

EFFECTS OF INDUCED SCHEMATA UPON
INTERMEDIATE AND ADVANCED HIGH SCHOOL
ESOL STUDENTS' READING COMPREHENSION
OF SELECTED EXPOSITORY PASSAGES

by

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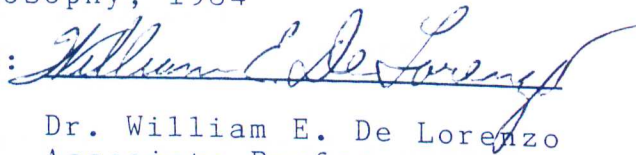
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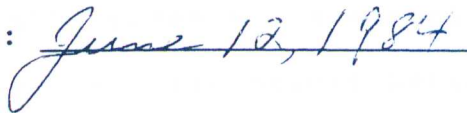
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ABSTRACT

Title of Dissertation: Effects of Induced Schemata Upon
Intermediate and Advanced High School
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of Selected Expository Passages

Alba Cappuccia Ben-Barka, Doctor of Philosophy, 1984

Dissertation directed by: William E. De Lorenzo, Ph.D.
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Instruction

This study investigated the effects of induced schemata upon the reading comprehension of intermediate or advanced high school ESOL students. A secondary purpose of this study was to examine the relationship between subjects' reading comprehension and: (1) the quality of their domain-specific prior knowledge; and (2) their metacognitive knowledge.

The sample was comprised of 152 intermediate and advanced ESOL students from two high schools in a suburban Maryland school district. Subjects were randomly assigned to the training or control condition. Training was administered over five consecutive days. The investigator and an ESOL teacher alternated instruction to the control and experimental groups in order to balance instructor effects. Time and materials were the same and scripts were developed for both groups to ensure uniformity of instruction.

Following training, subjects were tested using a 10-question multiple-choice test and a 34-item maze performance measure, both developed for and validated in the study. Additionally, subjects completed: (1) prediction and

confidence ratings to assess their metacognitive knowledge; and (2) a free association task, following Langer's (1980) assessment/instructional prior knowledge paradigm. In reading expository text, subjects in the training group utilized a webbing technique whereas control group students used the SQ3R, a study skills method. In the second school, subjects (N=79) were also interviewed to further understand students' educational experiences.

Data were analyzed using multivariate tests of covariance (MANCOVA). Results indicated no significant effects for inducement of schemata upon comprehension on both dependent measures and across levels of English language proficiency. Pearson Product Moment Correlation coefficients indicated a positive and significant relationship between subjects' reading comprehension performance scores and: (1) the quality of their domain-specific prior knowledge; and (2) metacognitive assessment of both quality and quantity of reading comprehension. No significant relationship was found between subjects' metacognitive assessment of their level of interest and their reading comprehension scores.

The multiplicity of factors influencing subjects' performance suggested by the interviews calls for a cautious interpretation of the findings. Both limitations of the study and its implications for theory, research, and practice were provided.

DEDICATION

To my loved ones, alive and deceased, who have contributed--each in his/her special way--to my "being." To all of those who made the difference, I am deeply grateful.

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A specific reader and a specific text
at a specific time and place:
change any of these,
and there occurs
a different circuit,
a different event
--a different poem.

L.M. Rosenblatt
(1978, p.14)

CHAPTER I

INTRODUCTION

Since the 1940's, three conceptual models have provided the framework for teaching reading in the United States: a bottom-up, a top-down, and an interactive view of reading. The most recent, the interactive approach, is grounded in schema theories which represent at once the conciliation between the other two paradigms and the interaction between reader and text (Spiro, 1980; Anderson, 1977).

This study drew predominantly upon a schema-theoretical framework. However, the other two models are presented in order to foster a deeper understanding of schema theories. The first, a descriptive paradigm, was essentially an exemplar of bottom-up processing based on behavioristic theory to reading. It essentially viewed reading as a step by step development of skills. The reader presumably progressed from decoding, in a letter-by-letter or word-by-word fashion, to larger portions of print, to speech and subsequently, to aural comprehension (Clarke & Silberstein, 1979). Researchers assumed they knew what reading was but questioned the best way to acquire it and make methodological decisions. Suggestions for first language (L1) and second language (L2) practice included the following: 1) strict adherence to the text; 2) progression of reading skills directly related to language skills

development, and 3) teacher-centered classrooms where instruction was carefully preorganized along an orderly, sequential plan of reading skills needed from basic through independent reading (Thonis, 1970).

Fulfilling primarily an explanatory role, the second, a top-down processing model based on psycholinguistic theory, has provided the foundation for much of the current perspective on reading in the United States. Researchers no longer debate pragmatics for their primary concern is with theory, that is, what the reading process is about. The psycholinguistic approach hinges on the reader's world knowledge, conceptual development, and process strategies (Coady, 1979) rather than techniques (Smith, 1973). The central objective of this paradigm is to understand the reader's comprehension process by gaining insights into his/her cognitive processes. In his discussion of the pedagogical implications of this model of reading, Coady (1979) recommended:

1. Teaching comprehension strategies to avoid loss of meaning through code-emphasis.
2. Capitalizing on the reader's strengths. That is, greater background knowledge of a topic could compensate somewhat for a lack of syntactic control over the language.
3. Adapting an eclectic approach with different types of materials to meet the range of needs of ESOL

students in heterogeneous, multi-level classrooms.

4. Using high-interest reading materials which relate well to the background of the reader, "since strong semantic input can help compensate when syntactic control is weak" (p.12).
5. Directing the student and providing timely and appropriate feedback as the primary functions of the teacher.

Of central importance to building a theory and conducting research in L2 reading is the role of the reader's background in psycholinguistic theory; that is, the notion that readers will apply meaning to the text regardless of the degree they are able to utilize graphophonemic, syntactic, or semantic information.

Although schema-based paradigms are compatible with psycholinguistic postulates in their explanatory functions and meaning orientation (Goodman, 1979a), they present a more interactive view of reading: top-down and bottom-up processing are employed simultaneously or independently of one another as required by the cognitive demands of the given reading task (Spiro, 1980). Specifically, schema-based theorists attempt to understand how cognitive structures (schemata) direct the processes by which new information is comprehended, acquired, stored, and used (Anderson, 1977a). This same objective provides the basis for the general rationale underlying this study.

Two inferences which this researcher drew from the reviewed literature also served to guide this study; they are:

1. In consideration of the interactive complexities of language development and cognitive functioning, instructional planning, and evaluation and selection of materials should be based primarily upon the reader's organized prior knowledge (schemata) rather than solely on second language competence.
2. If the most important single factor influencing learning is what the reader already knows (Ausubel, 1968: Preface) and the learner is the best judge of his/her internal states (Harris, 1968: emic approach), then a useful way to ascertain the reader's prior knowledge about a topic might be through his/her awareness of the process strategies and schemata required in reading tasks.

Rationale

Of all the learning processes, reading is a crucial one for ESOL students to acquire, especially since they must often rely exclusively upon reading to acquire information. However, reading research and instruction have been largely neglected, according to Saville-Troike (1979). Many second language students "cannot read quickly or accurately enough" to be able to read independently after two years of language study (Cates & Swaffar, 1979, p.1). Research is needed to

investigate the causes of comprehension problems experienced by ESOL students (Hudson, 1982).

Some data-based research indicates that low second language proficiency can hamper the acquisition or transfer of skills in L2 reading (Clarke, 1979; Cziko, 1978), but other factors which affect reading at least in L1, have been suggested in recent years. According to schema theorists, the principal determinant of the knowledge which individuals can acquire from reading, at least in a first language, is their organized prior knowledge. Comprehension problems predicted within this theoretical framework are all related to a reader's prior knowledge or cognitive structures: schema availability, selection, maintenance, and overreliance (Pearson & Spiro, 1980).

While the need to understand cognitive functioning is not recent (Thorndike, 1917; Bartlett, 1932), the means of gaining insights about cognitive processes and schemata remain largely speculative. If each person within each culture has his/her prior knowledge organized into schemata, and if variability in nature, structure, and function of each schema affects that individual's discourse production and comprehension, then an important educational challenge consists in helping ESOL students construct a framework for understanding connected discourse or, in Ausubel's (1968) terms, aid the students' "ideational scaffolding" (p.144) by assisting them in relating new information to knowledge

already familiar to them. Additionally, to enhance students' reading comprehension teachers must:

Not only...help students to search for experiences and concepts similar to those which occur in the texts they are to read, but (the teachers) must help them become more aware of their personal attitudes and beliefs which can shape their interpretation of a text giving meaning unlike that which the author intended.

(Sheridan, 1978, p.12)

A Fall 1983 computerized search of ERIC and Dissertation Abstracts revealed the paucity of schema-based research that dealt specifically with educational settings and was generalizable to a wider population. For example, schema studies have not examined adolescents. For the most part, they have been limited to adults; only some have dealt with children, and almost none have controlled for reading ability (Lipson, 1983). Other questions, also, remain about the integration of new knowledge with prior familiar knowledge and the generalizability to instructional material of findings resulting from the use of ambiguous passages in experiments that have been conducted thus far.

Nonetheless, the preliminary evidence is encouraging. Positive effects of prior knowledge on monolinguals' comprehension, recall of information, and learning have been reported (Marr & Gormley, 1982; Anderson, Spiro, & Anderson, 1978; Anderson, Reynolds, Schallert, & Goetz, 1977). The

impact of prior knowledge about social and cultural relationships among bicultural readers has also been investigated (Steffensen & Colker, 1982; Steffensen, Joag-Dev, & Anderson, 1979).

Recently, in a study based upon schema principles, Johnson (1981) investigated the effects of the complexity of the English language and the cultural origin of prose upon the comprehension of 46 intermediate and advanced university students. This research indicated that the cultural schemata of the story had greater effect than the level of syntactic and semantic complexity of the text. Schema theories seem to provide another potential explanation for L2 reading instruction: problems might be related to the reader's schemata in conjunction with his/her low English proficiency, not merely caused by his/her language competence (Hudson, 1982).

The rationale for this study rested upon the pedagogical implications of schema theories, particularly on the notion that the ESOL teacher can facilitate comprehension by assisting students in activating existing schemata to infer meaning, or building new schemata when they are inappropriate for text processing. Teacher observations led this investigator to hypothesize that although ESOL teachers usually tend to use the students' prior knowledge, they do not necessarily give students explicit instruction in organizing and extending cognitive

and affective structures for comprehending a text.

Therefore, in devising this study, the investigator sought to find evidence for what appeared to be a pedagogically sound theory in addition to developing and examining a training paradigm which had not been explored with ESOL students of varying levels of English proficiency. The aim of this proposed instructional module (Pre Reading Plan and webbing exercises) was to provide training that might enable ESOL students to develop schemata which could be used as the basis for inferring meaning and "uncertainty reducing" (Smith, 1973, p.59) when faced with similar information in another context. The study was designed to be undertaken in a realistic ESOL classroom environment which, in Baumann's (1982) terms, might be considered an "ecologically valid" (p.173) setting. The experimental materials were supportive of the Maryland Functional Reading Test (Gaining of Information Section) as well as recommended in the recently developed ESOL Civics curriculum guide presently used in the county where this investigation was conducted.

Statement of the Purpose

This study sought to investigate the effects of domain-specific prior knowledge training, induced schemata, upon the reading comprehension of 152 intermediate or advanced high school ESOL students. A secondary purpose of this study was to examine the relationship between: (1)

ESOL students' reading comprehension and the quality of their domain-specific prior knowledge, and (2) ESOL students' reading comprehension and their metacognitive knowledge.

Statement of the Problem

A review of the literature indicated that no experimental research has ever been designed to study the effects of prior knowledge training upon intermediate and advanced high school ESOL students' reading comprehension. Support has also not been advanced for the potential of these students to share their insights about their cognitive experiences during reading.

While researchers have indicated that reading ability is related to second language competence (Clarke, 1979; Cziko, 1978), they have not excluded other possible causes (schema-related sources) of comprehension difficulties. Reading problems have often been attributed to failure of language skills, but there is a need to consider other possible causes across levels of language proficiency (Hudson, 1982). Lack of understanding of these relationships may lead to serious consequences as far as learning new information in a second language is concerned.

Intuitive appeal and assumptions deduced from theoretical principles of reading in a first language seem to guide L2 research which is available at this time (Joag-Dev & Steffensen, 1980). Many questions must yet be

raised. For example, to what extent is ESOL readers' comprehension contingent on their English competence, or English language proficiency? Does ESOL readers' schema of the printed message affect their perception of words and letters? Are ESOL readers' reading problems dependent on their knowledge structures (schemata)? If so, to what extent are they attributable to these schemata? Confirmation of schema theories may be recognized if the data culled from this study indicates that subjects utilize the induced abstract structures (schemata) in comprehending passages.

It was this investigator's belief that research on ESOL readers' organized prior knowledge would lead to a deeper understanding of their cognitive processes.

Significance of the Study

The value of this study lies in its potential for augmenting the understanding of high school ESOL students' cognitive functioning required in the process of reading comprehension. This investigation offers insights pertinent to theory, research, and practice.

Theory

Schema-based research has been criticized for its circular nature, lack of rigid controls, and use of contrived materials (Tuinman, 1980; Thornkyke & Yekovich, 1980; Lipson, 1983). In this study, these issues were addressed to enable further clarification of the theory

related to the effects of induced, organized prior knowledge on L2 students' processing of information in expository text. In this way, this research endeavor has the potential to afford insights into learning processes or the possible expansion of knowledge by integrating new information presented in text with the ESOL reader's existing knowledge.

Research

The objectives of the training methodology aspect of this project addressed the comprehension process rather than the product. The training module, the experimental procedures and materials, and testing measures were designed to probe the subjects' knowledge before and after reading. It was anticipated that this study should aid in refining the means by which subjects' information about a topic could be measured and examined.

Practice

Since most school-based learning occurs through reading, and expository texts are used as a primary means for instruction in most school settings, the cognitive process undergone by the ESOL student when reading expository material should be examined carefully. Not all factors that influence learning from texts have been identified. There may be other variables besides English proficiency which could be influential in the ESOL students' comprehension. It seems logical that if a teacher provides a means of identifying, activating, and structuring high

school ESOL students' background knowledge, inducing organized prior knowledge through training, he/she might facilitate their comprehension. Since the application of the paradigm used in this study hinged on a view of the second language reader (ESOL student) as dependent only partly upon his/her language specific knowledge, it seemed possible that this research would indicate that comprehension problems were attributable to schema-related difficulties as well as to the lower level of English proficiency.

The pedagogical implications for L2 reading which this researcher is predicting as an outcome of this study, were the following: (1) a closer scrutiny of the organized prior knowledge (schemata) necessary for comprehension; (2) de-emphasis on higher levels of language proficiency as prerequisites to reading, and (3) more focus on meaning oriented activities and strategic behavior prior to and during reading (organizing prior knowledge, predicting task demands, awareness of one's success in reading).

Research Questions and Hypotheses

Main Question

What are the primary effects of induced schemata (organized prior knowledge) upon intermediate and advanced high school ESOL students' reading comprehension?

Hypothesis 1: There will be differences between the

training and control groups favoring the training group among intermediate high school ESOL students' reading comprehension on a 10-question multiple-choice (MCCQ) performance measure.

Hypothesis 2: There will be differences between the training and control groups favoring the training group among intermediate high school ESOL students' reading comprehension on a 34-item maze performance measure.

Hypothesis 3: There will be differences between the training and control groups favoring the training group among advanced high school ESOL students' reading comprehension on a 10-question multiple-choice (MCCQ) performance measure.

Hypothesis 4: There will be differences between the training and control groups favoring the training group among advanced high school ESOL students' reading comprehension on a 34-item maze performance measure.

Related Questions

The general objective of this investigation was to gain insights into the reading comprehension process of intermediate and advanced high school ESOL students by inducing schemata through training. In addition to the main question, the investigator posed two related questions which, although broad areas in themselves, would support the

main question by providing additional data based on subjects' self-assessment or subjective data generated by the subjects. The sub-questions and related hypotheses are the following:

1. What is the relationship between ESOL students' reading comprehension and the quality of their domain-specific prior knowledge?
2. What is the relationship between ESOL students' metacognitive knowledge and their reading comprehension?

Variables

The main question included an independent variable (the schemata or organized prior knowledge induced through training) and a blocking variable (the level of English proficiency). The dependent variables were the two measures of comprehension; that is, the percentage of correct responses on a 10-question multiple-choice performance measure and on a 34-item maze exercise (modified cloze procedure).

The variables in the first related question were: (1) the responses to the PReP procedure as a qualitative measure of the subjects' domain-specific prior knowledge, and (2) the two measures of comprehension (percentage of correct multiple choice and maze responses). In the second related question, the variables included the difference between the measures of metacognitive knowledge and the comprehension

(modified cloze procedure).

