-MacGinitie Reading Comprehension: 11
Literature Response Instrument: 20.7

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change?
   I'd write a hopscotch on this (points to sidewalk picture at end).

2. What do you think Peter and Archie will do next?
   I don't know...go back to their hiding place.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   They might see those boys. They might pull another trick on them. Then they might go back home.

4. If you saw Peter after school today, what would you say to him?
   "Hi."
### Subject 67

<table>
<thead>
<tr>
<th>Sex:</th>
<th>Boy</th>
<th>Verbal Creative Thinking:</th>
<th>39</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age:</td>
<td>10-2</td>
<td>Nonverbal Creative Thinking:</td>
<td>105</td>
</tr>
<tr>
<td>I.Q.:</td>
<td>102</td>
<td>Gates-MacGinitie Reading Comprehension:</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Literature Response Instrument:</td>
<td>36.0</td>
</tr>
</tbody>
</table>

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change?
   
   Well, I'll have the big boys have the glasses and the...I mean, first the two little boys and the big boys were there and all of them saw those goggles and the big boys got there before the little boys did and they got them. The little boys wanted the glasses, but the big boys wouldn't give them to them. So, one day the big boys were at home and the window was open, and they were sleeping and the goggles was up there on the dresser, and one of them little boys went in and got them. He put some cardboard ones up there like them. And the little boys took them home and started playing with them, and told their mother that they found them (but they took them). One day the big boys seen the little boys outside playing with the goggles and they beat them up and take the goggles and go home and eat supper and then go swimming with the goggles.

2. What do you think Peter and Archie will do next?
   
   They would go bowling or swimming or go play football. They would keep the goggles home in a drawer.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   
   They'll take some dirty, raggety clothes and dig another tunnel through there and make another hideout.
4. If you saw Peter after school today, what would you say to him?

"What happened to your goggles?"
Subject 68

Sex: Boy
Age: 10-8
I.Q.: 77

Verbal Creative Thinking: 98
Nonverbal Creative Thinking: 265
Gates-MacGinitie Reading Comprehension: 18
Literature Response Instrument: 38.0

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?

About the boy, where he was in a hole...where he was down in
the hole looking through a pipe and his dog was over there in
the corner. He called his dog and told him to go to the parking
lot. While they did they'd get away and go home. I'd change
because I'd let them catch him and then they get the glasses
and then they (big boys) keep them. The little boys would try
to get them back.

2. What do you think Peter and Archie will do next?

How the story ended...where they came looking for the little
boys and found them...came walking past their house and saw them
sitting up there with the glasses on and took them from them
and started to run...and the little boys ran after them. They
didn't get them back.

3. What do you think Peter and Archie will do the next time they
are at their hideout?

Then they see the big boys. They grab the glasses if they see
them (big boys) and then they drop them and they run and go
through the hole where the dog went through.

4. If you saw Peter after school today, what would you say to him?

"How'd you get your glasses back?" "Did you have a hard time?
Next time don't let the bullies take them."
Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?

I would like to change the whole book. I like to change the artist of the book. I would make the people more colorful and when you first open the cover of the book I would make it more like the inside of the book. I'd like to change guys beating up on little people, and Peter with the big boys tearing his house and taking his glasses and beating up on him and fighting and scaring Peter. Peter calls them a big "Card". Peter's dog would be killed. The big boys would know they did wrong but threwd him in the river and the dog drowned. Peter told his mother and father and they didn't do nothing. He found his glasses on the floor broken 'cause the big boys came over and found the glasses. Peter cried and screamed. His mother and father came in and said, "Peter, why you screaming?" He said, "They killed my dog." Mother and father got him for telling a story. When he was going to school his friends came over and they gave him this radio that was stoled and the police came over and picked him up and his mother and father got him for that. Then Peter went to the beach and saw this crayon and this man said he could play with them. Peter broke the crayon. The man came over and said, "Why you broke the crayon?"
He said, this other boy said it was his and that he was telling a story. Peter got in trouble for walking in a store 'cause a boy acted like he was store manager, and when Peter said, "Can I get a bottle of pop?"...and he went in and got a bottle of pop. A man caught him for stealing.

2. What do you think Peter and Archie will do next?

Peter and Archie were sitting on the steps and their dog was down there and they didn't know what happened to it. They thought it was dead. They patted on its back side and it bled. Peter started hollering and his mother came out and said, "What's the matter?" and they buried the dog.

3. What do you think Peter and Archie will do the next time they are at their hideout?

Peter burned the hideout 'cause he was playing with matches. He was playing with smoking. His house was made out of straw. He put the matches down and it caught on the straw. He ran on home and Archie said, "Peter, Peter, Peter...Somebody put your house on fire." Peter ran up there and said, "Who did it, Archie? Who did it?" He went over there and Archie said, "You know you did it, you know you did it." and Peter said, "No, I was walking down the street and I saw somebody in there and I ran to tell you and they ran out the back door." And Archie said, "There's no back door. How could you say that?" Peter said, "Well, they did, you can see if you want to." Archie looked at the place then and he found the footprints of Peter.
4. If you saw Peter after school today, what would you say to him?
I say, "Peter, these boys that be messing with you, they ain't no good for you. Don't pay any attention to them, because all they are is trouble."
Subject 70

| Sex: Girl | Verbal Creative Thinking: 57 |
| Age: 9-6 | Nonverbal Creative Thinking: 215 |
| I.Q.: 99 | Gates-MacGinitie Reading Comprehension: 18 |
|          | Literature Response Instrument: 40.0 |

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change? The way it ends. When they got home with the glasses they should have went inside with them.

2. What do you think Peter and Archie will do next? If the big boys came they'd go in and tell their mother and she'd tell the big boys to give the glasses back. The next day if the little guys were in the hideout the big guys would come back and start beating on them.

3. What do you think Peter and Archie will do the next time they are at their hideout? They'd make a better place to hide...like get some wood and some more things...and then they'd put them together and make a bigger house with a lock on the door. They'd...have secret...like if one boy was out and had to do some work at home and then they'd make some like passwords...like you knock on the door two times or one time and then you'd know if your buddy's coming in or if it's the bullies.

4. If you saw Peter after school today, what would you say to him? "Did you get to keep you glasses? Did the bullies mess with you anymore? Next time when the bullies come you can make a clubhouse and you can have codes and know if your buddy's coming in or bullies."
Subject 71

Sex: Boy  Verbal Creative Thinking: 61
Age: 10-9  Nonverbal Creative Thinking: 182
I.Q.: 93  Gates-MacGinitie Reading Comprehension: 18
Literature Response Instrument: 38.0

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change?
   I'd turn it into a summer book so the sun would start coming.
   I'd be making mostly all the pages be sunny...kids outside
   playing...playing with jacks and stuff. Mostly I'd change the
   colors.

2. What do you think Peter and Archie will do next?
   They'd go out again and somebody else would try to take them
   and it'd be the same old trouble. Some other big boys really
   get the glasses and they go home and keep the glasses.

3. What do you think Peter and Archie will do the next time they
   are at their hideout?
   They wouldn't go...unless the big boys didn't know that they
   got a hideout there. And then they could have a new hideout...
   if they knew.

4. If you saw Peter after school today, what would you say to him?
   "Where's your glasses?" He would try to run or walk away
   because he might think I was going to take the glasses.
Subject 72

Sex: Girl  Verbal Creative Thinking: 112
Age: 10-4  Nonverbal Creative Thinking: 219
I.Q.: 86  Gates-MacGinitie Reading Comprehension: 22
Literature Response Instrument: 38.0

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   That the big boys wouldn't bother Peter...That their father
   would get a motorcycle and they would let him use the goggles.
   Their father would take them for a ride on it...to the Whooper
   or to the store or bowling alley...something like that. They'd
   get a cheesburger and a milkshake and some fries.

2. What do you think Peter and Archie will do next?
   They probably tell their mother about it...about what they'd
   done. And their mother and father might make them give them
   back to the kids that they belong to.

3. What do you think Peter and Archie will do the next time they
   are at their hideout?
   Willie might give them away...by barking or running out. Then
   everybody would know their hideout and they would have to find
   somewhere else.

4. If you saw Peter after school today, what would you say to him?
   "Does Willie bite?" and does he got a friend named Archie, and
   does he really have a dog named Willie, and does he really have
   a dog? Did he really find those goggles?
**Subject 73**

<table>
<thead>
<tr>
<th>Sex:</th>
<th>Boy</th>
<th>Verbal Creative Thinking:</th>
<th>99</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age:</td>
<td>9-8</td>
<td>Nonverbal Creative Thinking:</td>
<td>171</td>
</tr>
<tr>
<td>I.Q.:</td>
<td>93</td>
<td>Gates-MacGinitie Reading Comprehension:</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Literature Response Instrument:</td>
<td>29.3</td>
</tr>
</tbody>
</table>

**Literature Response Instrument Protocol**

1. If you could change any part of the book, what would you change?
   The pictures...making little glasses instead of big ones...the way dog is going up like that (Points to dog's nose)...more like this one (demonstrates more rounded nose).

2. What do you think Peter and Archie will do next?
   Some big boys will come and try to get in a fight with the little boys because they're going to try to take the glasses off of them. Then the little boys going to try to run and hide from them...maybe in the alley.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   First they will check to see if anybody's coming like them big boys so they'll know so they can lock the door.

4. If you saw Peter after school today, what would you say to him?
   I would say, "Hi, how are you?" I'd ask him, "Did the big boys catch you yet?"
Subject 74

Sex: Boy
Age: 11-0
I.Q.: 93

Verbal Creative Thinking: 56
Nonverbal Creative Thinking: 115
Gates-MacGinitie Reading Comprehension: 20
Literature Response Instrument: 38.0

Literature Response Instrument Protocol

1. If you could change any part of the book, what would you change?
   I'd change the goggles...into sunglasses so he could put them on when the sun comes out. The little boys would stay in the hideout when the big boys come. They'd make sure the big boys don't follow them.