The variables in the first related question were: (1) the responses to the PReP procedure as a qualitative measure of the subjects' domain-specific prior knowledge, and (2) the two measures of comprehension (percentage of correct multiple choice and maze responses). In the second related question, the variables included the difference between the measures of metacognitive knowledge and the comprehension measures.

Definitions of Terms

For the purpose of clarification, the following terms have been defined operationally for this investigation.

1. Bottom-up processing: data-driven or text-based mode in which the reader "assumes a passive, receptive role, waiting for data to clearly suggest the selection of a schema" (Pearson & Spiro, 1980, p.77). For example, phonic and word attack skills.
2. Decoding: converting a language code into a meaningful message.
3. ESOL students: non-native English speakers who are readers of English as a second language. In this study, the term refers to members of a micro-culture or ethnic group living in the United States (the macro-culture).
4. Holistic: referring to the following tenets of

Gestalt Psychology: (a) The whole is more than the sum of its parts; (b) The whole determines the nature of its parts; (c) The parts cannot be understood if considered in isolation from the whole, and (d) The parts are dynamically interrelated or independent (Phillips, 1976, p.6).

5. Induced schemata: prior knowledge which has been activated and organized during a specific training procedure.
6. Language: a functional, communicative code that represents the learned behavior of a social community (Stauffer, 1970, p.4). Examples of language components are: L1 (native language); L2 (second language).
7. Language proficiency: general level of English language skills as estimated by the participating county's ESOL office. The testing instruments used by the county include the STEL (Structure Test-English Language), the Revised Thumbnail (grammar completion items), and the Dade County Test (speaking and listening test). Two levels were considered in this study: intermediate and advanced transitional English.
8. Metacognition: "One's knowledge concerning one's own cognitive processes and products or anything

related to them" (Flavell, 1976, p.232). In this study, the term refers to subjects' knowledge of some reading task demands, prediction of general success prior to reading and confidence about one's understanding of a passage after reading (see Appendix G).

9. Oral language proficiency: gross, global measure of one's oral and listening comprehension as defined according to the ACTFL/ETS scale (see Appendix C).
10. Prediction: the well-informed elimination of unlikely alternatives (Smith, 1973, p.29).
11. Prior knowledge (background knowledge): naturally occurring knowledge of language, cognitive functioning, social interactions and cultural norms, and reading requirements gained through life experiences.
12. Prior knowledge training: a paradigm involving the use of the Pre Reading Plan (Langer, 1981) and webbing. It is based on the assumption that effective use of prior knowledge will be made to the extent that the reader's background can be identified, activated, and organized.
13. Reading comprehension: a holistic process of using the cues provided by the author and one's prior

knowledge to infer the author's intended meaning (Johnston, 1983, p.9); operationally defined for this study as the percentage of correct responses on ten multiple choice questions and the percentage correct on 34 maze questions (see Appendix G).

14. Schema theories: theoretical framework suggesting that what a person already knows directs and organizes the processes by which new information is acquired and used.
15. Sociopsycholinguistic process: the cognitive and sociolinguistic interaction between author and reader whereby the reader is actively involved in constructing meaning from text.
16. Strategy: a general pattern developed by the reader to make use of the various cues available in reading print (Goodman, 1973, p.300).
17. Top-down processing: also referred to as inside-out (Smith, 1975) or conceptually-driven, schema-driven, or reader-based processing. Assuming an active role, readers generate hypotheses about the nature of the text based upon their existing schemata which will serve to guide, facilitate, or hamper their comprehension (Pearson & Spiro, 1980).
18. Webbing: a technique for organizing and

integrating information through the construction of visual displays of conceptual structures (schemata) and their relationships (Freedman & Reynolds, 1980).

Basic Assumptions

For purposes of this study, it was assumed that:

1. Research and theories in first language reading (psycholinguistic approach, schema theories) are pertinent to second language reading as well. However, because of other variables, they might not be totally applicable to non-native English readers.
2. Reading is a sociopsycholinguistic process.
3. Prior knowledge and schemata may be assessed and activated.
4. ESOL adolescents living in the United States often have an implicit understanding of their intellectual needs, perhaps better than that presumed by some native English-speaking educators.

Delimitations of the Study

The following limitations delineate the parameters of this study:

1. Sample composition and placement instrumentation for different levels of language proficiency may not be the same in all ESOL instructional settings.

2. Since the reading process cannot be observed directly, assessment of comprehension could only be inferred by readers' performance on particular tasks, that is, the multiple choice and maze questions.
3. The inability to predict and filter out the many variables influencing the ESOL reader may present further constraints on the obtained comprehension measures.
4. Fallability of testing instruments is not under the investigator's control. For example, the number of items is restricted by the length of the passage used for testing.
5. Due to the domain-specific nature of prior knowledge, results of this study are not generalizable to all domains.
6. Findings are limited to expository texts.
7. Experimenter's cueing may influence students' behavior.

Theoretical Bases

Schema theories and a psycholinguistic perspective on reading provided the major underpinnings of this study. Other influential theoretical aspects are related to metacognition, Gestalt psychology, the Sapir-Whorf Hypothesis, and the sociology of language.

This study was based on the view: that language and thought are interrelated; that the societal context is a powerful determiner of individuals' schemata and their comprehension (exposure to dominant culture; living in a bilingual/bicultural environment; pressure of L1 maintenance versus L1 rejection; socio-economic constraints in minority settings); that reading is an interactive, constructive, hypothesis-forming process; that the whole is greater than the sum of its parts; that the parts are interrelated and interdependent; that print awareness, native language and other known languages, and the functional uses of language are aspects of the total background drawn upon by each reader during each reading event. Each of these aspects is treated in more detail in Chapter II, the review of related literature.

Chapter Summary

Chapter I has presented an introduction to this investigation. The significance of the study was addressed. The characteristics of the proposed study, including the problem, assumptions, delimitations, and definitions of terms as used in the study were provided. The research questions, reflecting the particular concerns of the investigator, were also presented.

Organization of the Dissertation

The dissertation consists of five chapters. Chapter I

has provided an introduction to the study. Chapter II reviews selected literature related to the theoretical and methodological framework of this study. Chapter III presents a detailed description of the methodology and procedures. Chapter IV contains the results of the investigation and the statistical analysis used in testing the research hypotheses. Chapter V presents a summary of the study with conclusions and implications.

CHAPTER II

REVIEW OF RELATED LITERATURE

This chapter covers a general review of the theory and research considered central to the investigation. In addition to an overview of reading instruction, the four areas included in the review are: (1) schema theories; (2) cultural schemata: L2 reading; (3) selected metacognitive inquiries, and (4) methodological considerations and research.

Overview of Reading Instruction

From the early 1940's to the mid-1950's, the descriptive and structural theoretical models prevailed across psychology, anthropology, linguistics, language arts, and foreign languages. Since the objective of reading instruction in L1 and L2 was skills development, reading comprehension was viewed as the result of a logical and sequential order of discretely isolated skills. Reading assessment was considered merely as a hierarchy or taxonomy of skills, usually based upon factual or literal comprehension questions. The teaching of reading in a second language tended to be neglected; reading comprehension was not taught explicitly (Cates & Swaffar, 1979).

Beginning from the late 1950's to the present, a change of orientation from product to process has occurred in

psychology (cognitivism), anthropology (cognitivism; ethnography of communication), and linguistics (transformational-generative grammar; generative semantics; socio- and psycho-linguistics; sociology of language; ethnography of speaking; a communicative approach to language, and the notional-functional syllabus). Specifically, with Chomsky (1957) came an awareness of deep structure and syntactic rules governing language patterns. Fillmore (1968) and other case grammarians showed a concern for meaning at the sentence level.

In the 1970's an emphasis on discourse analysis appeared at the propositional and rhetorical levels (Frederiksen, 1975; Halliday & Hasan, 1976; Kintsch, 1972; Meyer, 1977; van Dijk, 1977). Attention was directed primarily at the text and the cohesion within the printed message. Recognition was given to: the role of individual differences in language learning and language behavior (Fillmore, Kempler & Wang, 1979); the importance of the social context (Labov, 1972; Fishman, 1971; Shuy, 1969; Gumperz & Hymes, 1964), the role of the reader's background knowledge (Smith, 1973) and its effects on the comprehension and recall of connected discourse (Anderson, 1977; Bransford, 1979).

To reiterate, the skills-building model guided reading instruction in L1 and L2 until the 1970's when the effects of the social context and the reader's background knowledge

were incorporated into a psycholinguistic model of reading, which was supported by contemporary linguistics and cognitive psychology. According to Smith (1973), this perspective presumes the following:

1. Only a minimum of the information necessary for reading comprehension comes from the printed page.
2. There is a severe limit to the amount of information that can be processed by the visual system at any one time.
3. Comprehension precedes the identification of individual words.
4. Reading is not decoding to oral language.
5. The meaning of an utterance is not an accumulation of the meaning of the words that comprise it. Using Gestalt terminology, the whole is greater than the sum of the parts (Miller in Smith, 1973).

An underlying theme of this paradigm is represented by Smith (1973) and Goodman's (1973) notion of reading as (a) information processing, and (b) total psycholinguistic process. Goodman provided a useful description of this process. In seeking to reconstruct the writer's encoded message, the reader: (1) interacts with the graphic symbols; (2) concentrates his/her total prior experience, and (3) draws on his/her experience, concepts, and language competence. The integration of all the parts, the cognitive, emotive, linguistic, experiential, and conceptual

framework of the reader, is necessary in reading.

Since reading is a total process, it should not be "...fractioned into constituent bits or skills." Breaking it up into subskills would "qualitatively change not only the process, which through its interrelationships is much more than the sum of its parts, but also change the nature of the parts since they normally function as a part of a complex process" (p.163). By implication, instruction and assessment include not only literal, but also inferential comprehension; not so much skills but rather, strategies. Additionally, questioning is more global, involving factual and inferential information and applications from and to the reader's personal experience.

An insight gleaned from a psycholinguistic view, reveals the importance of "the trade-off between visual and non-visual information" (p.7) for reading in a second language. According to Smith (1973), the more information stored in the brain, the less visual information is required to identify a letter, a word, or a meaning for the text. Conversely, the less non-visual information is available, because the text deals with unfamiliar information or because it is written in a language that is not easy to comprehend, the slower reading tends to be and the more visual information is needed. The conclusion sometimes drawn is that language competence places a ceiling on L2 reading ability (Clarke, 1979; Cziko, 1978). Consequently,

reading comprehension instruction is often deferred as a result of limited language proficiency. Language skills are taught under the guise of reading lessons.

Although the emphasis in theory has shifted from reading skills (product) to comprehension and strategies (process), in practice L2 reading instruction has focused on skills. In foreign language courses, the ability to read is assumed to develop more or less automatically as a by-product of vocabulary and structural drills. At the same time, however, language teachers know that with the exception of a few students, this assumption is not confirmed in practice. "Even after two years of language study, most students cannot read quickly or accurately enough to make independent use of their reading skill" (Cates & Swaffar, 1979, p.1).

It would seem from psycholinguistic principles that strategic behavior like predicting, using prior knowledge, and inferencing must be developed in reading. Presumably, second language students should be encouraged to rely on their world knowledge to make predictions and inferences to compensate and augment their limited knowledge of the language. However, since the use of strategies increases the probability of errors, ESOL teachers who wish to encourage strategic behavior must have more tolerance for errors. That is, errors provide evidence of the reader's hypothesis testing efforts (Burke & Goodman, 1973). This

concept might prove difficult to implement in ESOL classrooms because many ESOL students, who come from cultures which discourage risk-taking to prevent losing face (Hancock, De Lorenzo & Ben-Barka, 1982), aspire to obtain language accuracy at the expense of communication and, in turn comprehension.

These concerns are beyond the realm of psycholinguistic theories, as Smith and Goodman warned practitioners. In their denial of the existence of a psycholinguistic method, they asserted that "the value of psycholinguistics lies in the insights it can provide into the reading process and the process of learning to read" (Smith, 1973, p.178). The real contribution made by psycholinguists is an understanding of the reader and of the social context. Accordingly, reader characteristics effecting comprehension include the reader's: language(s); concept development; general knowledge; experiential background; interest; motivation; purpose for reading; personal attitudes and beliefs; reading ability and automaticity; and linguistic knowledge and flexibility (Sheridan, 1978). Research has also shown that characteristics of the reading and school environment and societal attitudes toward reading (Pearson & Johnson, 1978) as well as print variables--e.g., directionality, format, size, organization--also affect comprehension (Goodman, 1979a).

Summary

The evolution from skills development to meaning-getting and information processing occurred in a gradual forty year span. In the late 1970's a schema-theoretical framework, compatible with the psycholinguistic view (Goodman, 1979a,b), became popular. Since that time, the pendulum has moved from bottom-up (skills-building) to top-down (psycholinguistic) to interactive processing (schema theories). Gradually, researchers have become aware of the influence of culture on the educational experiences of minority children (Gumperz & Cook-Gumperz, 1980; Hu-Pei Au & Mason, 1981). In particular schema-based paradigms encompass the interaction between cultural and specific sociolinguistic factors (Steffensen, Joag-Dev & Anderson, 1979). As Langer and Smith-Burke (1982) pointed out, many educators consider "...print and story awareness, home language, and the functional uses of language as aspects of the total language background drawn upon by each reader during each reading event" (xi).

Schema Theories

This section deals with the background, theory, and research on organized prior knowledge (schemata) pertinent to L2 readers.

Background and Theory

Schema (plural: schemata), a recurrent buzz word in philosophy (Kant, 1787; 1963 edition); psychology (Bartlett,

1932; Piaget, 1926; Bruner, 1973); linguistics (Chomsky, 1957; Fillmore, 1981); and education (Ausubel, 1968; Smith, Goodman & Meredith, 1979), has been variously referred to as "subsumers/anchoring ideas" (Ausubel, 1968), "frame" (Minsky, 1975; Tannen, 1982), "script" (Nelson, 1977; Pearson & Johnson, 1978; Schank & Abelson, 1977), "plan" (Schank & Abelson, 1977), "network" (Frederiksen, 1977; 1975), or "micro/macro-structure" (Kintsch & van Dijk, 1978).

In the context of this study, these terms were considered comparable to "schemata" since they basically all refer to theoretical constructs with explanatory or descriptive functions in human information processing models of memory comprehension and learning. Several descriptions have been advanced throughout the years. Rumelhart (1977) defined schemata as "...abstract cognitive representation(s) of a generalized concept or situation" (p.290) as well as "the building blocks of cognition" (Rumelhart, 1980). For Spiro (1977), these "cognitive structures (schemata) are cumulative, holistic, assimilative blends of information" (p.137).

It would seem that schemata are both dynamic and interactive; they can undergo reader-based/conceptually driven (top-down) and text-based/data-driven (bottom-up) processing. Rumelhart and Ortony (1977) pointed out four fundamental characteristics of schemata. The latter: have

variables; can embed one within the other; represent knowledge at all levels of abstraction, and they are not definitions.

Since the thirties, the term schemata has been adopted in problem-solving research. Bartlett (1932), a pioneer in prose comprehension and story recall, conceptualized a schema as an organizing and orienting attitude or affect resulting from the abstraction and articulation of past experiences. In interpreting results from the "War of the Ghosts" experiments, Bartlett postulated the influence of emotive, idiosyncratic, and culturally biased schemata on the original perception of the material. Within this framework, comprehension was seen as active and reconstructive: at the time of recall, subjects both selected and invented a particular content according to the nature and requirements of the current situation or social context.

The role of schemata in Bartlett's notion of remembering is very close to the function of an internal model or generic coding system in Bruner's (1973) account of perceiving, concept attainment, and reasoning. Both men were interested in the question of going beyond the evidence, filling in gaps, and extrapolating in the comprehension process. For Bruner, this involved the learning of active coding systems that are applicable beyond the situation in which they are learned and provide a

psychological frame of reference. These subsuming systems or schemata "...give meaning and organization to the regularities in experience, and allow the individual to go beyond the information given" (Greenfield & Bruner, 1973, p.399).

Similarly, Ausubel (1968) proposed that a reader's abstract cognitive structure provides the "ideational scaffolding" for the detailed information contained in text. In his words (1968), "new ideas and information are learned and retained most efficiently when inclusive and specifically relevant ideas are already available in cognitive structure to serve a subsuming role or to furnish ideational anchorage" (p.153). Prior organized knowledge thus assumes a key role in assimilation theory as it does in schema theories.