2. What do you think Peter and Archie will do next?
   Make the dog some goggles. Archie would make them out of old glasses he'd probably find in his mother's bedroom.

3. What do you think Peter and Archie will do the next time they are at their hideout?
   They might go to the hideout and play secret agent...play tag. They'd pretend like they got guns and use sticks and they have a wheel from the steering wheel out of a car...and they'd have a ladder to come up out of their hideout.

4. If you saw Peter after school today, what would you say to him?
   "Hi. Let's go to the hideout." He'd say "O.K." and we'd play secret agent.
Appendix F

**Literature Response Rating Instrument**
## Literature Response Rating Instrument

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fluency:</strong> Number of ideas</td>
<td><strong>Fluency:</strong> Number of ideas</td>
</tr>
<tr>
<td>1 One idea</td>
<td>1 One idea</td>
</tr>
<tr>
<td>2 Two or three ideas</td>
<td>2 Two or three ideas</td>
</tr>
<tr>
<td>3 Four or more ideas</td>
<td>3 Four or more ideas</td>
</tr>
<tr>
<td>1 Direct retelling of story One of categories used</td>
<td>1 Direct retelling of story One of categories used</td>
</tr>
<tr>
<td>2 Two or three categories used</td>
<td>2 Two or three categories used</td>
</tr>
<tr>
<td>3 Four or more categories used</td>
<td>3 Four or more categories used</td>
</tr>
</tbody>
</table>

### Categories:

- Character changed, added or deleted
- Setting changed
- Events or actions changed
- Appearance of character changed
- Objects changed, added or deleted
- Emotions discussed
- Dialogue added
- Time changed
- Format changed
- Title changed

- Characters mentioned or described
- Setting mentioned or described
- Events or actions described
- Appearance of characters mentioned
- Objects mentioned
- Emotions mentioned
- Dialogue mentioned
- Time mentioned
<table>
<thead>
<tr>
<th>Character size or number changed</th>
<th>Deletion of violence</th>
<th>Big boys come (No description or elaboration) Little boys go home</th>
</tr>
</thead>
<tbody>
<tr>
<td>New title</td>
<td>Format changed</td>
<td>Parents involved Little boys play with goggles Little boys eat</td>
</tr>
<tr>
<td>Dog changed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New or additional conflict</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New characters added</td>
<td>New setting described or added</td>
<td>New characters (other than parents) added</td>
</tr>
<tr>
<td>Cause and effect event added</td>
<td>Humor added</td>
<td>New objects involved New event with cause and effect added</td>
</tr>
<tr>
<td>Invented words added</td>
<td></td>
<td>Humor added Invented words added</td>
</tr>
<tr>
<td>Classification (food, play, boys) mentioned, but not described</td>
<td>Event or action changed or identified, but not described</td>
<td></td>
</tr>
<tr>
<td>Characters mentioned</td>
<td></td>
<td>Classification (food, play, boys) mentioned</td>
</tr>
<tr>
<td>Event or action</td>
<td></td>
<td>Characters mentioned, but not described</td>
</tr>
<tr>
<td>changed or identified, but not described</td>
<td></td>
<td>Event or action added or identified, but not described</td>
</tr>
<tr>
<td>Character descriptions provided</td>
<td>Examples of classification given (food: meat, sandwich)</td>
<td>Character descriptions provided</td>
</tr>
<tr>
<td>Events or actions detailed</td>
<td></td>
<td>Examples of classifications</td>
</tr>
<tr>
<td>Causes of an event or action discussed</td>
<td></td>
<td>Events or actions detailed</td>
</tr>
<tr>
<td>Consequences of event or action discussed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metaphors</td>
<td></td>
<td>Causes of an event or action discussed</td>
</tr>
<tr>
<td>Descriptive words for nouns or verbs</td>
<td></td>
<td>Metaphors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Descriptive words for nouns or verbs</td>
</tr>
<tr>
<td>Fluency: Number of ideas</td>
<td>Points</td>
<td>Criteria: Question 3</td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------</td>
<td>----------------------</td>
</tr>
<tr>
<td>1</td>
<td>One idea</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Two or three ideas</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Four or more ideas</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fluency: Categories of ideas</th>
<th>Points</th>
<th>Criteria: Question 3</th>
<th>Points</th>
<th>Criteria: Question 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Direct retelling of story</td>
<td>One of categories used</td>
<td></td>
<td></td>
<td>Direct retelling of story</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>One of categories used</td>
</tr>
<tr>
<td>2 Two or three categories used</td>
<td></td>
<td></td>
<td></td>
<td>Two of the categories used</td>
</tr>
<tr>
<td>3 Four or more categories used</td>
<td></td>
<td></td>
<td></td>
<td>Each of the categories used</td>
</tr>
</tbody>
</table>

Categories:
- Characters mentioned or described
- Setting mentioned or described
- Events or actions described
- Appearance of characters mentioned
- Objects mentioned
- Emotions mentioned
- Dialogue mentioned and used
- Time mentioned

Categories:
- Statements or greeting
- Questions asked
- Advice given
<table>
<thead>
<tr>
<th>Originality: Uniqueness of ideas</th>
<th>Elaboration: Details of ideas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Little boys hide Little boys play (general)</td>
<td><strong>1</strong> Greeting</td>
</tr>
<tr>
<td>2 Little boys eat Little boys play specific activity Little boys change hideout in one way Big boys come back</td>
<td><strong>2</strong> Ask about other characters Ask about goggles Ask about being in book</td>
</tr>
<tr>
<td>3 Little boys completely change hideout New character(s) included New event (fire, dog discloses hideout) added Cause and effect event added Humor added</td>
<td><strong>3</strong> Ask about doing something together Ask about feelings Give advice</td>
</tr>
</tbody>
</table>

**Classification (food, play, boys) mentioned Characters mentioned, but not described Event or action changed or identified, but not described**

**Character descriptions provided Examples of classification given (food: meat, sandwich) Events or actions detailed**

**Two or more topics (usually of conversation) mentioned (goggles, big boys, being in book), but directly related to ideas in book Dialogue of one person given in two or more sentences**

**Causes of an event or action discussed Consequences of event or action discussed Metaphors used Descriptive words for nouns or verbs used**

**Two or more topics of conversation mentioned, at least one being an idea new and extended beyond the book Dialogue exchange described**
Appendix G

Literature Response Rating Worksheet
<table>
<thead>
<tr>
<th>Category</th>
<th>Question 1</th>
<th>Question 2</th>
<th>Question 3</th>
<th>Question 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluency</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Originality</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elaboration</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensitivity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subject</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Judge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Question 1</th>
<th>Question 2</th>
<th>Question 3</th>
<th>Question 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluency</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Originality</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elaboration</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensitivity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subject</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Judge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix H

Table 8

INTER-JUDGE RELIABILITY FOR LITERATURE RESPONSE INSTRUMENT BY QUESTION

<table>
<thead>
<tr>
<th>Question Number</th>
<th>W</th>
<th>$X^2$</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.9626</td>
<td>210.81</td>
<td>$p \cdot .001$</td>
</tr>
<tr>
<td>2</td>
<td>0.8860</td>
<td>194.03</td>
<td>$p \cdot .001$</td>
</tr>
<tr>
<td>3</td>
<td>0.9350</td>
<td>204.77</td>
<td>$p \cdot .001$</td>
</tr>
<tr>
<td>4</td>
<td>0.9487</td>
<td>207.77</td>
<td>$p \cdot .001$</td>
</tr>
<tr>
<td>Total</td>
<td>0.9403</td>
<td>205.93</td>
<td>$p \cdot .001$</td>
</tr>
</tbody>
</table>

$x^2.001 = 59.7$ Kendall's Coefficient of Concordance

Table 9

INTER-JUDGE RELIABILITY FOR LITERATURE RESPONSE INSTRUMENT BY SCALE

<table>
<thead>
<tr>
<th>Scale</th>
<th>W</th>
<th>$X^2$</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluency</td>
<td>0.8886</td>
<td>194.60</td>
<td>$p \cdot .001$</td>
</tr>
<tr>
<td>Flexibility</td>
<td>0.8208</td>
<td>179.76</td>
<td>$p \cdot .001$</td>
</tr>
<tr>
<td>Originality</td>
<td>0.8825</td>
<td>193.27</td>
<td>$p \cdot .001$</td>
</tr>
<tr>
<td>Elaboration</td>
<td>0.8801</td>
<td>192.74</td>
<td>$p \cdot .001$</td>
</tr>
<tr>
<td>Total</td>
<td>0.9403</td>
<td>205.93</td>
<td>$p \cdot .001$</td>
</tr>
</tbody>
</table>