Both schemata and subsumers tend to be hierarchically organized in level of abstraction generality, and inclusiveness. As with other organized prior knowledge mechanisms, the differences which may be observed do not outweigh the strength of their commonalities. Tenets pertinent to schema theorists (e.g., selective attention hypothesis) appear to be represented in the following description of Ausubel's anchoring ideas. Subsumers: (1) have maximally specific and direct relevance for subsequent learning tasks; (2) possess enough explanatory power to render otherwise arbitrary factual detail potentially

Anderson, 1977) to the affect; from a priori image (Kant, 1787) to motor sensory or extra-linguistic experiences (Piaget, 1926; Bartlett, 1932; Spiro, 1982). Although great emphasis in current schema theories is placed on cognitive structures, some research has suggested the importance of the attitude and affect for knowledge structures. Accordingly, for Bartlett, feelings were placed at or near the center of analysis of cognitive activity; for Spiro, cohesive concepts (e.g., "holding" a concept in the mind is analogous to holding a ball in the hand) could be either analyzable or felt, as in experiences which have textural, gestalt-like properties (Spiro, 1980).

While schema perspectives differ from one another, sometimes in important ways, this researcher perceived two sets of potentially contrasting themes, which were not always articulated and yet, appear to be interwoven within schema theoretical frameworks; they are: the reconstructive versus the constructive theories, and the selective attention versus the slot-filling hypotheses. The present dearth of information, or at least the lack of empirical data, makes it improbable for researchers to endorse the four suppositions as being mutually exclusive or to eliminate any one of them. Moreover, it must be recognized at the outset that the restless state of schema theories makes for a difficult instructional *modus operandi*.

The reconstructive theory, ensuing from the Bartlett

tradition, views comprehension as a process of accurate initial encoding of the text in memory and subsequent reconstruction of details on the basis of the listener or reader's general assumptions and expectations. A reader may therefore think that he/she is remembering yet be recalling information in a distorted form. Applications of research on reconstructive processes may be perceived in the work of Bartlett (1932); Spiro (1977); and Snyder and Uranowitz (1978).

Supporters of the second theory, the constructivists, view comprehension as an inaccurate encoding of the message, a process involving inferences and assumptions constructed during initial information input (Bransford & Johnson, 1972, 1973; Bransford & McCarrell, 1974; Schallert, 1976; Anderson et al., 1977). Assumptions are made about: word meanings; visual entities; spatial relationships among items; about instruments; about people's motives and actions. These assumptions may be guided by contextual clues contained in either the message or reader schemata. When the reader fills the gaps on the basis of inaccurate assumptions, misinterpretations may occur and memories (output) may be inaccurate (Bransford, 1979).

Two other accounts of schema-directed text-processing are often perceived in the literature: the selective attention and the slot-filling hypotheses. According to the first, readers identify text elements as important or

unimportant on the basis of an engaged, operative, or subsuming schema in much the same way as Ausubel's anchoring system (Goetz, Schallert, Reynolds & Radin, 1982). The second supposition presupposes that the schema is composed of slots (variables or place holders) that become filled with the different things or "values" the reader assumes appropriate to the particular situation or text. For relevant schemata to be realized (instantiated), the slots must be filled with background knowledge and matched with the information in the text (Anderson, Reynolds, Schallert & Goetz, 1977).

The different lines of thought in schema theory and research have not always been delineated by the various theorists. This may be indicative of the search for an entity which would be, undoubtedly, desirable to each camp. The nondelineation, the free usage and lack of clarification of terms, and what Thorndyke and Yekovich (1980) named--i.e., the absence of rigorous empirical evaluation required of scientific and most psychological theories--represented the major constraints in the reviewed literature.

Research. The empirical evidence included in this section was considered representative of current schema theories. Although not exhaustive, it exemplified implicit tenets of the reconstructive and constructive theories, and the selective attention and slot-filling hypotheses. In

many instances, the theoretical foundation did not discriminate sufficiently in that a single study could be approached from any of the different perspectives. This is suggestive of the circular reasoning which appears to characterize schema-theoretical experiments.

Ambiguous passages and sentences have been used to study the role of prerequisites for comprehension and activated knowledge. According to the slot-filling hypothesis, comprehension occurs when there is a one-to-one correspondence between the slots in a schema and the "givens" in a message (Anderson, 1977). For example, Bransford and McCarrell (1974) devised a sentence whose subsuming schema is not readily apparent and, thus, does not immediately make sense to most people: "The notes were sour because the seams split." Given the clue "bagpipe," the listener/reader is able to bring meaning to the sentence and the proper schema is instantiated. Experiments by Anderson and Ortony (1975) provided support for comprehension differences due to prior knowledge and context. In their study, when subjects were shown the word container in two different sentences, i.e., "The container held the apples" and "The container held the cola," they selected the cue basket for the first sentence and bottle for the second. This indicated that reader interpretations of container varied as a function of context and one's schemata.

Manipulation of reader schematic knowledge has been the

base of a number of experiments. Bransford and Johnson (1972; 1973) and Bransford and McCarrell (1974) investigated the influence of context cues prior to reading ambiguous texts concerning a balloon passage, "washing clothes" passage, and the use of different scissors (visual entities). Results supported an interactive theory of reading, that is, comprehension and ability to remember a passage as a function of relationships among particular inputs (e.g., title, visual clues) and currently activated knowledge. Findings imply that comprehension depends upon the reader's activation of a schema to make the passage clear.

Schallert (1976) also experimented with passages that could have two interpretations. One of these ambiguous passages, entitled either "Worries of a baseball manager" or "Worries of a glassware factory manager" was administered to different subjects. Items on a multiple-choice test differentiated the text ambiguities; text scores suggested that subjects interpreted the passage according to the contextual clue provided by the title.

When reader expectancies are not facilitated (e.g., no titles given), schemata appear to be instantiated according to reader perspective, interests, and prior knowledge. Tannen (1982) investigated interactions between mothers and doctors, friends, husbands and wives; she found that anticipatory frames (schemata) depended on past experience

and the individual's world knowledge and culture. Anderson, Reynolds, Schallert, and Goetz (1977) administered a passage which could either be interpreted as about an evening of cards or a rehearsal of a woodwind ensemble to a group of physical education students and a group of music students.

In another study, Anderson et al. (1977) employed a passage which could be interpreted as a description of a convict planning his escape from prison or a wrestler hoping to break the hold of his opponent. Scores on a multiple choice test and responses on a debriefing questionnaire indicated that the interpretation given to passages matched the reader's perspective. In the retrospective reports, 62% said that another interpretation never occurred to them while 20% reported that an alternative interpretation became evident only during the multiple choice test or when responding to the questionnaire.

Other empirical evidence on schema-based proceedings conducted by Anderson, Spiro, and Anderson (1978) provided some support for a closer correspondence between significant text information and order or recall. Seventy-five undergraduates read narratives about a meal at a fine restaurant or a trip to a supermarket. After reading the passage, students were given a 12 minute task to minimize recall for short-term memory. Students were then asked to reproduce the passage in the correct order, without omitting anything. The findings seemed to confirm the researchers'

expectation that high-level schemata play a role in the learning and remembering of text information.

In the area of artificial intelligence, recent research has studied mental processes involved in comprehension through computer representations for knowledge of complex situations, events, and concepts. In two experiments using the same design and subjects drawn from the same populations, Goetz and his associates (1982) tested two accounts of schema-directed text processing, the selective attention hypothesis and the slot-filling hypothesis. In the first experiment, 16 policemen, 20 real estate students, and 19 education undergraduates rated the relative importance of sentences in a story after being randomly assigned to one of three perspectives: burglar, prospective homebuyer, and no specified perspective. Results revealed that reader perspective is a powerful determiner of perceived importance of the information (high level schemata).

In the second experiment, subjects divided equally among the three perspectives, read the passage on a plato screen, one sentence at a time, with the reading times for all sentences being automatically recorded. Their recall was also tested by means of a free-recall protocol. Results once again suggested the importance of perspective, with readers spending more time on those portions of the text relevant to their assigned perspectives. Although not

conclusive, these findings provided some evidence for the selective attention hypothesis, while providing little or no support for the slot-filling hypothesis (Goetz et al., 1982).

The role of reader perspective, central to Bartlett's concept of attitude and the reconstructive theory, was investigated by Spiro, Cristomore, and Turner (1982) in experiential memorial representation. Specifically, the researchers examined the integrative function related to the pervasive aspect of attitudes, the function of attitudes as "landmarks" for indexing and checking memories, and the state-dependent memory. After exploring some of the effects on memory of a text produced by varying the experiential state of the reader, the researchers argued for the importance of attitude-based processes in cases where prior knowledge (schemata) does not provide a strong basis for connecting information.

The congruence between textual input at encoding and output in the form of memory reproductions was investigated in three experiments using adult and 14-year old subjects. Results suggested a close correspondence between encoding and retrieval regarding hierarchically structural operations on the information in simple stories (Backman, 1980).

Several researchers have concentrated on the interrelation between text structure and comprehension, recall, and learning of prose and expository writings

(Meyers, 1977; Langer & Nicholich, 1977; Kintsch & van Dijk, 1978). According to this research, macropropositions (high level schemata) located higher in the text structure appear to be better comprehended and recalled than those at the bottom of the hierarchy. The type and structure of the relationships among the ideas in prose also seem to influence recall greatly when they occur at the top levels of the text structure. Additionally, there is some evidence for the effects of propositional importance on story summarizations: knowledge of important propositions (schemata) tend to result consistently in both recall and summaries (Rumelhart, 1977).

Another area of research has investigated readers' story schema and story grammars. In a study with high school students, Singer and Donlan (1982) tested the hypothesis that readers can improve in comprehension of narrative prose by using more adequate and more appropriate knowledge structures for short stories (story grammars) and by using a strategy for student-generation of general and story-specific questions for interacting with text (problem-solving schema). Some evidence was found in support of this hypothesis. It was inferred that the combination of the problem-solving schema with self-question generation was an effective treatment toward more efficient reader-based processing of text.

The examined literature predominantly testifies to the

appeal schema theories have for theorists, researchers, and practitioners alike. The empirical evidence was somewhat inconclusive in that different explanations could be given for the data depending on the adopted hypothesis. Some researchers have commented on the ill-constrained, vague and circular nature of schema theories: a major critique is that they provide post hoc accommodation of data rather than processing or predictive explanations (Tuinman, 1980; Thorndyke & Yekovich, 1980). Others continue to support the notion of schemata (Anderson, 1977b; Spiro, 1982) and cultural schemata (Steffensen, 1981; McClure, Mason & Williams, 1981; Johnson, 1982). Studies in language and cultural schemata and the L2 reading process are reviewed in the next section.

Cultural Schemata: L2 Reading

From the perspective of second language reading, it is essential to examine the theory and research on the following topics: (1) language and cultural thought patterns; (2) the reading process in L1 versus L2; and (3) language/cultural schemata. A brief description of each topic follows:

Language and Cultural Thought Patterns

In the past twenty years, the multi-dimensional nature of reading has been recognized by most reading researchers and theorists (Langer & Smith-Burke, 1982). Reading is no longer viewed as the sum of isolated parts (Goodman, 1979a).

The reader's organized knowledge about language, culture, and a given reading event is believed to assist him/her in constructing meaning from text (Steffensen & Colker, 1982; Anderson, 1977). The social context of language and communication should be taken into consideration to understand modern educational problems and become cognizant of which factors "...interact with specific teaching contexts to affect the acquisition of knowledge and skill" (Gumperz & Cook-Gumperz, 1980, p.1). Although some researchers question the degree of influence that language competence has on learning and reading (Hudson, 1982), others have argued to the contrary (Whorf, 1956; Smith, Goodman & Meredith, 1970; Kaplan, 1980).

The issue of language and cultural schemata remains in need of research (1983 Fall computerized search of ERIC and Dissertation Abstracts). What are the functions of language? In Smith, Goodman, and Meredith's (1970) words, "The basic and primary role of language is to embody reality, to be the carrier of the world image" (p.4). Language, it seems, allows the individual to objectify and conceptualize himself/herself and his/her world. That world may be physically the same for everyone but different linguistic groups will view it from a different perspective. Language acts as a filtering system through which reality is perceived and, in turn, is shaped by it (linguistic relativity theory). According to Whorf (1956):

Every language is a vast pattern system, different from others, in which are culturally ordained the forms and categories by which the personality not only communicates, but also analyzes nature, notices or neglects types of relationship and phenomena, channels his reasoning, and builds the house of his consciousness. (p.252)

Although research on the linguistic relativity theory (Sapir-Whorf hypothesis) is largely inconclusive, it is suggestive of factors influencing the linguistic performance and competence of L2 comprehenders. Specifically, the four major suppositions of the Sapir-Whorf hypothesis may be summarized as follows:

Language Schemata

1. Languages that make certain lexical distinctions enable speakers of that language to talk about certain topics (e.g., different kinds of snow among speakers of Eskimo) which are not so easily accessible in languages that do not make these lexical distinctions

Cultural Schemata

1. Languages that possess particular grammatical features (e.g., absence of tense in Hopi; order of adjectives in English vs. Romance languages) predispose speakers to certain cultural styles or emphasis (e.g., timelessness; inductiveness vs. deductiveness).

2. Grammatical characteristics (schemata) facilitate or render more difficult various non-linguistic behaviors (e.g., action schemata) on the part of their speakers.
2. Languages that have certain lexical distinctions enable speakers to remember, perceive, or learn certain nonlinguistic tasks more efficiently and more effectively than languages that lack these distinctions (e.g., differing color terminologies of English and Zuni).

In brief, language and cultural schemata may control or at least affect a person's thoughts. An individual's thinking follows certain schemata or "a network of tracks laid down in the given language" (p.256) which may constrain his/her reality, cognitive style, and ability to acquire other aspects of reality, cognition, and culture ingrained in other languages (Whorf, 1956).

The interrelatedness of thought and language was also central to Chomsky (1957) and Vygotsky's (1962) work. For Chomsky, the individual's innate schemata determines his/her linguistic deep structure (language schemata). For Vygotsky, a "complex activity" or schema coordinates all basic cognitive functions in the process of concept formation. Language is one schema "...by which we direct our mental operations, control their course, and channel

them toward the solution of the problem confronting us" (p.58).

Close to this notion of problem-solving language schemata is Kaplan's (1980) approach to reading and writing rhetoric. According to Kaplan, language is a schema which offers its speakers a "ready-made interpretation of the world" (p.400); cultural thought patterns characterize both logic and rhetoric. As he pointed out, L2 students may approach language processes with a different set of expectations. For example, speakers and readers of English tend to have a linear sequence organizational schema. However, Arabic speakers expect a complex series of parallel constructions; orientals appear to use an indirect, spiral-like schema for writing and reading. Although research is needed in the area, Kaplan suggested the use of contrastive rhetorical practice to aid L2 students who do not have English schemata available.

Malmquist (1978) discussed a number of important inter- and intra-linguistic characteristics for the reading process and reading instruction. They include:

1. differences in the writing system: for example, systems using word-concept characters (e.g., Chinese); systems using syllable-sound characters (e.g., Japanese); and systems using alphabetic or letter-sound characters (e.g., English);
2. within alphabetic languages, variation of

- letter-sound correspondence (e.g., Finnish, phonematic; English, unphonematic); degree of morpheme-word correspondence (e.g., Finnish: isaleni; English: to my father);
3. differences in writing compound words (e.g., Finnish: lukuopetus; English: reading instruction);
 4. differences in the information redundancy or measure of the efficiency of a given code compared with a "perfect code" (e.g., 50% redundancy in Swedish).

It could be inferred from these differences that the L2 (e.g., ESOL) reader might be coping with a complex set of schemata when reading in the second language and that these schemata may vary in function of the differences within and between the languages of the L2 reader.

The Reading Process in L1 versus L2

Background. Reading in the context of this investigation was considered an hypothesis-testing process involving the interaction between thought and language, reader and print (Goodman, 1970). In this view, reading comprehension depends on the efficient interaction between the reader's linguistic knowledge and his/her other schemata (e.g., knowledge of the world, conceptual development). Through an active process, the reader approaches print with expectations based on his/her schemata, then samples the text by selecting the fewest, most productive language cues

(graphophonic, syntactic, and semantic) necessary to confirm or reject the initial hypothesis. These strategies of sampling, predicting, testing, confirming, and correcting (when necessary) are controlled and determined by the reader's schemata. Since reading is only "incidentally visual," the reader should make little sense out of the text save for his/her organized prior knowledge (Smith, 1973; Anderson, 1977). In other words, prior knowledge may limit the reader's ability to draw inferences in a particular situation or with certain types of materials, thus seriously hindering his/her comprehension.

Specific comprehension problems have been suggested by recent research. They include: schema availability or lack of sufficient background knowledge; schema selection or not being able to focus one's prior knowledge; schema maintenance or continuing to use the appropriate schema while reading (Pearson & Spiro, 1982); and schema overgeneralization or overuse (Thorndyke & Hayes-Roth, see Tuinman, 1980). It could thus be logical to infer that instruction explicitly dealing with schemata is essential to overcome these difficulties.