$x^2.001 = 59.7$ Kendall's Coefficient of Concordance
Appendix I

<table>
<thead>
<tr>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>37</td>
<td>230</td>
<td>52</td>
<td>100</td>
<td>30</td>
<td>71</td>
<td>4</td>
<td>45</td>
</tr>
<tr>
<td>43</td>
<td>230</td>
<td>73</td>
<td>99</td>
<td>51</td>
<td>70</td>
<td>2</td>
<td>44</td>
</tr>
<tr>
<td>19</td>
<td>193</td>
<td>68</td>
<td>98</td>
<td>48</td>
<td>70</td>
<td>66</td>
<td>43</td>
</tr>
<tr>
<td>60</td>
<td>184</td>
<td>41</td>
<td>97</td>
<td>44</td>
<td>69</td>
<td>12</td>
<td>41</td>
</tr>
<tr>
<td>58</td>
<td>181</td>
<td>56</td>
<td>96</td>
<td>1</td>
<td>68</td>
<td>24</td>
<td>39</td>
</tr>
<tr>
<td>23</td>
<td>170</td>
<td>29</td>
<td>95</td>
<td>63</td>
<td>67</td>
<td>67</td>
<td>39</td>
</tr>
<tr>
<td>26</td>
<td>167</td>
<td>62</td>
<td>95</td>
<td>34</td>
<td>66</td>
<td>17</td>
<td>39</td>
</tr>
<tr>
<td>35</td>
<td>151</td>
<td>13</td>
<td>93</td>
<td>3</td>
<td>63</td>
<td>64</td>
<td>38</td>
</tr>
<tr>
<td>49</td>
<td>117</td>
<td>40</td>
<td>89</td>
<td>71</td>
<td>61</td>
<td>20</td>
<td>36</td>
</tr>
<tr>
<td>39</td>
<td>117</td>
<td>31</td>
<td>84</td>
<td>36</td>
<td>60</td>
<td>14</td>
<td>34</td>
</tr>
<tr>
<td>15</td>
<td>113</td>
<td>61</td>
<td>84</td>
<td>25</td>
<td>57</td>
<td>7</td>
<td>34</td>
</tr>
<tr>
<td>72</td>
<td>112</td>
<td>42</td>
<td>84</td>
<td>21</td>
<td>57</td>
<td>55</td>
<td>28</td>
</tr>
<tr>
<td>57</td>
<td>111</td>
<td>11</td>
<td>83</td>
<td>70</td>
<td>57</td>
<td>45</td>
<td>28</td>
</tr>
<tr>
<td>18</td>
<td>109</td>
<td>50</td>
<td>77</td>
<td>5</td>
<td>57</td>
<td>28</td>
<td>27</td>
</tr>
<tr>
<td>16</td>
<td>107</td>
<td>59</td>
<td>77</td>
<td>74</td>
<td>56</td>
<td>69</td>
<td>26</td>
</tr>
<tr>
<td>27</td>
<td>105</td>
<td>22</td>
<td>76</td>
<td>32</td>
<td>54</td>
<td>46</td>
<td>21</td>
</tr>
<tr>
<td>53</td>
<td>104</td>
<td>65</td>
<td>75</td>
<td>33</td>
<td>53</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>38</td>
<td>101</td>
<td>10</td>
<td>74</td>
<td>8</td>
<td>50</td>
<td>47</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
<td>71</td>
<td>54</td>
<td>48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Number</td>
<td>Raw Score</td>
<td>Student Number</td>
<td>Raw Score</td>
<td>Student Number</td>
<td>Raw Score</td>
<td>Student Number</td>
<td>Raw Score</td>
</tr>
<tr>
<td>---------------</td>
<td>----------</td>
<td>---------------</td>
<td>----------</td>
<td>---------------</td>
<td>----------</td>
<td>---------------</td>
<td>----------</td>
</tr>
<tr>
<td>43</td>
<td>126</td>
<td>68</td>
<td>58</td>
<td>65</td>
<td>41</td>
<td>54</td>
<td>26</td>
</tr>
<tr>
<td>19</td>
<td>116</td>
<td>73</td>
<td>57</td>
<td>59</td>
<td>41</td>
<td>8</td>
<td>24</td>
</tr>
<tr>
<td>60</td>
<td>111</td>
<td>38</td>
<td>57</td>
<td>30</td>
<td>40</td>
<td>24</td>
<td>23</td>
</tr>
<tr>
<td>37</td>
<td>107</td>
<td>53</td>
<td>56</td>
<td>71</td>
<td>40</td>
<td>67</td>
<td>22</td>
</tr>
<tr>
<td>23</td>
<td>104</td>
<td>56</td>
<td>56</td>
<td>22</td>
<td>39</td>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td>58</td>
<td>95</td>
<td>72</td>
<td>55</td>
<td>63</td>
<td>38</td>
<td>17</td>
<td>21</td>
</tr>
<tr>
<td>26</td>
<td>89</td>
<td>52</td>
<td>55</td>
<td>21</td>
<td>38</td>
<td>64</td>
<td>20</td>
</tr>
<tr>
<td>57</td>
<td>80</td>
<td>61</td>
<td>54</td>
<td>36</td>
<td>37</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td>39</td>
<td>73</td>
<td>40</td>
<td>53</td>
<td>34</td>
<td>36</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>49</td>
<td>73</td>
<td>11</td>
<td>51</td>
<td>48</td>
<td>35</td>
<td>20</td>
<td>18</td>
</tr>
<tr>
<td>15</td>
<td>71</td>
<td>31</td>
<td>49</td>
<td>25</td>
<td>33</td>
<td>7</td>
<td>18</td>
</tr>
<tr>
<td>13</td>
<td>70</td>
<td>62</td>
<td>49</td>
<td>74</td>
<td>33</td>
<td>55</td>
<td>17</td>
</tr>
<tr>
<td>27</td>
<td>68</td>
<td>50</td>
<td>46</td>
<td>44</td>
<td>30</td>
<td>69</td>
<td>16</td>
</tr>
<tr>
<td>29</td>
<td>67</td>
<td>1</td>
<td>46</td>
<td>5</td>
<td>28</td>
<td>28</td>
<td>15</td>
</tr>
<tr>
<td>41</td>
<td>67</td>
<td>42</td>
<td>45</td>
<td>70</td>
<td>28</td>
<td>45</td>
<td>12</td>
</tr>
<tr>
<td>35</td>
<td>66</td>
<td>3</td>
<td>45</td>
<td>32</td>
<td>28</td>
<td>46</td>
<td>11</td>
</tr>
<tr>
<td>18</td>
<td>65</td>
<td>51</td>
<td>44</td>
<td>66</td>
<td>28</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>16</td>
<td>63</td>
<td>6</td>
<td>43</td>
<td>33</td>
<td>27</td>
<td>47</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>43</td>
<td>4</td>
<td>26</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 12

MINNESOTA TESTS OF CREATIVE THINKING: VERBAL FLEXIBILITY SCORES RANK ORDER

N = 74

<table>
<thead>
<tr>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>35</td>
<td>62</td>
<td>20</td>
<td>32</td>
<td>15</td>
<td>24</td>
<td>12</td>
</tr>
<tr>
<td>37</td>
<td>35</td>
<td>61</td>
<td>19</td>
<td>30</td>
<td>15</td>
<td>66</td>
<td>12</td>
</tr>
<tr>
<td>43</td>
<td>33</td>
<td>50</td>
<td>18</td>
<td>10</td>
<td>15</td>
<td>71</td>
<td>11</td>
</tr>
<tr>
<td>19</td>
<td>33</td>
<td>22</td>
<td>18</td>
<td>41</td>
<td>14</td>
<td>20</td>
<td>11</td>
</tr>
<tr>
<td>58</td>
<td>31</td>
<td>57</td>
<td>18</td>
<td>25</td>
<td>14</td>
<td>64</td>
<td>11</td>
</tr>
<tr>
<td>72</td>
<td>31</td>
<td>39</td>
<td>17</td>
<td>54</td>
<td>14</td>
<td>74</td>
<td>11</td>
</tr>
<tr>
<td>26</td>
<td>29</td>
<td>59</td>
<td>17</td>
<td>33</td>
<td>14</td>
<td>21</td>
<td>10</td>
</tr>
<tr>
<td>23</td>
<td>27</td>
<td>11</td>
<td>17</td>
<td>44</td>
<td>14</td>
<td>45</td>
<td>10</td>
</tr>
<tr>
<td>53</td>
<td>26</td>
<td>18</td>
<td>16</td>
<td>36</td>
<td>14</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>60</td>
<td>24</td>
<td>29</td>
<td>16</td>
<td>4</td>
<td>13</td>
<td>17</td>
<td>8</td>
</tr>
<tr>
<td>38</td>
<td>23</td>
<td>27</td>
<td>16</td>
<td>63</td>
<td>13</td>
<td>28</td>
<td>8</td>
</tr>
<tr>
<td>15</td>
<td>22</td>
<td>31</td>
<td>16</td>
<td>51</td>
<td>13</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td>73</td>
<td>21</td>
<td>40</td>
<td>16</td>
<td>3</td>
<td>13</td>
<td>55</td>
<td>8</td>
</tr>
<tr>
<td>42</td>
<td>21</td>
<td>13</td>
<td>15</td>
<td>5</td>
<td>13</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>52</td>
<td>21</td>
<td>48</td>
<td>16</td>
<td>1</td>
<td>13</td>
<td>46</td>
<td>6</td>
</tr>
<tr>
<td>68</td>
<td>21</td>
<td>65</td>
<td>16</td>
<td>6</td>
<td>12</td>
<td>69</td>
<td>6</td>
</tr>
<tr>
<td>49</td>
<td>21</td>
<td>16</td>
<td>15</td>
<td>70</td>
<td>12</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>56</td>
<td>20</td>
<td>34</td>
<td>15</td>
<td>2</td>
<td>12</td>
<td>47</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>15</td>
<td></td>
<td>67</td>
<td></td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>
Table 13

MINNESOTA TESTS OF CREATIVE THINKING: VERBAL
ORIGINALITY SCORES RANK ORDER

\( N = 74 \)

<table>
<thead>
<tr>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>37</td>
<td>88</td>
<td>27</td>
<td>21</td>
<td>34</td>
<td>15</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>43</td>
<td>71</td>
<td>73</td>
<td>21</td>
<td>11</td>
<td>15</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>58</td>
<td>55</td>
<td>15</td>
<td>20</td>
<td>57</td>
<td>13</td>
<td>54</td>
<td>8</td>
</tr>
<tr>
<td>35</td>
<td>50</td>
<td>56</td>
<td>20</td>
<td>50</td>
<td>13</td>
<td>64</td>
<td>7</td>
</tr>
<tr>
<td>26</td>
<td>49</td>
<td>40</td>
<td>20</td>
<td>25</td>
<td>13</td>
<td>20</td>
<td>7</td>
</tr>
<tr>
<td>60</td>
<td>49</td>
<td>68</td>
<td>19</td>
<td>12</td>
<td>13</td>
<td>45</td>
<td>6</td>
</tr>
<tr>
<td>19</td>
<td>44</td>
<td>22</td>
<td>19</td>
<td>51</td>
<td>13</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>23</td>
<td>39</td>
<td>48</td>
<td>19</td>
<td>74</td>
<td>12</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>16</td>
<td>29</td>
<td>31</td>
<td>19</td>
<td>29</td>
<td>12</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>18</td>
<td>28</td>
<td>59</td>
<td>19</td>
<td>33</td>
<td>12</td>
<td>67</td>
<td>5</td>
</tr>
<tr>
<td>39</td>
<td>27</td>
<td>42</td>
<td>18</td>
<td>61</td>
<td>11</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>62</td>
<td>26</td>
<td>65</td>
<td>18</td>
<td>32</td>
<td>11</td>
<td>28</td>
<td>4</td>
</tr>
<tr>
<td>72</td>
<td>26</td>
<td>70</td>
<td>17</td>
<td>8</td>
<td>11</td>
<td>46</td>
<td>4</td>
</tr>
<tr>
<td>44</td>
<td>25</td>
<td>30</td>
<td>16</td>
<td>17</td>
<td>10</td>
<td>69</td>
<td>4</td>
</tr>
<tr>
<td>52</td>
<td>24</td>
<td>5</td>
<td>16</td>
<td>2</td>
<td>10</td>
<td>66</td>
<td>3</td>
</tr>
<tr>
<td>49</td>
<td>23</td>
<td>6</td>
<td>16</td>
<td>71</td>
<td>10</td>
<td>55</td>
<td>3</td>
</tr>
<tr>
<td>53</td>
<td>22</td>
<td>10</td>
<td>16</td>
<td>36</td>
<td>9</td>
<td>47</td>
<td>1</td>
</tr>
<tr>
<td>38</td>
<td>21</td>
<td>63</td>
<td>16</td>
<td>21</td>
<td>9</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>41</td>
<td>16</td>
<td>7</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 14

MINNESOTA TESTS OF CREATIVE THINKING: NONVERBAL TOTAL SCORES RANK ORDER

N = 74

<table>
<thead>
<tr>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>57</td>
<td>320</td>
<td>50</td>
<td>185</td>
<td>36</td>
<td>144</td>
<td>2</td>
<td>116</td>
</tr>
<tr>
<td>68</td>
<td>265</td>
<td>71</td>
<td>182</td>
<td>10</td>
<td>142</td>
<td>74</td>
<td>115</td>
</tr>
<tr>
<td>13</td>
<td>251</td>
<td>38</td>
<td>178</td>
<td>58</td>
<td>142</td>
<td>55</td>
<td>111</td>
</tr>
<tr>
<td>26</td>
<td>245</td>
<td>21</td>
<td>172</td>
<td>52</td>
<td>142</td>
<td>45</td>
<td>111</td>
</tr>
<tr>
<td>56</td>
<td>231</td>
<td>18</td>
<td>172</td>
<td>1</td>
<td>138</td>
<td>5</td>
<td>110</td>
</tr>
<tr>
<td>40</td>
<td>231</td>
<td>73</td>
<td>171</td>
<td>22</td>
<td>137</td>
<td>62</td>
<td>110</td>
</tr>
<tr>
<td>35</td>
<td>226</td>
<td>61</td>
<td>170</td>
<td>65</td>
<td>135</td>
<td>16</td>
<td>110</td>
</tr>
<tr>
<td>72</td>
<td>219</td>
<td>42</td>
<td>165</td>
<td>28</td>
<td>133</td>
<td>67</td>
<td>105</td>
</tr>
<tr>
<td>70</td>
<td>215</td>
<td>37</td>
<td>164</td>
<td>6</td>
<td>133</td>
<td>44</td>
<td>102</td>
</tr>
<tr>
<td>32</td>
<td>207</td>
<td>30</td>
<td>161</td>
<td>20</td>
<td>130</td>
<td>46</td>
<td>102</td>
</tr>
<tr>
<td>53</td>
<td>204</td>
<td>60</td>
<td>159</td>
<td>47</td>
<td>130</td>
<td>14</td>
<td>93</td>
</tr>
<tr>
<td>27</td>
<td>203</td>
<td>51</td>
<td>157</td>
<td>54</td>
<td>130</td>
<td>48</td>
<td>89</td>
</tr>
<tr>
<td>11</td>
<td>202</td>
<td>34</td>
<td>154</td>
<td>59</td>
<td>128</td>
<td>12</td>
<td>83</td>
</tr>
<tr>
<td>43</td>
<td>201</td>
<td>39</td>
<td>153</td>
<td>25</td>
<td>123</td>
<td>41</td>
<td>81</td>
</tr>
<tr>
<td>31</td>
<td>198</td>
<td>8</td>
<td>152</td>
<td>4</td>
<td>119</td>
<td>69</td>
<td>79</td>
</tr>
<tr>
<td>7</td>
<td>196</td>
<td>15</td>
<td>150</td>
<td>19</td>
<td>119</td>
<td>33</td>
<td>78</td>
</tr>
<tr>
<td>66</td>
<td>194</td>
<td>9</td>
<td>149</td>
<td>29</td>
<td>119</td>
<td>24</td>
<td>61</td>
</tr>
<tr>
<td>49</td>
<td>191</td>
<td>17</td>
<td>148</td>
<td>64</td>
<td>118</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>187</td>
<td>3</td>
<td>145</td>
<td>63</td>
<td>116</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 15

MINNESOTA TESTS OF CREATIVE THINKING: NONVERBAL FLUENCY SCORES RANK ORDER

\[ N = 74 \]

<table>
<thead>
<tr>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>57</td>
<td>43</td>
<td>26</td>
<td>30</td>
<td>42</td>
<td>24</td>
<td>62</td>
<td>19</td>
</tr>
<tr>
<td>43</td>
<td>39</td>
<td>35</td>
<td>29</td>
<td>4</td>
<td>24</td>
<td>27</td>
<td>19</td>
</tr>
<tr>
<td>40</td>
<td>38</td>
<td>50</td>
<td>29</td>
<td>12</td>
<td>24</td>
<td>34</td>
<td>19</td>
</tr>
<tr>
<td>7</td>
<td>38</td>
<td>11</td>
<td>29</td>
<td>3</td>
<td>24</td>
<td>64</td>
<td>19</td>
</tr>
<tr>
<td>60</td>
<td>37</td>
<td>13</td>
<td>26</td>
<td>10</td>
<td>24</td>
<td>45</td>
<td>19</td>
</tr>
<tr>
<td>70</td>
<td>36</td>
<td>32</td>
<td>28</td>
<td>47</td>
<td>24</td>
<td>1</td>
<td>19</td>
</tr>
<tr>
<td>68</td>
<td>36</td>
<td>52</td>
<td>28</td>
<td>37</td>
<td>23</td>
<td>28</td>
<td>19</td>
</tr>
<tr>
<td>15</td>
<td>35</td>
<td>61</td>
<td>27</td>
<td>63</td>
<td>23</td>
<td>54</td>
<td>19</td>
</tr>
<tr>
<td>73</td>
<td>34</td>
<td>58</td>
<td>27</td>
<td>46</td>
<td>23</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>66</td>
<td>34</td>
<td>65</td>
<td>27</td>
<td>25</td>
<td>23</td>
<td>44</td>
<td>18</td>
</tr>
<tr>
<td>56</td>
<td>34</td>
<td>31</td>
<td>26</td>
<td>6</td>
<td>22</td>
<td>14</td>
<td>18</td>
</tr>
<tr>
<td>30</td>
<td>33</td>
<td>9</td>
<td>26</td>
<td>74</td>
<td>22</td>
<td>38</td>
<td>17</td>
</tr>
<tr>
<td>18</td>
<td>33</td>
<td>71</td>
<td>26</td>
<td>36</td>
<td>22</td>
<td>48</td>
<td>16</td>
</tr>
<tr>
<td>49</td>
<td>32</td>
<td>8</td>
<td>26</td>
<td>5</td>
<td>21</td>
<td>55</td>
<td>16</td>
</tr>
<tr>
<td>15</td>
<td>31</td>
<td>22</td>
<td>26</td>
<td>41</td>
<td>21</td>
<td>59</td>
<td>15</td>
</tr>
<tr>
<td>51</td>
<td>31</td>
<td>20</td>
<td>25</td>
<td>72</td>
<td>20</td>
<td>33</td>
<td>15</td>
</tr>
<tr>
<td>29</td>
<td>30</td>
<td>69</td>
<td>24</td>
<td>16</td>
<td>20</td>
<td>67</td>
<td>14</td>
</tr>
<tr>
<td>53</td>
<td>30</td>
<td>17</td>
<td>24</td>
<td>39</td>
<td>20</td>
<td>24</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>24</td>
<td>23</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 16