The ESOL reader may be susceptible to schema difficulties in conjunction with low second language competence while also operating from a potentially different reading schema. Hancock (1978), adapting Burke and Goodman's (1973) work, represented the reading process in L1 and L2 as follows:

Table 1*

THE READING PROCESS IN L1 AND L2 COMPARED

<u>L1</u>	The Reader Brings	<u>L2</u>
1. Native competence	1. Control over L2 syntax may range from zero to near native; vocabulary may have the same range	
2. Personal experiences	2. Limited personal experiences with L2 culture	
3. Conceptual development	3. Different conceptual development	

	The Writer Puts IN
1. Graphophonic cues	1. Ignorance of and/or L1 interference in interpreting <u>graphophonic</u> cues
2. Syntactic cues	2. Ignorance of and/or L1 interference in interpreting <u>syntactic</u> cues
3. Semantic cues	3. Ignorance of and/or L1 interference in interpreting <u>semantic</u> cues

Difficulties

<u>Process</u>	
1. SAMPLING	1. Learner may not know where information is stored; which language units have the most meaning.
2. PREDICTING	2. _____ be unable to predict structures and meaning; may predict on basis of L1.
3. TESTING	3. _____ not be able to answer: Does that make sense in L2 or Does that sound like L2.
4. CONFIRMING	4. _____ be unable to confirm.
5. CORRECTING (when necessary)	

*Unpublished table developed and used in lectures given by C.R. Hancock (1978) while teaching at the University of Maryland, College Park, MD.

Psycholinguistic Perspective: Research in L2. Over the past decade second language researchers have sought empirical data to determine how the psycholinguistic perspective relates to L2 reading. Since the 70's, a major thrust of this research has addressed the areas of miscue analysis (Goodman, 1981) and cloze procedure (Clarke, 1979). Both areas have contributed to current thinking. Reading is viewed as an active endeavor which is dependent upon the reader's prior knowledge (language background, world knowledge, cultural characteristics).

Goodman (1981) postulated that "by examining the miscues of readers of wide ranges of backgrounds and proficiencies, we've forced attention to the fact that the study of reading cannot be confined to a focus on print, letter-sound relationships, and words." We have begun to realize how "oral miscues reflect the psycholinguistic process of constructing meaning through predicting, sampling, confirming, and correcting" (ix). Accordingly, this method enables researchers and practitioners alike to gain insights into the reader's comprehension process by analyzing his/her syntactic and semantic processing, which is partly revealed through the intonation and graphophonic information he/she used during the oral reading. A few studies within a psycholinguistic theoretical framework were included in this section.

Building on Goodman's work, Hudelson (1981) investigated the oral reading behavior in Spanish of 30 second and third

grade native Spanish-speaking Mexican-American children. The subjects were enrolled in a bilingual program; they had all received initial reading instruction in Spanish. The investigator asked the children to first read a list of words at their instructional level and, on the following day, had them read a passage containing the same words. Additionally, they were required to read an instructional level selection with some words that were covered up and which the subjects had to predict.

This study indicated that a significant number of words pronounced incorrectly in isolation subsequently were pronounced correctly in the selections (e.g., preprimer: 54.7%; primer: 71.48%; first grade: 85.2%; second grade: 91%; third grade: 80.3%). However, many reading miscues that were not made when the subjects read the word lists were made when they read the words in the selections (26.8%; 49.4%; 85.3%; 75.2%; and 76.5%, respectively, to reading levels listed above). Findings suggested that readers used graphophonic cues contained within the words as they read. The miscues also demonstrated the readers' use of contextual cues in the stories and from the particular linguistic-cultural experiences of the readers.

If miscues reflect the reader's linguistic and cognitive processes, then miscue analysis of L₂ reading may yield valuable data on the relationship between L₁ and L₂ reading. An issue often raised is the extent of transfer of reading

skills and strategies from one language to another. Is the reading process universal in all languages "...with minor variations to accommodate the specific characteristics of the orthography used and the grammatical structure of the language"? (Goodman, p.27)

A number of studies have addressed the issue of psycholinguistic universals. Romatowski (1981) examined the oral reading in Polish and English of native Polish-speaking fifth graders who had lived in the United States for three years. The results demonstrated that 39.8% of the miscues generated in English and 55.9% in the Polish story resembled very closely the actual written word (high Fit). As expected with words of low Fit, a higher percentage of miscues was made in the English story (20.9%), with only 11.5% made in the Polish story. The high sound/symbol relationship in Polish and the students' knowledge of it appeared to influence their reading. This study also indicated that besides this metalinguistic knowledge, the subjects' other sources of prior knowledge also affected their comprehension. The regional difference in content and language between them and the author hampered their information processing.

Clarke (1979) also concentrated his efforts in this area. Two studies were conducted to determine if: (a) the reading behaviors of adult Spanish speakers reading in Spanish and in English could be supported by psycholinguistic theories; and (b) if these readers transferred their skills

to English. In the first study, 21 adult Spanish-speaking ESOL students took cloze tests in both languages. In the second study, the oral miscues in English and in Spanish of a good L1 reader and a poor L1 reader were analyzed. The two studies supported psycholinguistic principles and provided some evidence for a negative effect of low L2 competence on the transfer of L1 reading skills to the second language. Clarke suggested that "limited command of the language produces a 'short circuit' effect on good readers, forcing them to revert to poor reader strategies" (p.121).

Cziko (1978) showed a concern for isolating, analyzing, and comparing the use of syntactic, semantic, and discourse constraints by adolescent readers of French either as a first or as a second language across levels of language proficiency. Two meaningful, two anomalous, and two random texts were constructed from two French narrative passages. They were administered to four groups of students (beginner, intermediate, advanced, and native speakers). Results indicated that all groups made use of the syntactic information in the anomalous texts, but only the most proficient in French were able to use the semantic constraints in the meaningful texts. Cziko concluded that skills may be developmental and that L2 adolescent readers may develop sensitivity to the L2 syntactic system prior to sensitivity to the semantic system.

Both Clarke (1979) and Cziko's (1978) research suggested

that there is a language ceiling which reduces the ability to transfer L1 skills. However, they also found that good readers in L1 were still better readers in L2 than the poor readers of comparable level of language proficiency. The ability to read a foreign or second language is often assumed to be a function of the students' proficiency in the L2, but data gathered in these studies also indicated that there may be other factors, for example, native language reading skills, which affect second language reading.

Deemer (1978) was interested in the transfer of skills from L1 to L2 among 28 native Spanish readers who were enrolled at the beginning, intermediate, and advanced English proficiency levels at the University of Pittsburgh's English Language Institute. Comprehension tests were administered to each of the groups (multiple-choice and cloze tests). Subjects were instructed to read two articles from "the Readers Digest" as rapidly as possible without hampering their understanding of the main plot. Intensive reading comprehension was measured through cloze tests. Results of this study demonstrated that the highest English proficient group had a strong significant correlation between reading skills in the two languages, the middle group had a light correlation, and the beginners had no correlation. The investigator agrees with Deemer about the importance of the strong correlation found at the advanced-intermediate level, that is, well before these students obtained fluency in the

second language. Deemer concluded that it might be sound pedagogical practice to do any remedial reading work in the students' native language. This suggestion would be feasible in a bilingual classroom, but it would not be applicable to most ESOL settings in the United States.

The view emerging from this line of research is one of reading as information processing. This means that:

The reader, a user of language, interacts with the graphic input as he seeks to reconstruct a message encoded by the writer. He concentrates his total prior experience and learning on the task, drawing on his experiences and the concepts he has attained as well as the language competence he has achieved. In this process, thought and language interrelate, but they are not the same. Reading can be described as a psycholinguistic process, in which meaning is decoded from a linguistic medium of communication rather than a thinking or linguistic process. (Goodman in Smith, 1973, p.162)

Over the past twenty years researchers have increasingly recognized the multidimensional nature of reading. Cazden (1982) argued for the integration of psychological, linguistic, and social perspectives in literacy to improve education. According to her view, it is extremely important to support and strengthen the reader's "internal context" so that he/she may have a more holistic understanding even when

he/she is in the earliest stages of reading, that is "temporarily focused on letters and syllables in school instruction" (p.414). Cazden also acknowledged the potential effects of the external or social context on the reader in each reading event.

Reading in a second language is compounded by co-occurring processes. Several factors may be involved in the comprehension of the L2 reader. Fishman (1971) emphasized the importance of: social dominance patterns and societal values; bilingualism; native language maintenance or rejection; exposure of and attitude toward the L2 and culture; and the desire and need for acculturation. It seems logical that the L2 reader might differ from the L1 reader also in his/her purposes for reading, degree of motivation, interests in reading, self-concept, development of reading ability in the second language, and schemata for reading.

Language/Cultural Schemata

Following Bartlett's lead, researchers in recent years have investigated the influence of the reader's cultural background on his/her comprehension and recall. For the most part, research has focused on effects due to text structure, genre, text content, or induced prior knowledge.

A line of research which has been found influential on comprehension concerns characteristics of text. Studies in this area have often examined story grammar. The relationship between story schema, the type of organized

prior knowledge most discussed so far, and story grammar is embodied in Whaley's (1981) definition; it is "a set of rules that will define both a text's structure and an individual's mental representation of the story's structure" (p.763). Using a sequential recall methodology, Kintsch and Greene (1978) asked American college students to read and recall a native text (a Grimm fairy tale) and a foreign text (an Apache folk tale). Findings revealed better recall of high level propositions in the native passage than the foreign passage. It would seem that the mismatch between the reader's schema of culturally-familiar story structures and text decreased comprehension and recall (both oral and written). In Adams and Collins' (1979) words:

...a text only produces for listeners or readers as to how they should retrieve or construct the intended meaning from their own previously acquired knowledge. The words of text evoke in the reader associated concepts, their past interrelationships and their potential interrelationships. (p.3)

Research on text structure has tended to yield dissimilar data. Contrasting findings on the importance of culturally familiar text structure (Bartlett, 1932; Kintsch & Greene, 1978; McClure, Mason & Williams, 1981; Johnson, 1981) resulted from the work of Mandler, Scribner, Cole, and DeForest (1980). Five stories were used, one Vai and four "foreign" folktales, all judged as authentic Vai stories by

the subjects. The data from the recall of the stories by Liberian nonschooled children, nonliterate adults, nonschool literate adults, and schooled literate adults were compared. A comparison then was made with similar data from American children and adults. Results indicated that stories having the schematic form studied in this research are recalled by people of different ages and different cultural backgrounds in highly similar ways. Interpretation of the data supported the researchers' hypothesis of the universality of certain kinds of schematic organization and their control of memorial processes.

McClure, Mason, and Williams (1981) investigated the effects of sociocultural differences on reading comprehension. A story unscrambling task was given to a large sample of Black, Hispanic, and Anglo students. While the greatest effects were for grade and reading achievement, findings suggested that the three cultural groups have different strategies for choosing initial and final sentences and for making narratives internally cohesive. Specifically, Hispanics (43%) outperformed Blacks (39%) on the initial question and on the setting versions of the stories (78 and 73%) but were outperformed by them on the initial conclusion version (33 and 35%). Anglos tended to apply a linear organization; only a small number (7%) selected the initial question version. Descriptions of the physical state of the characters were considered to be more appropriate at the

beginning of the story by Blacks and Hispanics while Anglos relegated them to the second half of the story. No effects were found for social class, sex of student or school location.

The role of conceptualization or schema availability and selection on L2 reading, including the effects of interference and other L1 factors, were examined in a study by Ulijn (1978). A group of Dutch and French speaking adults read a French instruction for finding their way in an imaginary French town. Two sentence versions, one with a parallel structure and the other with a contrastive structure, were used. Once again, reading, in both the L1 and L2, revealed a positive effect of preliminary training with a city map, thus providing some evidence for the impact of organized prior knowledge on reading.

The reading (listening)/recall methodology followed in text content studies usually involves the use of two passages, one containing a culturally familiar topic, the other unfamiliar content which tends to result in ambiguous interpretation. After reading, the subjects complete an interpolated task and then a recall test. Results are often obtained through theme revealing disambiguations, intrusions, and inference probe tasks.

Using this methodology, three cross-cultural studies were conducted. The first dealt with American and Indian wedding customs (Steffensen, Joag-Dev & Anderson, 1979); the

second concerned an episode of "sounding" as interpreted by white or black Americans (Reynolds, Taylor, Steffensen, Shirey & Anderson, 1981); and the third, a replication of the first study, involved listening to stories based on the medical beliefs and practices of one or the other cultures.

Findings of all three studies provided some evidence for the effects of cultural schemata on the interpretation of prose material. Specifically, the researchers found greater accuracy and elaboration in the recall of native passages and a bigger number of recall errors in distorted text portions. These errors were attributed to lack of generalized information about the event being described or accommodation of the foreign events to superficially similar practice in the native culture.

Of the three experiments, the study of black inner-city/white rural cultural knowledge was the only one without a balanced contrast between an event in each of the two cultures that performed similar functions. From a schema theoretical perspective, the wrong cultural schema was evoked as the verbal play was misidentified as a fight. Thus, there was a mismatch between the real world knowledge base of the reader and that presupposed by the text.

The American and Indian texts were further analyzed for evidence of the breakdown of textual cohesion on comprehension (Steffensen, 1981). The causal and adversative conjunctions in both texts were identified and were rated as

occurring in sentences either with or without cultural significance. The analysis of the recall protocols of the American text revealed that more cohesive elements in culturally significant sentences were recalled by American subjects than by Indian subjects in three of the four cases. The data from the Indian passage were less clear. A number of American and Indian subjects used cohesive elements incorrectly to conjoin two propositions that did not stand in a cause/effect relationship in the original passage. This misidentification of cause/effect relationship indicated a mismatch between the reader's real world knowledge and that presupposed by the text. Accordingly, what appears to be a language problem in the recall protocols of L2 speakers of English may be a problem of background (Steffensen, 1981).

The work of some researchers has indicated that the effects of membership in a subculture within the same national group may be different from those suggested by studies involving cross-cultural perspectives. Lipson (1983) investigated the influence of culturally specific prior knowledge of the reading comprehension of children whose religious affiliation was either strongly Catholic or Jewish. Thirty-two fourth, fifth, and sixth grade students were asked to read a culturally neutral passage. The data from this task provided baseline information on the students' reading level. Two other passages, Bar Mitzvah and First Communion, were presented in counterbalanced order. Measures of free

recall, probed recall, and reading time were used as dependent variables. Prior knowledge about the religious topics was a primary determiner of post-reading performance. Findings suggested that subjects had greater comprehension when they possessed a culturally appropriate schema, which facilitated integration of the new information. However, lack of schemata appeared to hamper the children's text-processing of unfamiliar material.

Johnson (1981) investigated the effects of the complexity of the English language and the cultural origin of prose on the reading comprehension of 46 Iranian intermediate and advanced ESOL students at the university level. Half of the subjects read the unadapted English texts of two stories, one from Iranian folklore and one from American folklore; the other half read the same stories in adapted or simplified English. Multiple choice testing was done on explicit and implicit information. The recall questions on the stories were also given to 19 American subjects for comparison purposes. The results indicated that the cultural origin of the story had more effect on the comprehension of the ESOL students than the level of syntactic and semantic complexity. The fact that the native English readers had better comprehension of the unadapted English and the story based on American folklore also supported the impact of cultural schemata.

In another experiment, Johnson (1982) explored the

effects of induced background knowledge on reading comprehension. Seventy-two advanced ESOL university students read a passage on the topic of Halloween which contained unfamiliar and familiar information based on the subjects' recent experience of the custom. Subjects studied the meanings of preselected unfamiliar vocabulary before reading and/or used a glossed text. Results on the recall of the passage and of the sentence recognition task indicated that prior cultural experience (cultural schemata) prepared readers for comprehension of the familiar information about Halloween in the passage. Exposure to the vocabulary words prior to reading appeared not to have a significant effect on reading comprehension. This finding may appear contradictory according to the relationship between vocabulary and schema availability presumed by an interactive theory of reading.

The interaction between vocabulary and schema availability is not always clear. Controlling for reading ability was found to be significant in a study of 88 sixth-grade native English-speaking students in Illinois. Freebody and Anderson (1981) demonstrated that high-ability subjects did poorly on the familiar passage containing easy vocabulary, whereas low-ability subjects did well on the unfamiliar passage containing easy vocabulary but very poorly on the familiar passage containing difficult vocabulary.

Hudson (1982) investigated the effects of induced schemata in L2 reading among 93 students studying ESOL at an

intensive language institute. The students had three levels of English proficiency which matched their reading levels. The levels were defined as: beginning, 3.0-4.5 (SRA); intermediate, 6.0-7.5 (SRA); and advanced, 9.0-12.0 (SRA). Prior knowledge was induced through the use of pre-reading activities, either a picture stimulus and related questions or a vocabulary list. The results of the study indicated that:

1. L1 proficient readers' poor performance in L2 reading may be due, at least partly, to their schema production;
2. The effectiveness of externally induced schemata may be greater at lower levels of proficiency than at higher levels; and
3. Induced schemata can override language proficiency as a factor in comprehension.