MINNESOTA TESTS OF CREATIVE THINKING: NONVERBAL FLEXIBILITY SCORES RANK ORDER

N = 74

<table>
<thead>
<tr>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>31</td>
<td>17</td>
<td>21</td>
<td>71</td>
<td>18</td>
<td>41</td>
<td>14</td>
</tr>
<tr>
<td>43</td>
<td>28</td>
<td>10</td>
<td>21</td>
<td>31</td>
<td>18</td>
<td>21</td>
<td>14</td>
</tr>
<tr>
<td>70</td>
<td>27</td>
<td>22</td>
<td>21</td>
<td>66</td>
<td>18</td>
<td>45</td>
<td>14</td>
</tr>
<tr>
<td>73</td>
<td>26</td>
<td>23</td>
<td>20</td>
<td>18</td>
<td>18</td>
<td>58</td>
<td>14</td>
</tr>
<tr>
<td>7</td>
<td>25</td>
<td>36</td>
<td>20</td>
<td>37</td>
<td>17</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>30</td>
<td>25</td>
<td>15</td>
<td>20</td>
<td>4</td>
<td>17</td>
<td>59</td>
<td>13</td>
</tr>
<tr>
<td>8</td>
<td>24</td>
<td>69</td>
<td>20</td>
<td>46</td>
<td>16</td>
<td>55</td>
<td>13</td>
</tr>
<tr>
<td>61</td>
<td>24</td>
<td>49</td>
<td>20</td>
<td>1</td>
<td>16</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>13</td>
<td>24</td>
<td>6</td>
<td>19</td>
<td>72</td>
<td>16</td>
<td>74</td>
<td>13</td>
</tr>
<tr>
<td>50</td>
<td>24</td>
<td>63</td>
<td>19</td>
<td>38</td>
<td>16</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>51</td>
<td>24</td>
<td>42</td>
<td>19</td>
<td>19</td>
<td>16</td>
<td>64</td>
<td>12</td>
</tr>
<tr>
<td>57</td>
<td>24</td>
<td>32</td>
<td>19</td>
<td>44</td>
<td>15</td>
<td>39</td>
<td>12</td>
</tr>
<tr>
<td>65</td>
<td>23</td>
<td>29</td>
<td>19</td>
<td>28</td>
<td>15</td>
<td>14</td>
<td>11</td>
</tr>
<tr>
<td>26</td>
<td>23</td>
<td>56</td>
<td>19</td>
<td>62</td>
<td>15</td>
<td>48</td>
<td>10</td>
</tr>
<tr>
<td>60</td>
<td>23</td>
<td>34</td>
<td>18</td>
<td>47</td>
<td>15</td>
<td>67</td>
<td>9</td>
</tr>
<tr>
<td>52</td>
<td>22</td>
<td>27</td>
<td>18</td>
<td>3</td>
<td>15</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>53</td>
<td>22</td>
<td>16</td>
<td>18</td>
<td>35</td>
<td>15</td>
<td>25</td>
<td>7</td>
</tr>
<tr>
<td>68</td>
<td>22</td>
<td>25</td>
<td>18</td>
<td>54</td>
<td>14</td>
<td>34</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>18</td>
<td>5</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 17

MINNESOTA TESTS OF CREATIVE THINKING: NONVERBAL ORIGINALITY SCORES RANK ORDER

<table>
<thead>
<tr>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>65</td>
<td>17</td>
<td>37</td>
<td>20</td>
<td>28</td>
<td>31</td>
<td>22</td>
</tr>
<tr>
<td>57</td>
<td>58</td>
<td>65</td>
<td>37</td>
<td>46</td>
<td>27</td>
<td>63</td>
<td>22</td>
</tr>
<tr>
<td>43</td>
<td>57</td>
<td>32</td>
<td>36</td>
<td>5</td>
<td>27</td>
<td>36</td>
<td>22</td>
</tr>
<tr>
<td>40</td>
<td>55</td>
<td>29</td>
<td>35</td>
<td>42</td>
<td>27</td>
<td>38</td>
<td>21</td>
</tr>
<tr>
<td>30</td>
<td>52</td>
<td>10</td>
<td>35</td>
<td>16</td>
<td>26</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>70</td>
<td>50</td>
<td>45</td>
<td>34</td>
<td>34</td>
<td>26</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>56</td>
<td>47</td>
<td>71</td>
<td>34</td>
<td>44</td>
<td>26</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td>26</td>
<td>47</td>
<td>8</td>
<td>34</td>
<td>14</td>
<td>26</td>
<td>62</td>
<td>19</td>
</tr>
<tr>
<td>50</td>
<td>45</td>
<td>64</td>
<td>33</td>
<td>6</td>
<td>26</td>
<td>67</td>
<td>19</td>
</tr>
<tr>
<td>73</td>
<td>44</td>
<td>9</td>
<td>30</td>
<td>39</td>
<td>25</td>
<td>49</td>
<td>19</td>
</tr>
<tr>
<td>51</td>
<td>44</td>
<td>4</td>
<td>30</td>
<td>19</td>
<td>25</td>
<td>59</td>
<td>18</td>
</tr>
<tr>
<td>22</td>
<td>43</td>
<td>37</td>
<td>30</td>
<td>47</td>
<td>24</td>
<td>54</td>
<td>18</td>
</tr>
<tr>
<td>53</td>
<td>42</td>
<td>15</td>
<td>30</td>
<td>23</td>
<td>24</td>
<td>48</td>
<td>16</td>
</tr>
<tr>
<td>61</td>
<td>42</td>
<td>52</td>
<td>29</td>
<td>27</td>
<td>23</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>60</td>
<td>40</td>
<td>72</td>
<td>29</td>
<td>74</td>
<td>23</td>
<td>41</td>
<td>14</td>
</tr>
<tr>
<td>13</td>
<td>40</td>
<td>28</td>
<td>29</td>
<td>55</td>
<td>23</td>
<td>33</td>
<td>13</td>
</tr>
<tr>
<td>68</td>
<td>39</td>
<td>58</td>
<td>29</td>
<td>21</td>
<td>23</td>
<td>24</td>
<td>12</td>
</tr>
<tr>
<td>35</td>
<td>38</td>
<td>18</td>
<td>28</td>
<td>69</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>66</td>
<td>38</td>
<td>25</td>
<td>28</td>
<td>11</td>
<td>22</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Table 18

MINNESOTA TESTS OF CREATIVE THINKING: NONVERBAL ELABORATION SCORES RANK ORDER

\( N = 74 \)

<table>
<thead>
<tr>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>57</td>
<td>195</td>
<td>66</td>
<td>104</td>
<td>15</td>
<td>69</td>
<td>30</td>
<td>51</td>
</tr>
<tr>
<td>68</td>
<td>168</td>
<td>70</td>
<td>102</td>
<td>8</td>
<td>68</td>
<td>4</td>
<td>48</td>
</tr>
<tr>
<td>13</td>
<td>159</td>
<td>39</td>
<td>96</td>
<td>7</td>
<td>68</td>
<td>65</td>
<td>48</td>
</tr>
<tr>
<td>72</td>
<td>153</td>
<td>42</td>
<td>95</td>
<td>47</td>
<td>67</td>
<td>6</td>
<td>48</td>
</tr>
<tr>
<td>26</td>
<td>145</td>
<td>37</td>
<td>94</td>
<td>73</td>
<td>67</td>
<td>48</td>
<td>47</td>
</tr>
<tr>
<td>35</td>
<td>144</td>
<td>18</td>
<td>93</td>
<td>6</td>
<td>66</td>
<td>22</td>
<td>47</td>
</tr>
<tr>
<td>27</td>
<td>142</td>
<td>34</td>
<td>91</td>
<td>7</td>
<td>66</td>
<td>16</td>
<td>45</td>
</tr>
<tr>
<td>11</td>
<td>138</td>
<td>50</td>
<td>87</td>
<td>67</td>
<td>63</td>
<td>33</td>
<td>44</td>
</tr>
<tr>
<td>31</td>
<td>132</td>
<td>3</td>
<td>86</td>
<td>62</td>
<td>63</td>
<td>45</td>
<td>44</td>
</tr>
<tr>
<td>56</td>
<td>131</td>
<td>1</td>
<td>83</td>
<td>10</td>
<td>62</td>
<td>19</td>
<td>43</td>
</tr>
<tr>
<td>38</td>
<td>124</td>
<td>59</td>
<td>82</td>
<td>55</td>
<td>59</td>
<td>44</td>
<td>43</td>
</tr>
<tr>
<td>32</td>
<td>124</td>
<td>36</td>
<td>80</td>
<td>20</td>
<td>59</td>
<td>14</td>
<td>38</td>
</tr>
<tr>
<td>23</td>
<td>123</td>
<td>8</td>
<td>80</td>
<td>60</td>
<td>59</td>
<td>46</td>
<td>36</td>
</tr>
<tr>
<td>49</td>
<td>120</td>
<td>54</td>
<td>79</td>
<td>51</td>
<td>58</td>
<td>29</td>
<td>35</td>
</tr>
<tr>
<td>21</td>
<td>111</td>
<td>43</td>
<td>77</td>
<td>74</td>
<td>57</td>
<td>24</td>
<td>34</td>
</tr>
<tr>
<td>53</td>
<td>110</td>
<td>58</td>
<td>73</td>
<td>62</td>
<td>56</td>
<td>41</td>
<td>32</td>
</tr>
<tr>
<td>40</td>
<td>107</td>
<td>61</td>
<td>72</td>
<td>25</td>
<td>54</td>
<td>12</td>
<td>30</td>
</tr>
<tr>
<td>71</td>
<td>104</td>
<td>2</td>
<td>71</td>
<td>64</td>
<td>54</td>
<td>69</td>
<td>12</td>
</tr>
<tr>
<td>28</td>
<td>70</td>
<td>63</td>
<td>52</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Number</td>
<td>Raw Score</td>
<td>Student Number</td>
<td>Raw Score</td>
<td>Student Number</td>
<td>Raw Score</td>
<td>Student Number</td>
<td>Raw Score</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------</td>
<td>----------------</td>
<td>-----------</td>
<td>----------------</td>
<td>-----------</td>
<td>----------------</td>
<td>-----------</td>
</tr>
<tr>
<td>43</td>
<td>50.0</td>
<td>18</td>
<td>39.0</td>
<td>12</td>
<td>35.3</td>
<td>49</td>
<td>30.7</td>
</tr>
<tr>
<td>69</td>
<td>45.7</td>
<td>28</td>
<td>38.7</td>
<td>2</td>
<td>35.3</td>
<td>34</td>
<td>30.3</td>
</tr>
<tr>
<td>17</td>
<td>45.0</td>
<td>1</td>
<td>38.3</td>
<td>6</td>
<td>35.0</td>
<td>22</td>
<td>29.7</td>
</tr>
<tr>
<td>61</td>
<td>44.3</td>
<td>74</td>
<td>38.0</td>
<td>51</td>
<td>34.7</td>
<td>73</td>
<td>29.3</td>
</tr>
<tr>
<td>56</td>
<td>44.0</td>
<td>72</td>
<td>38.0</td>
<td>41</td>
<td>34.3</td>
<td>50</td>
<td>29.3</td>
</tr>
<tr>
<td>27</td>
<td>43.0</td>
<td>71</td>
<td>38.0</td>
<td>30</td>
<td>34.3</td>
<td>58</td>
<td>29.0</td>
</tr>
<tr>
<td>29</td>
<td>42.3</td>
<td>68</td>
<td>38.0</td>
<td>40</td>
<td>34.0</td>
<td>48</td>
<td>29.0</td>
</tr>
<tr>
<td>16</td>
<td>42.3</td>
<td>37</td>
<td>38.0</td>
<td>32</td>
<td>34.0</td>
<td>19</td>
<td>28.7</td>
</tr>
<tr>
<td>4</td>
<td>41.3</td>
<td>55</td>
<td>37.3</td>
<td>14</td>
<td>34.0</td>
<td>19</td>
<td>28.7</td>
</tr>
<tr>
<td>47</td>
<td>41.0</td>
<td>31</td>
<td>37.3</td>
<td>13</td>
<td>34.0</td>
<td>10</td>
<td>28.7</td>
</tr>
<tr>
<td>52</td>
<td>40.7</td>
<td>23</td>
<td>37.3</td>
<td>9</td>
<td>34.0</td>
<td>57</td>
<td>27.0</td>
</tr>
<tr>
<td>36</td>
<td>40.3</td>
<td>62</td>
<td>36.3</td>
<td>7</td>
<td>34.0</td>
<td>42</td>
<td>27.0</td>
</tr>
<tr>
<td>35</td>
<td>40.3</td>
<td>11</td>
<td>36.3</td>
<td>21</td>
<td>33.0</td>
<td>64</td>
<td>26.7</td>
</tr>
<tr>
<td>70</td>
<td>40.0</td>
<td>3</td>
<td>36.3</td>
<td>65</td>
<td>32.7</td>
<td>24</td>
<td>24.3</td>
</tr>
<tr>
<td>63</td>
<td>40.0</td>
<td>67</td>
<td>36.0</td>
<td>5</td>
<td>32.7</td>
<td>25</td>
<td>23.3</td>
</tr>
<tr>
<td>45</td>
<td>40.0</td>
<td>20</td>
<td>36.0</td>
<td>60</td>
<td>32.3</td>
<td>44</td>
<td>21.7</td>
</tr>
<tr>
<td>38</td>
<td>39.3</td>
<td>59</td>
<td>35.3</td>
<td>33</td>
<td>32.0</td>
<td>66</td>
<td>20.7</td>
</tr>
<tr>
<td>15</td>
<td>39.3</td>
<td>54</td>
<td>35.3</td>
<td>39</td>
<td>31.7</td>
<td>46</td>
<td>20.0</td>
</tr>
<tr>
<td>26</td>
<td>35.3</td>
<td>53</td>
<td>31.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 20
LITERATURE RESPONSE INSTRUMENT
FLUENCY SCORES RANK ORDER
N = 74

<table>
<thead>
<tr>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>57</td>
<td>11.7</td>
<td>36</td>
<td>9.7</td>
<td>6</td>
<td>8.7</td>
<td>58</td>
<td>7.7</td>
</tr>
<tr>
<td>53</td>
<td>11.0</td>
<td>30</td>
<td>9.7</td>
<td>5</td>
<td>8.7</td>
<td>24</td>
<td>7.7</td>
</tr>
<tr>
<td>45</td>
<td>11.0</td>
<td>28</td>
<td>9.7</td>
<td>2</td>
<td>8.7</td>
<td>7</td>
<td>7.7</td>
</tr>
<tr>
<td>29</td>
<td>11.0</td>
<td>73</td>
<td>9.3</td>
<td>42</td>
<td>8.3</td>
<td>23</td>
<td>7.3</td>
</tr>
<tr>
<td>27</td>
<td>11.0</td>
<td>61</td>
<td>9.3</td>
<td>35</td>
<td>8.3</td>
<td>20</td>
<td>7.3</td>
</tr>
<tr>
<td>17</td>
<td>11.0</td>
<td>52</td>
<td>9.3</td>
<td>31</td>
<td>8.3</td>
<td>74</td>
<td>7.0</td>
</tr>
<tr>
<td>70</td>
<td>10.7</td>
<td>51</td>
<td>9.3</td>
<td>19</td>
<td>8.3</td>
<td>59</td>
<td>7.0</td>
</tr>
<tr>
<td>43</td>
<td>10.7</td>
<td>3</td>
<td>9.3</td>
<td>14</td>
<td>8.3</td>
<td>41</td>
<td>7.0</td>
</tr>
<tr>
<td>18</td>
<td>10.7</td>
<td>1</td>
<td>9.3</td>
<td>13</td>
<td>8.3</td>
<td>33</td>
<td>7.0</td>
</tr>
<tr>
<td>4</td>
<td>10.7</td>
<td>71</td>
<td>9.0</td>
<td>12</td>
<td>8.3</td>
<td>8</td>
<td>7.0</td>
</tr>
<tr>
<td>69</td>
<td>10.3</td>
<td>64</td>
<td>9.0</td>
<td>72</td>
<td>8.0</td>
<td>65</td>
<td>6.7</td>
</tr>
<tr>
<td>66</td>
<td>10.3</td>
<td>55</td>
<td>9.0</td>
<td>68</td>
<td>8.0</td>
<td>49</td>
<td>6.7</td>
</tr>
<tr>
<td>62</td>
<td>10.3</td>
<td>50</td>
<td>9.0</td>
<td>54</td>
<td>8.0</td>
<td>44</td>
<td>6.7</td>
</tr>
<tr>
<td>56</td>
<td>10.3</td>
<td>40</td>
<td>9.0</td>
<td>48</td>
<td>8.0</td>
<td>34</td>
<td>6.7</td>
</tr>
<tr>
<td>47</td>
<td>10.3</td>
<td>38</td>
<td>9.0</td>
<td>39</td>
<td>8.0</td>
<td>10</td>
<td>6.7</td>
</tr>
<tr>
<td>63</td>
<td>10.0</td>
<td>32</td>
<td>9.0</td>
<td>22</td>
<td>8.0</td>
<td>46</td>
<td>5.0</td>
</tr>
<tr>
<td>60</td>
<td>9.7</td>
<td>26</td>
<td>9.0</td>
<td>15</td>
<td>8.0</td>
<td>25</td>
<td>5.0</td>
</tr>
<tr>
<td>37</td>
<td>9.7</td>
<td>16</td>
<td>9.0</td>
<td>11</td>
<td>8.0</td>
<td>67</td>
<td>4.7</td>
</tr>
<tr>
<td>21</td>
<td>8.7</td>
<td>9</td>
<td></td>
<td></td>
<td>8.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Number</td>
<td>Raw Score</td>
<td>Student Number</td>
<td>Raw Score</td>
<td>Student Number</td>
<td>Raw Score</td>
<td>Student Number</td>
<td>Raw Score</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------</td>
<td>----------------</td>
<td>-----------</td>
<td>----------------</td>
<td>-----------</td>
<td>----------------</td>
<td>-----------</td>
</tr>
<tr>
<td>43</td>
<td>11.7</td>
<td>28</td>
<td>8.3</td>
<td>51</td>
<td>7.7</td>
<td>42</td>
<td>6.7</td>
</tr>
<tr>
<td>69</td>
<td>10.0</td>
<td>26</td>
<td>8.3</td>
<td>37</td>
<td>7.7</td>
<td>40</td>
<td>6.7</td>
</tr>
<tr>
<td>17</td>
<td>10.0</td>
<td>23</td>
<td>8.3</td>
<td>33</td>
<td>7.7</td>
<td>10</td>
<td>6.7</td>
</tr>
<tr>
<td>45</td>
<td>9.3</td>
<td>18</td>
<td>8.3</td>
<td>13</td>
<td>7.7</td>
<td>60</td>
<td>6.3</td>
</tr>
<tr>
<td>74</td>
<td>9.0</td>
<td>3</td>
<td>8.3</td>
<td>7</td>
<td>7.7</td>
<td>58</td>
<td>6.3</td>
</tr>
<tr>
<td>70</td>
<td>9.0</td>
<td>1</td>
<td>8.3</td>
<td>57</td>
<td>7.3</td>
<td>36</td>
<td>6.3</td>
</tr>
<tr>
<td>47</td>
<td>9.0</td>
<td>68</td>
<td>8.0</td>
<td>41</td>
<td>7.3</td>
<td>34</td>
<td>6.3</td>
</tr>
<tr>
<td>29</td>
<td>9.0</td>
<td>67</td>
<td>8.0</td>
<td>32</td>
<td>7.3</td>
<td>25</td>
<td>6.3</td>
</tr>
<tr>
<td>71</td>
<td>8.7</td>
<td>63</td>
<td>8.0</td>
<td>14</td>
<td>7.3</td>
<td>19</td>
<td>6.3</td>
</tr>
<tr>
<td>65</td>
<td>8.7</td>
<td>59</td>
<td>8.0</td>
<td>8</td>
<td>7.3</td>
<td>5</td>
<td>6.3</td>
</tr>
<tr>
<td>56</td>
<td>8.7</td>
<td>54</td>
<td>8.0</td>
<td>6</td>
<td>7.3</td>
<td>24</td>
<td>6.0</td>
</tr>
<tr>
<td>52</td>
<td>8.7</td>
<td>39</td>
<td>8.0</td>
<td>4</td>
<td>7.3</td>
<td>22</td>
<td>6.0</td>
</tr>
<tr>
<td>38</td>
<td>8.7</td>
<td>27</td>
<td>8.0</td>
<td>73</td>
<td>7.0</td>
<td>55</td>
<td>5.3</td>
</tr>
<tr>
<td>16</td>
<td>8.7</td>
<td>20</td>
<td>8.0</td>
<td>62</td>
<td>7.0</td>
<td>48</td>
<td>5.0</td>
</tr>
<tr>
<td>15</td>
<td>8.7</td>
<td>12</td>
<td>8.0</td>
<td>53</td>
<td>7.0</td>
<td>46</td>
<td>5.0</td>
</tr>
<tr>
<td>61</td>
<td>8.3</td>
<td>11</td>
<td>8.0</td>
<td>50</td>
<td>7.0</td>
<td>44</td>
<td>5.0</td>
</tr>
<tr>
<td>31</td>
<td>8.3</td>
<td>9</td>
<td>8.0</td>
<td>49</td>
<td>7.0</td>
<td>66</td>
<td>4.7</td>
</tr>
<tr>
<td>30</td>
<td>8.3</td>
<td>2</td>
<td>8.0</td>
<td>35</td>
<td>7.0</td>
<td>64</td>
<td>4.7</td>
</tr>
<tr>
<td>72</td>
<td>7.7</td>
<td>21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 21
LITERATURE RESPONSE INSTRUMENT
FLEXIBILITY SCORES RANK ORDER
N = 74
### Table 22
LITERATURE RESPONSE INSTRUMENT
ORIGINALITY SCORES RANK ORDER