Summary

Interesting suppositions have been made regarding the role of the personal involvement of the reader and his/her organized prior knowledge (schemata) on his/her comprehension. Selected research was reviewed on: dual interpretations; topic-familiarity; text structure; culturally-based passages; and induced schemata effects across levels of English proficiency. Although a large body of research has been accumulating in recent years, additional empirical evidence on schema theories must be provided before

findings can be generalizable. A more comprehensive view of reading is needed (Goodman, 1979a).

The researcher attempted to make the investigation more comprehensive by addressing the related questions to two metacognitive activities, i.e., prediction of task demand prior to reading and awareness of one's success or confidence after reading. These aspects were included in the hope of gaining additional insights into the interaction of processes involved in learning and comprehending (Bransford, 1979) and in "effective reading" (Brown, 1982, p.29).

Selected Metacognitive Inquiries

This section reviews the areas of metacognitive research which relate directly to the specific research questions of this investigation. The two areas included are background and theory, and research. The brevity of this section is not due to a paucity of metacognitive literature nor is it a result of any disregard for this line of inquiry. Rather, this discussion is limited by the scope of the study, which is focused upon the other two reviewed areas (i.e., schema theories; cultural schemata: L2 reading).

Background and Theory

Metacognition is a recurrent buzz word in: oral communication of information; oral persuasion; oral comprehension; reading comprehension; writing; language acquisition; attention; memory; problem solving; social cognition; and diverse forms of self-control and

self-instruction (cited in Flavell, 1981). Metacognition was defined by Flavell (1981) as "cognition about cognition" (p. 31) or "one's knowledge concerning one's own cognitive processes and products or anything related to them" (1976, p. 232). It is a term which refers to the awareness, active monitoring, regulation, and orchestration of these processes "in relation to the cognitive objects or data on which they bear, usually in the service of some concrete goal or objective" (p.232).

Flavell's (1981) "cognition about cognition" is a broad and loose definition which tends to include the two lines of metacognitive inquiry: self-knowledge about reading and self-regulation of that knowledge. In the context of this study, the term refers only to the first research area. Metacognitive knowledge is operationally defined here as one's predictive knowledge of a reading task prior to reading and awareness of one's success or confidence after reading.

Brown (1982) traced the origin of current metacognitive features of learning to read back to early intelligence theorists and educational psychologists like Binet, 1909; Dewey, 1910; Thorndike, 1917; Spearman, 1923; and Huey, 1968. All essentially agreed that reading involves the metacognitive skills of self-awareness and self-regulation (pp.30-31). Yet, although the importance of metacognition was recognized, it did not greatly affect research and reading instruction implementation. Kendall and Mason (1982)

attributed the current interest in metacognition to a paradigm shift which has occurred in the field of learning in psychology in the post-behavioristic period combined with advances that have been made in computer science and linguistics. More emphasis has been placed over the past decade on the study of thinking, reasoning, and reflection. Researchers are now more "able to express their constructs with more precise formulation and to make use of more powerful experimental procedures" (p.4).

At present, the work of many educational psychologists centers around the notion that reading for meaning involves metacognitive activity. Brown (1982) states:

If students are aware of what is needed to perform effectively, it is possible for them to take steps to more adequately meet the demands of a learning situation. If students are not aware of their own limitations, or the complexity of the task at hand, they can hardly be expected to take preventative actions in order to anticipate or recover from problems. (p.28)

Thus, effective reading involves the following metacognitive activities: (1) understanding both the explicit and implicit task demand; (2) identifying the important aspects of a message; (3) focusing attention on the major topic or idea rather than trivia; (4) monitoring to determine whether comprehension is occurring; (5) engaging in self-questioning to determine whether goals are being

achieved; and (6) taking corrective action when failures in comprehension are detected (p.29).

In an attempt to externalize internal cognitive processes, researchers began trying "to find out what is running through the child's mind as he or she wends his or her way through the task" (Flavell, 1976, p.234). Numerous empirical studies have been undertaken to examine learners' awareness of their linguistic or cognitive knowledge, with the prototypical methodology employing either oral or written interviews or self-reports.

Reasons for investigating metalinguistic knowledge are self-evident in light of the interrelation and interdependence between reading and both language and thinking processes. In his synthesis of pertinent literature, Chaudron (1983) suggested that "metalinguistic judgments might include not only statements about intuitions of grammaticality but, also, for example, opinions or attitudes about the style or content of utterances, perceptions of the segmentation of words into sounds, and categorical or abstract knowledge about language, its structure, and its uses" (p.344).

It would seem logical to infer that individuals actively involved in acquiring or learning a language probably possess metalinguistic knowledge, which facilitates their learning to read. In the second language field, investigators have considered the effects of learners' quantitative and

qualitative knowledge of the second language on their metalinguistic awareness. According to Chaudron (1983), Corder (1973) postulated that normal L2 learners should be very good informants about their interlanguage; for example, their use of translation from L1 usually results in familiarity with metalinguistic terminology. Hypotheses have also been formulated (Chaudron, 1983) regarding the relationship between learners' metalinguistic knowledge and their acquisition or learning processes (as defined in Krashen's Monitor Model), and consequent effects on their learning to read.

Research

Investigators in both L1 and L2 reading have sought metalinguistic or metacognitive data through the use of self-reports, either verbal reports or questionnaires.

Verbal reports have been criticized in the literature because the data may be: (1) too subjective or unscientific; (2) inaccurate, not resembling closely the actual cognitive processes used in the tasks (Nisbett & Wilson, 1977); (3) incomplete (Ericsson & Simon, 1980); (4) distorted, for learners may report what they think the investigator wants to know (Ericsson & Simon, 1980); and (5) slanted in favor of subjects who are verbal or those who tend to consciously reflect on their mental states. Notwithstanding these criticisms, if areas of human cognition that cannot be measured objectively are to become accessible, then "verbal

reports, elicited with care and interpreted with full understanding of the circumstances under which they are obtained, are a valuable and thoroughly reliable source of information about cognitive processes" (Ericsson & Simon, 1980).

L1 Reading. Myers and Paris (1978) used an interview technique to determine the effects of personal abilities, task parameters, and cognitive strategies on the reading of eight and twelve-year old native English speakers. Findings indicated a developmental difference among the subjects. Older students knew more about the semantic structure of paragraphs, goals of reading, and strategies to correct comprehension. Additionally, these subjects were reading for meaning while the younger children depended mostly on their decoding skills to resolve "an orthographic-verbal translation problem" (p.688) or reading comprehension failure.

Moore and Kirby (1981) replicated Myers and Paris's (1978) study with Australian second and sixth graders. Their findings corroborated 11 of the items of Myers and Paris's questionnaire. Similarities were found between the different age groups in their awareness of the impact of interest, familiarity, length, and rereading on their comprehension. Sixth graders were reported to have greater verbalized awareness that: reading and mathematical ability are not necessarily related; motivational factors may influence

reading performance; sentences are arranged in paragraphs in logical order; introductory sentences are usually semantically loaded; reading strategies may vary according to task demands; skimming involves searching for specific words; and external aids may be used to resolve comprehension failure. Disagreement between the two studies was found between the age groups on their awareness of: specialized skills required in reading; difference between reading speed and mode; identification of summary characteristics; and different ways of resolving comprehension failures.

Canney and Winograd (1979) emphasized a 15 item questionnaire to investigate the schemata for reading of 24 students from grades two, four, six, and eight. The researchers were interested in the relationship between the age of the students, adequacy of their reading schema, and their reading comprehension performance. The responses to the question "What is reading?" were examined for information on the subjects' schemata for reading. The answers to the other 14 questions were analyzed to learn more about the students' attitudes toward reading and their awareness of their own strengths and weaknesses in reading. A majority of the good comprehenders (10 of 13) made reference to meaning-getting as a part of reading at every grade level, except second grade, while only 2 or 3 poor comprehenders at the eighth grade level made reference to it. All of the subjects mentioned decoding at least once except for one

higher comprehending eighth grade student. Generally, both good and poor second and fourth graders showed a decoding focus; good readers attended to meaning by sixth grade while poor readers kept the decoding emphasis.

Garner and Kraus's (1982) data-based research supported a meaning-orientation among good comprehenders and a decoding focus for poor comprehenders among junior high school students. Seventh grade students' awareness of comprehension difficulty and their knowledge of comprehension strategies were investigated using an eight-item interview.

Olshavsky (1976-77) investigated the awareness of 24 tenth grade students' use of 10 comprehension strategies through the subjects' verbal protocols (think-alouds) about their silent reading behavior. Results indicated that readers verbalized the most strategies when they were interested, proficient, and faced with a concrete writing style.

Peters (1978) recognized the need of student input into the diagnostic process. After developing a cognitive self-rating scale (SRS), the researcher administered the 15-item survey to 59 upper middle class junior high school students. Students' scores on the SRS were cross-tabulated with their scores in a Content Specific Reading Test (CSRT) to determine the accuracy of placement by reading ability. The two instruments were very consistent; only 1.7% of the students classified as poor readers by the CSRT were

classified as good readers by the SRS. In addition, a t-test indicated that the SRS significantly discriminated between good and poor readers ($p < .01$). In concluding, Peters suggested that the SRS might be useful for early identification of poor readers by teachers at the secondary level.

Mize (1980) also examined students' awareness of the processes employed to read and comprehend. One hundred forty-four middle school subjects were asked: (1) to predict their probable success in answering 14 questions about an expository and a narrative passage before and after reading; and (2) to judge the correctness of their response to each item. Findings indicated that there was a positive relationship ($r = .35$) between reading ability and the confidence index and a positive relationship ($r = .40$) between reading ability and the index of general judgement. A strong relationship ($r = .75$) existed between the confidence index and the index of general judgement. Students' self reports--both good and poor readers--revealed frequent inability to judge accurately whether they had comprehended the passage.

Summary

Since reading comprehension cannot be directly observed, several researchers (Olshavsky, 1976-77; Myers & Paris, 1978; Peters, 1978; Canney & Winograd, 1979; Moore & Kirby, 1981; Mize, 1980; Garner, 1982) have collected subjective data to gain insights into readers' comprehension processes.

L2 Reading. Subjective data collected among bilinguals or second language learners includes introspective data, verbal protocols, or retrospective information.

Rose (1975) focused his attention on bilingual information processing. Using a self-rating questionnaire, he interviewed 119 university and high school students in Puerto Rico. Questions were asked about the subjects' abilities in speaking, writing, reading, listening to English, as well as how often they remembered the language in which something was written, read, or heard. The most salient results were that: (1) more subjects reported mentally translating in the productive rather than the receptive modes (.70 vs .57); (2) more subjects felt confident of their English receptive abilities than their productive proficiency (.75 vs .55); and, (3) although almost all subjects claimed that they remembered the communication language, slightly more subjects felt this way for their language production than for their receptive language use (.99 vs .87).

In a more recent study, Rose (1980) again examined the self-rating of language proficiency and language of thought among 219 Spanish-English bilingual men and women. Subjects who indicated that they thought in both languages rated themselves higher in proficiency for all four language skills (speaking, writing, reading, and listening) than did those who indicated that they thought only in their dominant

language.

Cohen and Hosenfeld (1981) reviewed their research on L2 learners' metalinguistic awareness and use of strategies when speaking, listening, reading, writing, and performing on grammatical and vocabulary tasks. In one of Hosenfeld's studies, 15 to 20 minute interviews were held with 23 American students enrolled in a beginning intensive Spanish course at Ohio State University. Subjects had a tendency to retrospectively self-observe rather than think-aloud. The self-report data was transcribed and analyzed qualitatively. Findings demonstrated the subjects' metalinguistic awareness as well as wrong assumptions being made by their teachers. For example, instead of reading for meaning, one student reported counting down to her line and rehearsing it until it was her turn to read aloud.

In another study reported in Cohen and Hosenfeld's article (1981), Hosenfeld used a think-aloud interviewing technique to examine the reading comprehension process of 20 high and 20 low comprehenders as defined by their scores on the MLA Cooperative Test of Reading Proficiency. Subjects were American students enrolled in level two French, Spanish, and German classes in urban and suburban high schools in western New York. Successful readers had a meaning-orientation, that is, they read in broad phrases, skipped unessential words, and guessed using contextual clues. Unsuccessful readers focused on decoding in a word-by-word

fashion.

Three other studies, reviewed in the article, discussed the work of Cohen and his colleagues with non-native English speakers in Israel. In all three studies, the subjects had read the passage (biology, political science) prior to meeting with the investigators and had taken note of their use of strategic behavior. In addition, students were asked questions about their awareness of the graphic organization of the text, rhetorical principles, grammar, and vocabulary. Pedagogical implications for ESP (English for Special Purposes) may be drawn. In some cases, students reported difficulty with non-technical language (EFL) rather than technical vocabulary (ESP).

Summary

The most common methodologies in the knowledge line of metacognitive inquiry have consisted of self-reports or questionnaire-interview techniques in both L1 and L2 reading research. While this research has yielded encouraging evidence, the means of gaining insights into cognitive processes and schemata remain largely speculative. Further research is needed and new methodologies must be developed. Although self-reports are subject to criticism (Ericsson & Simon, 1980; Nisbett & Wilson, 1977), reasons for this line of inquiry remain compelling (Hare, 1981); not only do they yield useful information, but "We stand to gain both individually in working with our students and in generating

new insights we can all share" (Hosenfeld, 1976, p.129).

Methodological Considerations and Research

Several methodological considerations were made in developing this study. The view of reading endorsed by the investigator involves the interaction of co-occurring cognitive processes. Comprehension for L1 readers is a highly complex process, but for L2 readers it is compounded by their language and cultural knowledge, which usually varies from the text author's background. Several aspects were included in this review in compliance with the investigator's broad view of the reading process.

This section does not deal extensively with the literature relevant to the methodology selected for this study, but, rather, it briefly reviews the following areas: (1) training studies; (2) assessment of oral language proficiency; (3) cognitive assessment; and (4) selected instructional techniques.

Training Studies

Background. From the beginning of the seventies, training studies have been employed by educational psychologists from diverse backgrounds to address issues of developmental change. Training studies have provided a method of investigating the use of strategies in both a natural or a training setting. Preliminary findings have

indicated that young and poor learners tend not to introduce strategies to aid their learning. When properly trained, however, they usually are able to improve their performance. Successful training usually requires explicit and extensive instruction, a fact which sometimes discourages its use.

According to Brown, Bransford, Ferrara, and Campione (1982), the failure of training studies to effect major changes in the intelligent use of strategies characterized research in the middle seventies and "provided a prime impetus to the growth of the concept of metacognition" (p.16). Researchers from different traditions subsequently have shown an interest in developing a cognitive theory of learning, which appears to be an interactive learning model primarily concerned with learner-task compatibility. A prime question within this model is the accessibility of knowledge, for example, whether knowledge or skills are widely applicable rather than welded (context bound) and if access needs to be conscious. Training studies in a number of metacognitive areas have been conducted to evaluate whether the use of strategies facilitates cognitive activity and whether students can be trained to employ these strategies spontaneously (Raphael & Pearson, 1982).

In the past, training studies attempted to promote rote recall of information, but they are now increasingly being used to develop comprehension (Brown et al., 1982). The emphasis has thus shifted from improving product or skill

deficiencies to understanding the learning process and the use of strategies for learning. Kuhn (1974) stated that "attempting to approximate the natural developmental process as closely as possible should bring us closer to what is the most worthy objective of training studies, understanding the process itself" (pp.599-600). Researchers have indicated that training can be a successful method to show that experimentally induced pre-existing knowledge determines what is understood and retained from text (Brown et al., 1982).

Training studies can be classified in three categories: blind, informed, and self-control training (Brown, Campione & Day, 1981). The first and most commonly used type was designed for theoretical rather than educational reasons. Blind study purports mainly to evaluate hypotheses about "both the processes involved in efficient performance on some tasks as well as the sources of developmental or comparative differences on those tasks" (Brown et al., 1982, p.151). Since the subjects are kept in the dark about the activities they are being induced to use, the results tend to be engineered but useful in improving learners' performance on a particular set of materials. A major drawback is transfer of learning.

The second type, informed training, is considered to be an intermediate level of instruction (Brown, Campione & Day, 1981). Students are aware they are using a technique or strategy; they are informed about the significance of the

activity and the utility of its use in other contexts. This intervention usually results in enhanced training. In the third type, or self-control training, students are instructed in the use and effects of a strategy and are also given explicit instruction about self-checking, monitoring, and evaluating the learning activity. The assumption that underlies this type of intervention is that students monitoring and regulating the strategy should see their improved performance, realize the benefits, and are able to transfer the strategy to a different situation even at a later time.

Guidelines. The following guidelines for conducting training studies have been suggested by several researchers (Pearson, 1982; Brown, Campione & Day, 1981; Meichenbaum & Asarnow, 1979; Kuhn, 1974). They are: (1) The training needs to proceed from the simple to the complex; (2) modeling of specific behaviors should be demonstrated; (3) multiple passages should be utilized to facilitate transfer; (4) explicit information regarding the nature of the task should be given; (5) the trained skill should be relevant for the trainee; (6) feedback should be provided during class and independent work; (7) an analysis of training and the transfer tasks should be provided to give evidence of where breakdown occurred in the procedures; (8) self-checking and monitoring procedures should be an inherent part of the training; and (9) training must be provided on different

occasions.

Research. In the past, reading comprehension was not explicitly taught (Cates & Swaffar, 1979). Recently, increasingly more attention has been focused on comprehension, and "the systematic application of direct instructional approaches in the area of comprehension instruction has led to superior comprehension in several studies" (Pearson, 1982, p.10). Pearson's optimism was justified, at least partly, by the positive results reported by several researchers.

Singer and Donlan (1982) instructed 15 eleventh-grade students in generating self-questioning within a schema-theoretical framework. Students were introduced to a general schema contained in most short stories (e.g., introduction, characters, goals, etc.) and were taught some schema general questions, for example, "Who was the leading character?" Subsequently, students were asked to apply the schema-general questions to a specific story (e.g., Who was the leading character? Was this story going to be more about the officer or the barber?) Control-group subjects read the same materials but answered teacher-posed questions. Results indicated that the schema-question trained group generated more questions than the other group.

Raphael and Pearson (1982) examined the effects of metacognitive training in question answering strategies on the reading comprehension of 100 students from a suburban

school system. The study consisted of two experiments. The first attempted to provide baseline data concerning the level of metacognitive awareness exhibited by expert readers (adult skilled readers) when performing tasks related to question answering. In the second study, fourth, sixth, and eighth grade students received a four-day training to recognize three question types (text explicit, text implicit, and script implicit) and identify the question answering strategies they used. Results indicated significantly higher performance of the treatment group to: (1) identify questions by type; (2) to select an appropriate question answering strategy; and (3) provide a complete and accurate response.

Hansen (1981) investigated the effects of four-day inference training and practice on the reading comprehension of 24 second-grade students in a middle-class suburb of St. Paul, Minnesota. The study was based on schema theory principles. Two experimental methods were employed. One method focused on a prereading strategy in which children utilized previous experiences to predict events in the upcoming story. The second method provided practice in answering questions which required inferences between text and prior knowledge. Findings indicated the efficacy of the training: both experimental groups surpassed the control subjects on the post-experimental comprehension questions.

Andre and Anderson (1978-79) trained high-school

students to generate self-questions about important points while reading narrative prose. Results of the two-experiment study provided evidence that generating self-questions facilitated learning more than rereading or making up questions without regard to important story points. This training was more successful with low-verbal ability students than with high-verbal ability students. The researchers attributed this finding to a greater development of metacognitive knowledge among the low-verbal ability group.

Summary

The background, theory, and guidelines supporting the training methodology selected for this investigation were discussed. The review of the literature revealed that a number of training studies were conducted in several areas, e.g., metacognition, but relatively few dealt directly with schema theory. However, since most concurrent studies reflect an interactive view of reading as does schema research, training investigations conducted in other areas of reading were considered pertinent to this study. The other three methodological considerations made to ensure appropriate controls include assessment of oral language proficiency, cognitive assessment relating to prior knowledge, and selected instructional techniques.

Assessment of Oral Language Proficiency

Background. Interest in oral proficiency and direct testing of speaking proficiency has grown in recent years.

In a chapter entitled, "The ACTFL Proficiency Guidelines: A Historical Perspective," Liskin-Gasparro (1984) connected the oral proficiency movement to the President's Commission on Foreign Language and International Studies. In 1979, members of the President's Commission recommended that language proficiency achievement goals, especially oral proficiency, be established at the end of each year of study. The American Council on the Teaching of Foreign Languages (ACTFL) Provisional Guidelines were subsequently developed through a project funded by the International Research and Studies Program of the U.S. Department of Education. The aim of the guidelines was to provide an organizing principle for the various approaches and curricula embraced by the profession at this time. "The organizing principle that is reflected in the ACTFL guidelines is language proficiency: the ability to function effectively in the language in real-life contexts" (Liskin-Gasparro, 1984, p.12).

Sollenberger (1978) described the need felt by various federal agencies to develop oral interview tests and appropriate rating scales. The Foreign Service Institute (FSI) was instrumental in developing and refining a weighted scoring system (0-5) which was applicable to the checklist that had been employed prior to the 1960's to verify the foreign language skills of FSI employees. In the 1960's other agencies, including the Defense Language Institute, CIA, and the Peace Corps, began using the proficiency rating

scale.

In the late 1960's, Educational Testing Service (ETS) became involved in training testers of Peace Corps trainees and volunteers and, subsequently, expanded the scale by developing additional descriptors of oral proficiency between levels 0 and 1 and between levels 1 and 2 (see Appendix C). This scale was in turn refined by ACTFL and the Interagency Language Roundtable--the ILR (Lowe & Liskin-Gasparro, 1984). Since 1981, grants from the Department of Education and the National Endowment for the Humanities have enabled ACTFL and ETS to modify the FSI scale by making it more applicable to academic settings (ACTFL Provisional guidelines, 1982).

Purpose and Function. According to ETS (1982), the following features characterize oral proficiency assessment:

1. The oral interview is a test of functional language ability--not passive skills or knowledge about the language.
2. The test provides an index of the current language proficiency of the examinee.
3. It judges the examinee's performance against criteria characteristic of certain basic life situations with which a speaker of the target language must deal.
4. It is a global estimate of how the examinee functions linguistically in everyday life.
5. The purpose of language proficiency testing is to assess the examinee's language performance or the

extent to which s/he is able to use the language effectively and appropriately in real-life situations. It is not an achievement test.

6. In contrast to achievement testing, proficiency testing is curriculum-free; it focuses exclusively on language competence without regard to the place, length of time, or manner in which that competence has been acquired.

7. Since a proficiency test does not cover any specified body of material, it is not possible to prepare for it.

a. An oral proficiency test examines everything an individual knows about how to use the language by sampling his or her speech production on a variety of topics at a number of levels.

b. An individual can get a perfect score on an oral proficiency test only by demonstrating speech production comparable to that of an educated native speaker of the language.

Research. During the last few years, several researchers have investigated oral proficiency issues, especially the reliability of interraters judging audiotaped interviews. Only a selected number of studies are reported in this section since this area is not the prime focus of the investigation.

Adams (1978) examined the reliability of 11 rater pairs

for approximately fifty audiotaped interviews. For the Spanish raters, the average percentage of ratings in agreement or disagreement was 94. For French raters, the average was 92, and for German it was 89. The researcher concluded her report by stating her belief that "the rate of agreement is higher in practice" (p.144) and that, although these tests are not completely objective, they are indeed necessary.

Mullen (1978) investigated the reliabilities of raters across two testing periods. She found a negative correlation between the reliabilities of the first and second testing periods for nine rater pairs and no significant difference ($p < .01$) in the mean reliabilities for the two testing periods for six additional rater pairs. Computation of the means of the mean reliabilities, controlling for the size of the sample ($N=115$, $N=152$), revealed the following measures: .883 on listening comprehension, .781 on pronunciation, .816 on fluency, .796 on grammar, and a .847 overall average.

Similar results were obtained by Clifford (1978) in a comparison of scores of 47 pre-service German teachers at the University of Minnesota on the MLA Cooperative Foreign Language Proficiency Test and the (German) Teacher Oral Proficiency (TOP) interview. The interrater reliability of total scores on the MLA test was .818 and .829 on Part C (speaking). The interrater reliability of sums of ratings from TOP interviews was .827. These results indicated that

"more direct measures of oral language proficiency may be as reliable as less direct but more structured standardized tests" (p.206).

Clark (1978) reported an in-depth study conducted by ETS. Five prospective interviewers were selected, given the initial training of interviewers, permitted to interview under realistic administration conditions, and conducted on-the-spot and taped-based interview ratings. The intrarater reliability ranged from .771 to .947 on long interviews and .740 to .904 on short interviews, with an average of .867 and .817, respectively.

Shohamy (1983) was interested in the inter and intrarater reliability of the oral interview testing. One hundred six Hebrew students attending the University of Minnesota were interviewed by the researcher for 15-30 minutes each. The audiotaped conversations were rated independently by three trained raters using the OI Hebrew rating scale, an adaptation of the scale developed by Clifford (1978) for testing German-speaking proficiency. After four weeks, approximately a quarter of the tapes were randomly selected for an additional rating by the same rater. Results indicated that the interrater reliability ranged from .94 on pronunciation to .99 on the total rating; the intrarater reliability ranged from .95 to .996. These coefficients appear to indicate that "reliable information can be obtained in spite of the subjective nature of some of

the tests" (p.222).

Assuming that the oral interview (OI) is a valid and reliable source of information, what is the relationship between the OI rating and the type of instruction ESOL students receive? This issue was examined by Schwartz (1983). Upon collecting the various data, he used two separate hierarchical stepwise regression analyses to determine: (1) if type of program was significantly related to the final oral proficiency (P-rating) score at the end of the program, and (2) whether type of program significantly predicted total P-rating gain during the program. Findings revealed that type of program was not a significant predictor of P-rating gain at Piedmont ($F(1,51) = .61$, N.S.) nor at West Charlotte ($F(1,42) = 1.54$, N.S.).

Summary

The oral interview appears to be a valid and reliable measure for testing second-language oral proficiency (Adams, 1978; Mullen, 1978; Clifford, 1978; Clark, 1978; Shohamy, 1983). In spite of the subjective nature of the test, it yields some useful information (Shohamy, 1983) which can serve in the organization of a language program (Liskin-Gasparro, 1984; Schwartz, 1983). The ACTFL Provisional Guidelines have been developed to assist teachers in obtaining a more reliable global estimate of students' communicative competence.

Cognitive Assessment

Reading is an intricate process which involves interactive complexities of language development and cognitive functioning, as well as reader sociocultural adjustment. In the case of second language learners, these complexities may enrich and disable their reading comprehension. The investigator believes that cognitive processes required by a reading task are virtually impossible to measure. Reading comprehension is not directly observable; any assessment tends to be fallible. This section summarizes a few factors, relevant to the methodology selected for this study, which are included in Johnston's (1983) book, Reading comprehension assessment: A cognitive basis.

According to Johnston (1983), "assessment of reading comprehension requires interpretation of an individual's performance of some task which is based on information from a given text within a given context" (p.20). Performance on a test depends on the following four factors: (1) the text (e.g., content, structure, and language); (2) the appropriateness of the text to the student's prior knowledge; (3) the sources of answers to questions; and (4) the task demands of the assessment procedures. Among these factors, the match or mismatch between readers' background knowledge and the nature of the text has been of interest to schema theories (Anderson, 1977; Pearson & Spiro, 1981).

Johnston (1983) recommended that teachers consider what

the objective of the test is and exclude those factors which are not directly related to the assessment task. Possible compounds might include (p.34):

1. production requirements;
2. memory and retrieval requirements;
3. reasoning requirements;
4. motivation;
5. purpose
6. social setting and interaction;
7. expectation and perceived task demands;
8. test-wiseness.

Each of these factors could be examined in great detail since they bear directly on this study. For the purposes of this review, however, they are mentioned only in that they served to guide the methodology section.

In concluding the methodology review, Johnston (1983) suggested a shift in emphasis from reliability to validity. This concern is based on the need to use natural texts and tasks as well as contextual variability "...to come to a better understanding of the reader's capability" (p.68). The following section presents some instructional procedures selected for this investigation and concludes the literature review.

Selected Instructional Techniques

Schema theorists have hypothesized that readers' have an internal schema, or cognitive structure, which organizes

their prior knowledge (Pearson & Spiro, 1980; Anderson, 1977; Ausubel, 1968). Past experiences and associations determine readers' selective attention and the importance they attribute to particular ideas in a text (Goetz, Schallert, Reynolds & Radin, 1982). Meaningfully relevant information is more likely to be subsumed into readers' schemata, facilitate their comprehension, and promote their learning (Ausubel, 1968). Schema theoretical notions have guided the selection of instructional techniques employed in this study. This section briefly reviews selected literature on the: (1) Pre Reading Plan, and (2) webbing.

Pre Reading Plan (PRP)

Background. Langer (1981) examined the work of cognitive and developmental psychologists in relation to instructional practice. She capitalized on the following three concepts drawn from their work: (1) Associations the reader can make between prior knowledge and the content to be read should be brought to students' awareness; (2) an elaboration and refinement of this knowledge can be encouraged through discussion; and (3) permitting the reader to decide what information is helpful when reading the text facilitates comprehension (p.125).

Incorporating these tenets into her research, Langer (1981) developed and refined a 3-step assessment/ instructional procedure that might be used by teachers before assigning textbook reading to their students (see Appendix

B). PReP emphasizes pre-reading awareness, elaboration and anticipation of language and concepts in the text. The assessment aspect of the paradigm assists the teacher in:

- (1) determining the amount of prior knowledge students possess about a topic and, to some extent, the organization of their information;
- (2) becoming aware of the language a student uses to express knowledge about a subject; and
- (3) using these concepts to aid students in making predictions about the text.

Procedure. Prior to using the technique the teacher selects a key concept from the text to stimulate group discussion. The concept may be represented by a word, a phrase, or a picture. The teacher asks three questions:

- What comes to mind when...
 - What made you think of...
 - Based on our discussion, have you
- any new ideas about...

While students freely associate, the teacher writes their responses on the blackboard, or students can write down their replies. This gives the students an opportunity to make associations between the key concept and their prior knowledge.

The second question is posed to assist students in developing awareness of strategies they used to arrive at decisions. Students can reflect, listen to each other's explanations, interact, and become aware of their changing

ideas. Finally, students have the opportunity to probe their memory and elaborate their prior knowledge. The teacher can then judge if the students' concepts are sufficiently close to those presented in the text to permit comprehension and learning.

For research purposes, students are asked to write down their responses which are subsequently rated by two independent judges, following Langer (1980).

Research. Some research has been conducted to determine whether students' organized prior knowledge as measured through the PReP is a predictor of their comprehension and recall.

In a study of 36 high school students, Langer (1980) found a high correlation (.741) between recall and prior knowledge for a schizophrenia passage, a lower correlation (.440) for the parakeet passage, and a high correlation (.72) between levels of prior knowledge and content word recall.

The relationship among the level of prior knowledge, recall measure and IQ measures of 19 students was examined using a partial correlation. For the schizophrenia passage, the correlation coefficient was .91; for the parakeet passage, the value was .41. Since the range of IQ scores was sufficiently broad, Langer and Nicolich (1981) concluded that prior knowledge predicts recall independent of IQ at least for normal and above average IQ students.

Hare (1982) validated and extended Langer's (1980)

research. A class of 29 sixth-graders was asked to freely associate after thinking about three key words/phrases (planets, axis, distance from the sun). The students' were also asked to predict how much of a 3-page article on the planet they thought they would be able to recall after reading. The overall qualitative topical knowledge estimate for each student was 1.57 (S.D.=.46) on a 3-point scale. Percentage of interrater agreement was .90. A quantitative rating by two new raters was also obtained. Percentage of interrater agreement was .93. The overall quantitative estimate for each student was 2.61 (S.D.=1.26). Results indicated that the quantitative prior knowledge measure was a significantly better predictor ($p < .01$) of the total number of idea units recalled than the qualitative prior knowledge measure.

One hundred sixty-one sixth graders from a middle class suburban school on Long Island, New York, participated in Langer's (in press) study. The students were randomly assigned to treatment condition, which included one of three activities: (1) the PReP and free association measures for the two passages, (2) a motivational activity, or (3) a distractor activity requiring free association to stimulus words unrelated to either passage. The correlations were .75, .85, and .86, respectively. An in-depth analysis of students' responses to superordinate implicit questions or subordinate explicit questions was also carried out. The

PReP group did significantly better than the no treatment group ($p < .001$) on the textually implicit subordinate and textually explicit superordinate questions.

Although positive preliminary evidence of the relationship between prior knowledge and comprehension or recall has been found, further research is needed on the issues that Langer (in press) had raised. These concerns include: (1) the relationship of the PReP to new concept awareness, (2) the effects of the PReP across various reading ability groups, and (3) the relationship of the PReP to various type-questions--i.e., text-implicit, text-explicit, and script-implicit questions (see Johnston, 1983, for explanation).