N = 74

<table>
<thead>
<tr>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>12.0</td>
<td>47</td>
<td>9.7</td>
<td>39</td>
<td>8.7</td>
<td>60</td>
<td>7.7</td>
</tr>
<tr>
<td>61</td>
<td>11.7</td>
<td>38</td>
<td>9.7</td>
<td>30</td>
<td>8.7</td>
<td>53</td>
<td>7.7</td>
</tr>
<tr>
<td>56</td>
<td>11.3</td>
<td>31</td>
<td>9.7</td>
<td>11</td>
<td>8.7</td>
<td>49</td>
<td>7.7</td>
</tr>
<tr>
<td>43</td>
<td>11.3</td>
<td>16</td>
<td>9.7</td>
<td>6</td>
<td>8.7</td>
<td>34</td>
<td>7.7</td>
</tr>
<tr>
<td>69</td>
<td>11.0</td>
<td>1</td>
<td>9.7</td>
<td>2</td>
<td>8.7</td>
<td>3</td>
<td>7.7</td>
</tr>
<tr>
<td>18</td>
<td>10.7</td>
<td>45</td>
<td>9.3</td>
<td>64</td>
<td>8.3</td>
<td>41</td>
<td>7.3</td>
</tr>
<tr>
<td>70</td>
<td>10.3</td>
<td>74</td>
<td>9.0</td>
<td>54</td>
<td>8.3</td>
<td>32</td>
<td>7.0</td>
</tr>
<tr>
<td>63</td>
<td>10.3</td>
<td>72</td>
<td>9.0</td>
<td>33</td>
<td>8.3</td>
<td>24</td>
<td>7.0</td>
</tr>
<tr>
<td>59</td>
<td>10.0</td>
<td>71</td>
<td>9.0</td>
<td>22</td>
<td>8.3</td>
<td>10</td>
<td>7.0</td>
</tr>
<tr>
<td>55</td>
<td>10.0</td>
<td>68</td>
<td>9.0</td>
<td>20</td>
<td>8.3</td>
<td>8</td>
<td>7.0</td>
</tr>
<tr>
<td>67</td>
<td>10.0</td>
<td>62</td>
<td>9.0</td>
<td>14</td>
<td>8.3</td>
<td>73</td>
<td>6.7</td>
</tr>
<tr>
<td>52</td>
<td>10.0</td>
<td>40</td>
<td>9.0</td>
<td>7</td>
<td>8.3</td>
<td>57</td>
<td>6.7</td>
</tr>
<tr>
<td>36</td>
<td>10.0</td>
<td>37</td>
<td>9.0</td>
<td>48</td>
<td>8.0</td>
<td>42</td>
<td>6.7</td>
</tr>
<tr>
<td>35</td>
<td>10.0</td>
<td>28</td>
<td>9.0</td>
<td>26</td>
<td>8.0</td>
<td>50</td>
<td>6.0</td>
</tr>
<tr>
<td>29</td>
<td>10.0</td>
<td>23</td>
<td>9.0</td>
<td>21</td>
<td>8.0</td>
<td>19</td>
<td>5.7</td>
</tr>
<tr>
<td>27</td>
<td>10.0</td>
<td>12</td>
<td>9.0</td>
<td>13</td>
<td>8.0</td>
<td>66</td>
<td>5.3</td>
</tr>
<tr>
<td>15</td>
<td>10.0</td>
<td>65</td>
<td>8.7</td>
<td>9</td>
<td>8.0</td>
<td>46</td>
<td>5.0</td>
</tr>
<tr>
<td>51</td>
<td>9.7</td>
<td>58</td>
<td>8.7</td>
<td>5</td>
<td>8.0</td>
<td>25</td>
<td>4.7</td>
</tr>
<tr>
<td>44</td>
<td>8.7</td>
<td>4</td>
<td></td>
<td>8.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 23

LITERATURE RESPONSE INSTRUMENT
ELABORATION SCORES RANK ORDER

N = 74

<table>
<thead>
<tr>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>43</td>
<td>12.0</td>
<td>11</td>
<td>9.3</td>
<td>23</td>
<td>8.3</td>
<td>60</td>
<td>7.0</td>
</tr>
<tr>
<td>69</td>
<td>11.0</td>
<td>74</td>
<td>9.0</td>
<td>14</td>
<td>8.3</td>
<td>53</td>
<td>7.0</td>
</tr>
<tr>
<td>63</td>
<td>11.0</td>
<td>56</td>
<td>9.0</td>
<td>12</td>
<td>8.3</td>
<td>33</td>
<td>7.0</td>
</tr>
<tr>
<td>27</td>
<td>11.0</td>
<td>52</td>
<td>9.0</td>
<td>6</td>
<td>8.3</td>
<td>22</td>
<td>7.0</td>
</tr>
<tr>
<td>16</td>
<td>11.0</td>
<td>37</td>
<td>9.0</td>
<td>68</td>
<td>8.0</td>
<td>73</td>
<td>6.7</td>
</tr>
<tr>
<td>4</td>
<td>10.7</td>
<td>36</td>
<td>9.0</td>
<td>67</td>
<td>8.0</td>
<td>57</td>
<td>6.7</td>
</tr>
<tr>
<td>29</td>
<td>10.3</td>
<td>20</td>
<td>9.0</td>
<td>61</td>
<td>8.0</td>
<td>42</td>
<td>6.7</td>
</tr>
<tr>
<td>35</td>
<td>10.0</td>
<td>1</td>
<td>9.0</td>
<td>54</td>
<td>8.0</td>
<td>50</td>
<td>6.3</td>
</tr>
<tr>
<td>17</td>
<td>10.0</td>
<td>59</td>
<td>8.7</td>
<td>21</td>
<td>8.0</td>
<td>10</td>
<td>6.3</td>
</tr>
<tr>
<td>70</td>
<td>9.7</td>
<td>26</td>
<td>8.7</td>
<td>13</td>
<td>8.0</td>
<td>8</td>
<td>6.3</td>
</tr>
<tr>
<td>47</td>
<td>9.7</td>
<td>5</td>
<td>8.7</td>
<td>9</td>
<td>8.0</td>
<td>58</td>
<td>6.0</td>
</tr>
<tr>
<td>28</td>
<td>9.7</td>
<td>72</td>
<td>8.3</td>
<td>7</td>
<td>8.0</td>
<td>48</td>
<td>6.0</td>
</tr>
<tr>
<td>18</td>
<td>9.7</td>
<td>71</td>
<td>8.3</td>
<td>3</td>
<td>8.0</td>
<td>24</td>
<td>6.0</td>
</tr>
<tr>
<td>15</td>
<td>9.7</td>
<td>65</td>
<td>8.3</td>
<td>2</td>
<td>8.0</td>
<td>25</td>
<td>5.7</td>
</tr>
<tr>
<td>55</td>
<td>9.3</td>
<td>62</td>
<td>8.3</td>
<td>41</td>
<td>7.7</td>
<td>44</td>
<td>5.0</td>
</tr>
<tr>
<td>45</td>
<td>9.3</td>
<td>51</td>
<td>8.3</td>
<td>34</td>
<td>7.7</td>
<td>66</td>
<td>4.7</td>
</tr>
<tr>
<td>38</td>
<td>9.3</td>
<td>39</td>
<td>8.3</td>
<td>49</td>
<td>7.3</td>
<td>64</td>
<td>4.7</td>
</tr>
<tr>
<td>31</td>
<td>9.3</td>
<td>32</td>
<td>8.3</td>
<td>40</td>
<td>7.3</td>
<td>46</td>
<td>4.0</td>
</tr>
<tr>
<td>30</td>
<td>8.3</td>
<td>19</td>
<td>7.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 24