Webbing

Introduction. Like many other techniques of structuring information in graphic form (e.g., semantic mapping, structured overview, diagramming), webbing is a practical instructional tool which assists students in identifying, integrating, organizing, and elaborating their knowledge of a given topic before or after reading. However, webbing may be more beneficial to some students (Eliot, 1970; Hanf, 1971) because it provides a perceptual model, a visual display of relationships which can be especially difficult to explain to a class of students with varying degrees of English proficiency and different cultural background. The effect of webbing, similarly to mapping, is that of:

---perceptual comprehension rather than verbal. Instead of reading the information, one sees it. The Gestalt, seeing the whole and all its related parts, yields a powerful impact, immediate comprehension and easy retention. (Hanf, 1971, p.226)

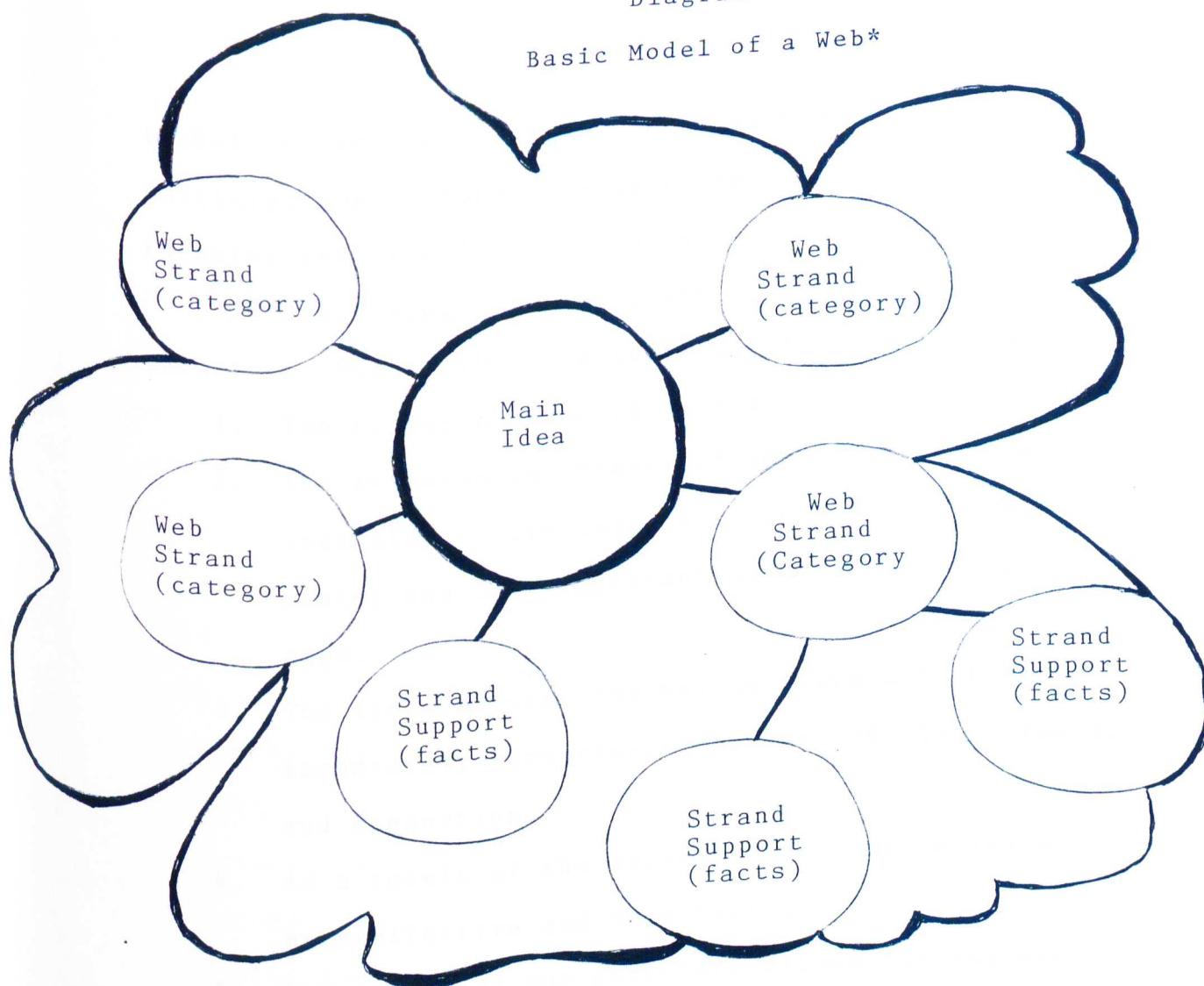
The basic model for constructing a web consists of a main idea or core question, web strands, strand supports, and strand ties (see Diagram). A brief review of the background and research pertinent to the webbing technique used in the study follows.

Background. Several terms have been used to describe various graphic organizational structures. Pfeiffer (1983) documented the similarities among the following structures: Kersh's flow-chart; Quillian's semantic network; Hanf's mapping; Pearson and Johnson's semantic map; Barron and Stone's post organizers or arrays; Kraft's free form outline; Huck's literature web; Buzan's brain pattern or non-linear technique; Freedman and Reynolds' semantic webbing; and Lyman's think-link.

Armbruster and Anderson (1982) presented a rationale for their idea-mapping (i-mapping) technique which seems equally suitable to webbing. Using a schema theoretical framework, these theorists drew an analogy between constructing an i-map of a text and constructing a coherent model of the meaning of the text. For them, i-mapping is:

---a tool that teachers and students can use to build a model of text meaning, with the finished i-map as a

Diagram
Basic Model of a Web*



*Adapted from the work of G. Freeman and E. G. Reynolds
(1980).

visual representation analogous to the thought process that the students might be expected to have experienced if they read and interpreted the text. (p.12)

These same ideas were expressed by Hanf (1971). She defined mapping as: "a graphic representation of the intellectual territory traveled or to be traveled via reading" (p.225). According to Hanf, the value of the

technique lies in its power to: maximize students' active participation, afford immediate feedback, emphasize critical thinking and transfer to other subjects.

In discussing a graphic, non-linear organization structure, Buzan (1977) included the following advantages:

1. The center or main idea is more clearly defined.
2. The relative importance of each idea is clearly indicated. More important ideas will be nearer the center and less important ideas will be nearer the edge.
3. The links between the key concepts will be immediately recognizable because of their proximity and connection.
4. As a result of the above, recall and review will be more effective and more rapid.
5. The nature of the structure allows for the easy addition of new information without messy scratching out or squeezing in, etc.
6. Each pattern will look and be different from each other's pattern.
7. In the more creative areas of note-taking, such as essay preparations, etc., the open-ended nature of the pattern will enable the brain to make new connections far more readily. (p.89)

The creative aspect of webbing or think-link models for

reading and writing has been recognized by educators in recent years. Lyman and Bruner (1977) stated that: "the clarity, versatility, and uniqueness of the designs encourage children (students) to organize and communicate their thinking often with a minimum of either verbal or written expression" (p.2).

Research. Despite the utility of webbing claimed by educators (Freedman & Reynolds, 1980; Lyman & Bruner, 1977), and despite the contention which can be made regarding its theoretical and philosophical foundation, little empirical evidence is available on the instructional value of webbing, especially as a means of facilitating or augmenting comprehension (Spring 1984 computerized ERIC search). Since webbing is similar to several other organizational structures, selected research studies on these other structures are hereby discussed.

Pfeiffer (1983) compared the effect of training using two personal comprehension strategies (the personal outlining strategy--POS--and the think-link strategy--TLS) upon students' short-term and long-term retelling of idea units for an expository passage. She also investigated the effect of prior knowledge about the passage upon the subjects' short-term and long-term retelling of idea units. The subjects for the study were 63 fourth-grade average readers. Findings indicated that the TLS group recalled more idea units in the long term retelling, but no significant

difference was found for the short-term retelling. The level of prior knowledge did not significantly affect either short-term or long-term retelling.

Armbruster and Anderson (1980) investigated the effects of mapping for eighth grade students after twelve hours of instruction. The researchers found that the subjects who mapped the passages recalled a significantly greater number of idea units than did the control groups after a 24-hour delay. It was suggested that the mapping strategy may be useful in processing text and facilitating recall.

McKamey (1980) examined the use of the web type of think-link with third grade subjects. Specifically, she was interested in the effects of the TLS on content or paragraphs, sequencing of events and long-term memory after eight training sessions. Results revealed no significant differences between the experimental and training groups. McKamey concluded that the use of an expository rather than a narrative passage might have achieved different results.

In summary, little empirical basis for supporting the instructional value of webbing has been found in the experimental literature in education. Yet, despite the inconclusive results, several researchers (Pfeiffer, 1983; Armbruster & Anderson, 1980; Hanf, 1971) have pointed out the educational potential of webbing and other similar organizational structures (e.g., mapping, structured overviews, arrays, semantic webbing, node link networks).

Chapter Summary

A careful review of the literature pertinent to this study highlighted the multi-dimensional nature of reading in a second language. Selected theoretical, philosophical, and empirical literature based on a schema theoretical framework was examined. The positive evidence reported to date was encouraging, yet results remained, for the most part, inconclusive. The proposed study was borne out of the need to examine the effects of prior knowledge training upon the reading comprehension of intermediate and advanced high school ESOL students (N=152). Chapter three presents the method selected for this investigation.

CHAPTER III

METHOD

This study investigated the effects of induced schemata or organized prior knowledge on the reading comprehension of intermediate or advanced high school ESOL students. The following section includes a discussion of the: research design, target population, materials, experimental method, data collection procedures, post-testing and scoring procedures, research hypotheses, and data analysis method.

Research Design

The design of this investigation is a Post-test only Control-Group Design, blocked on two levels of English language proficiency:

Language Proficiency	Condition	
	Training	Control
Intermediate		
Advanced		

The levels of English language proficiency were determined according to the placement procedures employed by the participating county's ESOL office. Assessment instruments used for placement of students according to English language proficiency are discussed below, in the

description of the sample.

Target Population

The sample for this study comprised 152 ESOL students who were attending two public high schools located in suburban Maryland. Teachers encouraged students to attend school for the entire training period. Participation for all six sessions allowed the students to be part of a drawing which took place at the completion of the experiment. The investigator purchased three yearbooks and six cassette tapes to be used as prizes for the drawing. One hundred sixty-six subjects were selected, 83 subjects were randomly assigned to each of two (training or control) conditions. Because of absenteeism during the training sessions or missing parent consent letters, 14 subjects were eliminated from the initial pool of students.

The two schools were selected on the basis of: close geographic proximity to one another; density of ESOL population; relatively long history of ESOL instruction in the schools, and similarity of training among participating teachers.

The sample encompassed the schools' population of intermediate ESOL level and advanced ESOL or transitional English level. Assessment instruments employed by the participating county's ESOL office included the following: (1) a standardized grammar test, namely the Structure Test of the English Language (STEL); (2) a sentence completion task,

i.e., the Revised Thumb Nail Test, and (3) an oral-aural test--the Dade County Test. All three instruments offer global estimates of English language proficiency. An additional placement criterion used by the county was a brief oral interview which was conducted by individual ESOL teachers depending upon the time they had available. Beginning ESOL students were excluded due to a decision to eliminate subjects who lacked the basic English proficiency assumed by this researcher to be a prerequisite for reading instruction.

The socio-economic levels of the ESOL students were estimated by the teachers to range from lower class to middle class. In the first school 100% of the students participated in the Federal lunch program: 93% of the students were eligible for free lunch and 7% for reduced lunch. In the second school, 81% participated in the free lunch program while 19% did not. Observations and student interview comments led the investigator to believe that the majority of the students in the first school belonged to an extremely low-income bracket whereas students in the other school appeared to have a more mobile social status.

The subjects included the language and cultural heterogeneity typically encountered in the Washington Metropolitan Area schools at the time this study was undertaken. Parents of participating students were asked to complete a personal data form, which provided a profile of

Ss as shown in Table 2.

Table 2
Background Information on Ss
Gathered on the Personal Data Form

Variables	Training	Control
Language Background:	27	23
Spanish	19	15
Indonesian	7	9
Korean	7	3
French	6	6
Vietnamese	4	4
Indian	4	5
African varieties	3	2
Chinese	3	1
Portuguese	1	1
Turkish	1	0
Arabic	0	1
Farsi		
Language Proficiency:	43	34
Intermediate	39	36
Advanced		
Sex:	42	36
Male	40	34
Female		
Age:*	17.064	16.757
Mean	14.09-22.02	13.04-21.11
Range		
Student Status:	7	6
Foreign Student	49	43
Immigrant	22	20
Refugee	3	0
U.S. citizen	1	1
Naturalized citizen		

Length of Residence in
the United States:

	3	5
Less than 6 months	10	2
6 months to 1 year	27	19
More than 1 year	41	44
More than 2 years	1	0
More than 5 years		

Study of English in
the United States:

	16	7
Less than 1 year	35	30
More than 1 year	31	33
More than 2 years		

Study of English Abroad:

	25	25
None	27	28
Less than 1 year	11	7
More than 1 year	19	10
More than 2 years		

Enrollment in the School:

	13	17
Less than 6 months	28	18
6 months to 1 year	31	28
More than 1 year	10	7
More than 2 years		

Education Abroad:

	16	9
Less than 2 years	8	5
More than 2 years	2	2
More than 3 years	25	17
More than 5 years	11	19
More than 7 years	20	23
More than 9 years		

N=152

*Values for the variable age are reported in years and months, where the digits to the right of the decimal point are the months.

Fifty-two percent of the subjects in the training condition had passed the Maryland Functional Reading Test

(MFRT). The MFRT is a criterion-referenced test containing approximately 60 items and 438 points. It must be noted that the number of items and passing criteria vary each year. In 1983-84, the passing criterion consisted of 60% correct responses, that is, about 37 correct responses and 340 points. Subjects receiving treatment had a mean total percentile rank of 52.9 (S.D.=24.9, range=10% to 97%) on the reading comprehension subtest of the Secondary Level English Proficiency Test (SLEP). Forty-nine percent of the subjects in the control condition had passed the MFRT. Control group subjects had a mean total percentile rank of 53.1 (S.D.=20.9, range=10% to 92%) on the SLEP.

Oral proficiency ratings were obtained for the 79 subjects attending the second school. Subjects in the training condition were classified as advanced (3), intermediate (29), and novice (10) according to the oral proficiency score developed by the American Council on the Teaching of Foreign Languages (ACTFL) and the Educational Testing Service (ETS). Subjects in the control condition were classified as advanced (1), intermediate (23), and novice (13) on the ACTFL/ETS oral proficiency scale.

Experimental Materials

Materials consisted of six reading passages selected from the World Book Encyclopedia (1983), the Britannica Junior Encyclopedia (1981), and the New Standard Encyclopedia (1982), WH-comprehension questions (e.g., why, when)

developed for each passage by the investigator, and a modified cloze exercise (maze) on passage number six was also developed by the researcher. In making the selection of the training and testing texts, the investigator was guided by three ESOL teachers' estimation of high school ESOL students' prior knowledge of the selected topics. The assumption was made by these teachers and the researcher that students would have a wide range of prior knowledge of the training topics but only minimal background knowledge of the testing topic. Passages were selected by using the following criteria: (1) the topics; (2) the language content and form; and (3) the readability levels.

The Topics

The selection of topics for this study was an outgrowth of the investigator's theoretical and methodological concerns combined with her recognition of the role that American historical and symbolic schemata may assume for ESOL students during their acculturation in the American society. The researcher intended the reading event (a part) to be interrelated to and interdependent on the socio-psycholinguistic context (the whole) in which it was occurring. Reading of these topics was thus viewed as an aid to the students' "...maturity and acculturation" (Le Fevre, 1968, p.293) that would facilitate their "meaningful learning" (Ausubel, 1968, p.107). The selected material was supportive of the Maryland Functional Reading Test and

reinforced the 1982 ESOL civics curriculum guide currently in use in the participating county.

The following considerations were made: use of potentially relevant material (Ausubel, 1968); adherence to ecological validity (Baumann, 1982); minimizing changes to regularly scheduled instruction; and organizing facts to improve comprehension and learning (Bruner, 1965).

Language Content and Form

Care was taken to ensure that the six selected passages had approximately the same structure: expository texts from three commonly used encyclopedias were selected in concert with Ausubel's (1963) orientation. His suggestion was that only expository material be used in cognitive studies because of the lack of attitudinal influences, inherent in other types of writing, which might distort perceptions. Goelman (1980) reiterated that expository texts "provide the reader with a clear, explicit and precise presentation of ideas or facts" (p.55). In the passages used in this study, explicit topic sentences and concept load are similar in all six passages. The length of the passages ranges from 285 to 300 words.