GATES-MACGINITIE READING COMPREHENSION SURVEY-D SCORES RANK ORDER

N = 74

<table>
<thead>
<tr>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
<th>Student Number</th>
<th>Raw Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>45</td>
<td>18</td>
<td>22</td>
<td>49</td>
<td>17</td>
<td>59</td>
<td>10</td>
</tr>
<tr>
<td>7</td>
<td>37</td>
<td>72</td>
<td>22</td>
<td>10</td>
<td>16</td>
<td>61</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>37</td>
<td>50</td>
<td>21</td>
<td>65</td>
<td>16</td>
<td>69</td>
<td>10</td>
</tr>
<tr>
<td>43</td>
<td>37</td>
<td>40</td>
<td>21</td>
<td>31</td>
<td>16</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>23</td>
<td>33</td>
<td>52</td>
<td>21</td>
<td>33</td>
<td>16</td>
<td>22</td>
<td>10</td>
</tr>
<tr>
<td>58</td>
<td>32</td>
<td>38</td>
<td>21</td>
<td>48</td>
<td>16</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>62</td>
<td>31</td>
<td>16</td>
<td>20</td>
<td>44</td>
<td>16</td>
<td>20</td>
<td>8</td>
</tr>
<tr>
<td>6</td>
<td>27</td>
<td>26</td>
<td>20</td>
<td>17</td>
<td>15</td>
<td>42</td>
<td>8</td>
</tr>
<tr>
<td>19</td>
<td>27</td>
<td>74</td>
<td>20</td>
<td>2</td>
<td>15</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>32</td>
<td>26</td>
<td>37</td>
<td>19</td>
<td>14</td>
<td>14</td>
<td>67</td>
<td>8</td>
</tr>
<tr>
<td>41</td>
<td>25</td>
<td>73</td>
<td>19</td>
<td>28</td>
<td>14</td>
<td>46</td>
<td>7</td>
</tr>
<tr>
<td>39</td>
<td>24</td>
<td>36</td>
<td>19</td>
<td>57</td>
<td>13</td>
<td>64</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>24</td>
<td>71</td>
<td>18</td>
<td>29</td>
<td>13</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>53</td>
<td>24</td>
<td>66</td>
<td>18</td>
<td>3</td>
<td>13</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>24</td>
<td>70</td>
<td>18</td>
<td>13</td>
<td>12</td>
<td>55</td>
<td>4</td>
</tr>
<tr>
<td>56</td>
<td>23</td>
<td>51</td>
<td>17</td>
<td>63</td>
<td>12</td>
<td>45</td>
<td>4</td>
</tr>
<tr>
<td>21</td>
<td>23</td>
<td>30</td>
<td>17</td>
<td>66</td>
<td>11</td>
<td>47</td>
<td>3</td>
</tr>
<tr>
<td>34</td>
<td>22</td>
<td>4</td>
<td>17</td>
<td>54</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>22</td>
<td>60</td>
<td>17</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix J

Interscale Correlation Coefficients

Minnesota Tests of Creative Thinking and

Literature Response Instrument
### Table 25

**MINNESOTA TESTS OF CREATIVE THINKING: NONVERBAL INTERSCALE CORRELATION COEFFICIENTS**

<table>
<thead>
<tr>
<th></th>
<th>Flexibility</th>
<th>Fluency</th>
<th>Originality</th>
<th>Elaboration</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexibility</td>
<td></td>
<td>.7632**</td>
<td>.7922**</td>
<td>.2678*</td>
<td>.5984**</td>
</tr>
<tr>
<td>Fluency</td>
<td>.7632**</td>
<td></td>
<td>.7821**</td>
<td>.3652*</td>
<td>.6777**</td>
</tr>
<tr>
<td>Originality</td>
<td>.7922**</td>
<td>.7821**</td>
<td></td>
<td>.2926*</td>
<td>.6467**</td>
</tr>
<tr>
<td>Elaboration</td>
<td>.2678*</td>
<td>.3652*</td>
<td>.2926*</td>
<td></td>
<td>.9092**</td>
</tr>
<tr>
<td>Total</td>
<td>.5984**</td>
<td>.6777**</td>
<td>.6467**</td>
<td>.9092**</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05

**p < .01

Pearson r

### Table 26

**MINNESOTA TESTS OF CREATIVE THINKING: VERBAL INTERSCALE CORRELATION COEFFICIENTS**

<table>
<thead>
<tr>
<th></th>
<th>Flexibility</th>
<th>Fluency</th>
<th>Originality</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexibility</td>
<td></td>
<td>.8427**</td>
<td>.8534**</td>
<td>.9140**</td>
</tr>
<tr>
<td>Fluency</td>
<td>.8427**</td>
<td></td>
<td>.8268**</td>
<td>.9711**</td>
</tr>
<tr>
<td>Originality</td>
<td>.8534**</td>
<td>.8268**</td>
<td></td>
<td>.9312**</td>
</tr>
<tr>
<td>Total</td>
<td>.9140**</td>
<td>.9711**</td>
<td>.9312**</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05

**p < .01

Pearson r
Table 27
MINNESOTA TESTS OF CREATIVE THINKING: VERBAL AND NONVERBAL INTERSCALE CORRELATION COEFFICIENTS

<table>
<thead>
<tr>
<th>Nonverbal</th>
<th>Fluency</th>
<th>Flexibility</th>
<th>Originality</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluency</td>
<td>0.4314**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexibility</td>
<td></td>
<td>0.2392*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Originality</td>
<td></td>
<td></td>
<td>0.1920</td>
<td></td>
</tr>
<tr>
<td>Total Verbal</td>
<td></td>
<td></td>
<td></td>
<td>0.3923**</td>
</tr>
</tbody>
</table>

*p < .05  
**p < .01

Table 28
LITERATURE RESPONSE INSTRUMENT INTERSCALE CORRELATION COEFFICIENTS

<table>
<thead>
<tr>
<th>Nonverbal</th>
<th>Fluency</th>
<th>Flexibility</th>
<th>Originality</th>
<th>Elaboration</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluency</td>
<td></td>
<td>0.6097**</td>
<td>0.6241**</td>
<td>0.7653**</td>
<td>0.8042**</td>
</tr>
<tr>
<td>Flexibility</td>
<td>0.6097**</td>
<td></td>
<td>0.7118**</td>
<td>0.7333**</td>
<td>0.8019**</td>
</tr>
<tr>
<td>Originality</td>
<td>0.6241**</td>
<td>0.7118**</td>
<td></td>
<td>0.7337**</td>
<td>0.8444**</td>
</tr>
<tr>
<td>Elaboration</td>
<td>0.7653**</td>
<td>0.7333**</td>
<td>0.7337**</td>
<td></td>
<td>0.9178**</td>
</tr>
<tr>
<td>Total</td>
<td>0.8042**</td>
<td>0.8019**</td>
<td>0.8444**</td>
<td>0.9178**</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05  
**p < .01
Appendix K

Summary Statistics
### Table 29
**LITERATURE RESPONSE INSTRUMENT**
**SUMMARY STATISTICS**

*N = 74*

<table>
<thead>
<tr>
<th>Scale</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluency</td>
<td>8.67</td>
<td>1.50</td>
<td>8.73</td>
</tr>
<tr>
<td>Flexibility</td>
<td>7.58</td>
<td>1.28</td>
<td>7.75</td>
</tr>
<tr>
<td>Originality</td>
<td>8.66</td>
<td>1.50</td>
<td>8.69</td>
</tr>
<tr>
<td>Elaboration</td>
<td>8.20</td>
<td>1.59</td>
<td>8.25</td>
</tr>
<tr>
<td>Total</td>
<td>34.95</td>
<td>5.97</td>
<td>35.27</td>
</tr>
</tbody>
</table>

### Table 30
**MINNESOTA TESTS OF CREATIVE THINKING:**
**VERBAL SUMMARY STATISTICS**

*N = 74*

<table>
<thead>
<tr>
<th>Scale</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluency</td>
<td>46.36</td>
<td>26.87</td>
<td>41.50</td>
</tr>
<tr>
<td>Flexibility</td>
<td>16.23</td>
<td>7.13</td>
<td>14.93</td>
</tr>
<tr>
<td>Originality</td>
<td>18.30</td>
<td>15.57</td>
<td>15.50</td>
</tr>
<tr>
<td>Total</td>
<td>80.89</td>
<td>47.11</td>
<td>71.00</td>
</tr>
</tbody>
</table>
Table 31

MINNESOTA TESTS OF CREATIVE THINKING: 
NONVERBAL SUMMARY STATISTICS

\( N = 74 \)

<table>
<thead>
<tr>
<th>Scale</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluency</td>
<td>25.24</td>
<td>6.84</td>
<td>24.17</td>
</tr>
<tr>
<td>Flexibility</td>
<td>17.85</td>
<td>5.04</td>
<td>17.94</td>
</tr>
<tr>
<td>Originality</td>
<td>30.77</td>
<td>11.45</td>
<td>28.17</td>
</tr>
<tr>
<td>Elaboration</td>
<td>80.23</td>
<td>37.62</td>
<td>69.00</td>
</tr>
<tr>
<td>Total</td>
<td>154.16</td>
<td>49.27</td>
<td>145.00</td>
</tr>
</tbody>
</table>

Table 32

READING COMPREHENSION AND INTELLIGENCE 
SUMMARY STATISTICS

\( N = 74 \)

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gates-MacGinitie Reading Compre-</td>
<td>17.61 raw</td>
<td>8.56</td>
<td>16.90</td>
</tr>
<tr>
<td>hension Test</td>
<td>score</td>
<td></td>
<td></td>
</tr>
<tr>
<td>California Short-Form Test of</td>
<td>96.96 I.Q.</td>
<td>11.40</td>
<td>98.00</td>
</tr>
<tr>
<td>Mental Maturity</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
BIBLIOGRAPHY

Books


**Articles**


Ward, W. C. "Rate and Uniqueness in Children's Creative Responding." *Child Development*, XL (Summer 1969), 869-78.


**Unpublished Materials**


Karsten, Mary O. "The Relationship of Tested Creative Abilities and Selected Factors of Academic Achievement, Intelligence, Sex, Socioeconomic Status and Pupil Attitudes." Unpublished Ph.D. dissertation, University of Southern California, 1967.