Not all aspects of the published passages were suitable for this study. The investigator deemed it necessary to modify the content of three passages by combining the information contained in two encyclopedias and adjusting text length by deleting in three passages and augmenting the other

three. A minimal number of vocabulary words was slightly modified in four passages to reduce potential ambiguities; however, the material was kept as similar to the published text as was possible. In making a decision about the appropriateness of the language contained in the passages, the investigator reviewed various texts. Those which were written in language adequate for younger children, i.e., simple words and sentences which require relatively little background information, did not seem satisfactory to the researcher. The latter shared Stein and Glenn's (1978) concern with the use of smaller units:

While knowledge concerning the cognitive structures which regulate single word and sentence processing are critical for a more complete understanding of story comprehension, this type of information is not sufficient to describe the results found in studying stories. The cognitive structures or schemata may be quite independent of the structures used during single sentences processing. (p.33)

Five ESOL teachers rated the selected material as follows:

1. approximately similar in ease of comprehensibility;
 2. appropriate in language content and form for the grade level of the subjects;
 3. potentially meaningful to the students' experience;
- and
4. relevant to the ESOL curriculum in use in the

participating county at the time the study was undertaken.

Readability Levels

The investigator sought to identify the approximate readability of the passages using the following criteria:

1. Five ESOL teachers judged the texts considerate to the sample of this study.
2. The publishers of the unmodified texts stated that the readability levels of each encyclopedia was: appropriate for elementary school students (Encyclopedia Britannica, Inc., 1981); geared to the proper age groups according to vocabulary and conceptual content (World Book, Inc., 1983); and comprehensibility of material to children as young as nine (Standard Educational Corporation, 1982).
3. The readability level, determined through the Fry Readability Formula (1968), averaged 9.8. This was 1.0 to 1.5 grade level below the grade levels of the subjects. The quantity of polysyllabic words that were repeated in the passage and numbers probably raised the computed readability level.
4. The appropriateness of the texts was further examined by piloting the material with ESOL students similar to the sample of the study.

Multiple-Choice Questions

Ten WH-comprehension questions followed each passage.

Questions were all multiple-choice format with four alternatives provided for each item. Multiple-choice items were constructed because of their high reliability and objective scoring (Gronlund, 1968). This format was considered by the investigator to be the most appropriate for the purposes of this study. Firstly, it would allow the examinee to undergo a process of selection and elimination of cues similar to a reader's reduction of uncertainty (Smith, 1973). Secondly, it should provide ESOL students practice in test-taking strategies useful for most commonly used standardized reading tests, e.g., Maryland Functional Reading Test.

After designing the multiple-choice items, the investigator sought the assistance of two graduate students, one in reading and one in American history, and a professor in foreign language education, to assess the clarity and appropriateness of the questions. Suggestions made by these assistants prompted the researcher to eliminate one question, revise six of the answers, and slightly modify some of the wording. A set of six passages and corresponding questions was submitted to five ESOL teachers. These independent raters evaluated the questions for appropriateness of text for the subjects and identified text-implicit, text-explicit, script-implicit, and passage-independent questions (Pearson & Johnston, 1982). Following Johnston's (1983) suggestion, passage-independent questions were deliberately included to

enable the researcher to "explicitly tap the requisite background knowledge" (p.45). All five raters agreed on the appropriateness of text for subjects and identification of text-explicit and passage-independent questions. An agreement of .92 was reached on the text-implicit and script-implicit questions. The analysis of the reasons given by the raters for their responses indicated that the .08 difference was due to each rater's interpretation of Pearson and Johnston's (1982) definitions rather than an actual disagreement among raters. The investigator proceeded to prepare the materials. Passages were typed double-spaced. No identification of source or grade level appeared on the text. Questions were typed in the same format and followed each passage on a separate page. The passages and questions may be found in Appendix F. Training scripts were developed for this study (see Appendices D and E).

Modified Cloze Procedure (Maze)

In addition to the multiple-choice questions, the investigator devised a 34-item modified cloze procedure as another measure of comprehension. Several researchers have recommended the maze procedure for its ease of administration and objective scoring (Guthrie, Seifert, Burnham, & Caplan, 1974). The investigator selected this format because it capitalizes on recognition skills, which are necessary for reading, rather than the productive skills required in the cloze procedure. However, the maze can yield the same type

of information as the cloze procedure about the language clues used by the reader to comprehend a text.

In constructing the maze questions, the investigator left the first and last sentence intact and replaced every seventh word with a maze multiple-choice item. The items included the following options: (1) the correct word, (2) a syntactically incorrect word, (3) a syntactically correct but semantically incorrect word, and (4) a semantically correct but syntactically incorrect word (see Appendix G).

Pilot Studies

Two pilot studies were conducted to determine the optimal method and content to use in the actual study. The investigator's intent was primarily to obtain a global estimate of the subjects' interest, prior knowledge about the topics, and language proficiency. The specific objectives were to refine the language content and form and verify the feasibility of the procedures.

First Pilot. The six passages from The World Book Encyclopedia, the Britannica Junior Encyclopedia, and the New Standard Encyclopedia were first modified slightly as discussed earlier in the section on passage language content and form. Secondly, they were piloted with 15 subjects who had approximately the same range of language proficiency as the sample of the study. The subjects were about 10-12 years older than the sample and were enrolled in an Adult ESOL Program rather than a high school. No control group could be

included at this time. The reality of the situation did not permit a closer approximation to the research conditions of the actual experiment.

Prior to reading the passage, subjects were instructed by their regular ESOL teacher to respond to questions using a 1-5 (low-high) Likert-type scale. The questions were the following:

How much do you know about this topic?

How well do you know this topic or information?

How interested are you in this topic?

Upon completion of this metacognitive task--i.e., assessment of their knowledge prior to teaching and prediction of their probable general success after reading, subjects were asked to read the passage and take a multiple choice test. A debriefing questionnaire was attached to the test to further probe the students' comprehension process. Questions were raised about the language level of the passage, specifically the vocabulary and grammar used, and the passage length.

Additional comments and suggestions were encouraged. The training script was piloted for clarity of language at this time. All pilot results were examined by the investigator. Low background knowledge of the topic was indicated by the subjects. Relatively more knowledge was indicated by the lower oral English-proficient students. Generally, the subjects were interested but bored by the amount of details, especially the numbers. The percentage

of correct responses on the multiple-choice test ranged from 33 to 88. The initial pilot study indicated the feasibility of the study and suggested further refinement of the questions.

Second Pilot. The training method was subjected to a four-day procedural pilot with 14 high school ESOL students who were similar to the population of the actual study. The percentage of correct responses on the multiple-choice test ranged from 55 to 82, the mean total was 51.2 (S.D.=7.88). Some multiple-choice questions and responses were further refined based on student suggestions. The second pilot study confirmed the feasibility of the study and provided data to support the use of the topics. The procedures appeared clear and the students demonstrated a positive response to the training method.

Experimental Method

This section presents a detailed description of the sequence of steps employed in the study. It includes the preliminary, training, and control group procedures.

Preliminary Procedures

Prior to beginning the experiment, the investigator submitted a copy of the proposal for this study to a public school system's Evaluation and Research Office. Upon receiving approval, she proceeded to gain the approval of the ESOL Program Supervisor and Principals of two high schools representative of this area. The researcher met with the ESOL teacher in each school to discuss the research proposal

and to make necessary arrangements. Parental consent and demographic information was subsequently secured for each participant.

The experimenter met with the two ESOL teachers who participated in the instruction individually for three separate sessions to permit clarification and explanation of instructional principles and procedures. At this time these teachers were given a description of the study, a schedule of times and dates for the investigation, scripts, and materials to be used in the study.

Training Procedures

The investigator devised a training methodology which would facilitate students' comprehension and assist them in "selecting schemata and variable bindings that will account for the material to be comprehended, and the verifying that those schemata do indeed account for it" (Rumelhart & Ortony, 1977, p.111). This methodological decision assumed that training would allow the progressive refinement of a reader's text scenario or model embodied in Tierney and Pearson's (1981) definition of reading comprehension. The training procedures the investigator developed for this study presumably supported these schema theorists' notion that "comprehension involves the activation, focusing, maintaining, and refining of ideas toward developing interpretations (models) that are plausible, interconnected and complete" (p.6).

In consideration of the varied background of ESOL students, training sessions were given at two different sites to maximize generalizability of findings. Subjects in each training group met with this investigator for half of the training sessions, and one of the ESOL teachers for the other half of the sessions. The alternating instructor roles design is shown in Table 3.

Table 3
Alternating Instructor Roles Design

	Period	Investigator	ESOL Teacher
Day 1	X Y	T C	C T
Day 2	X Y	C T	T C
Day 3	X Y	T C	C T
Day 4	X Y	C T	T C
Day 5	X Y	T C	C T
Day 6	X Y	C T	T C

Period

X = 3 in school No. 1
2 in school No. 2

Y = 4 in school No. 1
6 in school No. 2

T = Training group

C = Control group

Training occurred in the transitional English classroom in one school, and in the ESOL classroom in the other

school. Training scripts were used to ensure uniformity of instruction (See Appendix D). Prior to the first intervention session the subjects were given numbers and then randomly assigned to either treatment or non-treatment condition. The ESOL/English transitional teachers were given lists of the subjects for each group.

The entire intervention was conducted for five fifty-minute class periods. Two alternate training sessions followed a predominantly inductive orientation with strict adherence to the Pre Reading Plan (PReP) and webbing procedures. The entire training classes developed and expanded the web or graphic organizer. Practice sessions followed the first and third training days. These practice sessions were deductive in nature. The steps that were used in the PReP and webbing exercises were explained and the class practiced the PReP and did webbing in small groups of two or three students. The investigator or the ESOL teacher assisted the students and gave them feedback. The students read the passage and then responded to Wh- multiple-choice comprehension questions. A brief discussion was held on how students selected their responses. The final training session (Day 5) provided the subjects an opportunity to review the rules and steps of the PReP and webbing exercises and practice as a whole class. With the exception of a transfer check, all the other guidelines suggested in the literature (Pearson, 1982; Brown, Campione & Day, 1981;

Meichenbaum & Asarnow, 1979; Kuhn, 1974) were incorporated in the training procedures. For a discussion of the guidelines, see the training studies section of the review of the literature (Chapter II). The training module is presented graphically in Table 4.

Table 4

Training Module

Day	Day	Day	Day	Day	Day
1	2	3	4	5	
T	EPF	T	EPF	T	Testing

T = Training
 E = Explanation of PReP and webbing steps
 P = Practice in small groups
 F = Feedback

Pre Reading Plan. The PReP is a 3-step assessment/instructional procedure (see Appendix B) which emphasizes pre-reading awareness, elaboration, and anticipation of language and concepts in the text (Langer, 1981). In a study of 36 high school students, Langer (1980) found a .72 correlation between levels of prior knowledge and content word recall across two passages, one on schizophrenia and the other on parakeets. The value of the paradigm lies in its application "...to classroom practice as well as to educational theory and research" (Langer, 1984, p.28).

Webbing. Sometimes called think links, this technique can be traced to the staff development efforts of the Howard

County/University of Maryland Teacher Education Centers. It can be defined as a linking medium between someone's prior knowledge and the orderly expression of that knowledge. This "magic motivator" enables students to organize their thoughts. It is currently being field tested in Howard County, but much empirical data is needed (e.g., F. Lyman, personal communication, January 1984).

Control Group Procedures

Subjects in the non-treatment group were instructed in reading by the investigator for half of the sessions and the ESOL teacher for the other half of the sessions (see Table 3). Each session lasted 50 minutes. A script was provided to insure clarity of directions and uniformity in instruction (see Appendix E).

Reading instruction for the control group was based on the SQ3R (Survey--Question--Read--Recite--Review), a method developed by Francis Robinson (1961) and recommended in reading texts (Cheek & Cheek, 1983; Stoodt, 1981; Zintz, 1980) as a useful and effective study skill method. In fact, Cheek and Cheek (1983) described SQ3R as "the oldest and most commonly used study strategy" (p.177). Following their recommendations, the investigator and the ESOL teacher devoted five class periods to explain the procedure, to distribute copies of the method for student reference, to demonstrate the method, and to allow practice with SQ3R.

The passages and comprehension questions were the same

as the ones used with the treatment group. By the conclusion of the first session, the students were able to read the passage, follow the steps of the SQ3R method, and complete the multiple-choice items. A brief discussion of how students selected their responses was held to assist them with test-taking skills. A brief review began each session, students worked independently, and feedback was provided either independently or as a group. The instructional methods for the treatment and non-treatment conditions are summarized in Table 5.

Table 5
Comparison of Instructional Methods

Experimental Group Treatment Condition		Control Group Non-Treatment Condition
Whole Group (T)	Small Groups (EPF)	Whole Group
		<u>SQ3R</u>
1. PReP	1. Explanation of PReP & webbing steps	1. Survey
2. Topic Discussion	2. Topic Discussion	2. Questions
3. Webbing	3. Practice of PReP & webbing; feedback	3. Read
4. Reading	4. Reading	4. Recite/Review
5. Multiple- Choice (MC) Task	5. Multiple- Choice (MC) Task	5. Multiple- Choice (MC) Task
6. MC dis- cussion	6. MC dis- cussion	6. MC dis- cussion

Data Collection

The day following the last training session, all subjects (N=152) were tested using expository passage number six (see Appendix G). Approximately half of the subjects were tested by the investigator and the other half by the ESOL teacher. Ecological validity was considered by: (1) having subjects read rather than listen to texts; (2) using texts with appropriate readability; and (3) using texts selected from existing curricular materials and texts judged appropriate by teachers (Baumann, 1982, p.173). Subjects were tested by treatment group.

Prior to data collection the investigator prepared a testing packet containing three sets of materials to be completed by students in three steps. First, students received two sheets, which they completed sequentially. The first of the two sheets (the prediction task sheet) asked each student to make predictions on a 5-point scale (all, most, some, a little, or none of it) on the following three issues:

1. How much did s/he know about this topic (i.e., Mount Rushmore National Memorial);
2. How well did s/he know the topic; and
3. How interested was s/he in the topic.

The second sheet (the PReP sheet) in the first set directed students to write down everything which came to mind as they thought about the picture of Mount Rushmore National Memorial, the topic of the passage they were about to read. Ideas listed on the second sheet were subsequently judged by raters to assess students' prior knowledge about this topic, following Langer (1980) and Hare (1982).

Upon completion of the first two sheets, students exchanged these sheets for the second set of materials. Students were requested to read the passage silently, to complete the confidence sheet (see Appendix G) and the multiple-choice test. Since the investigation examined reading comprehension, students were permitted to keep their passages while taking the multiple-choice test. Prior to taking the test, students were also given a blank sheet of paper. Training subjects were asked to do a web while the control group was requested to use the SQ3R method.

Finally, students exchanged these papers for the third set which contained the passage with maze questions.

Post-Testing Procedures

In order to provide greater specificity and accuracy, the investigator obtained measures of the subjects' oral English proficiency in one school and the reading comprehension level in both schools. The researcher had originally proposed to undertake these steps prior to training. Adjustments had to be made because of scheduling

problems.

Oral English Proficiency. To obtain the measure of oral language proficiency, the investigator met with students in school number two and interviewed them individually for 15-20 minutes. All the oral interviews followed the four phases suggested by ACTFL: warm-up, level check, probes, and wind-up. Subjects of interest to the interviewees were identified in the warm-up phase; it was in these topics that the subjects were pushed to or beyond their level of performance, at which point the interview entered its wind-up phase. All interviews were recorded. The audiotaped conversations were subsequently rated by two independent raters using the ACTFL/ETS oral proficiency scale. The rating scale is based on techniques endorsed by the Interagency Language Roundtable (ILR). Since 1981, grants from the Department of Education and the National Endowment for the Humanities have enabled the American Council on the Teaching of Foreign Languages (ACTFL) and Educational Testing Service (ETS) to modify the Foreign Service Institute (FSI) scale by making it more applicable to academic settings (ACTFL Provisional Guidelines, 1982).

Reading Comprehension Level. The subjects' reading comprehension level was estimated using the reading subtest of a standardized test, the Secondary Level English Proficiency (SLEP) test. The test was administered by the subjects' ESOL or English transitional teachers during a

regularly scheduled class period. Since this test had a multiple-choice format and the time required was reasonable (45 minutes), taking the SLEP test provided helpful practice for these students. ESOL students tend to lack the native English pupils' test-taking expertise. The SLEP is a highly reliable test that is widely used in the United States. Stanfield (1982) reported a .96 reliability on the total test and .93 on the reading subtest. It must be noted that the oral section of this test was already used in the participating county with summer school ESOL students. The researcher assumed that making these test scores available to the county would provide the ESOL Program Supervisor with information useful for future instructional planning and evaluation.

Scoring Procedures

Main Question. The dependent measures for the main question were obtained by scoring the 10 multiple-choice items and 34 maze questions. The investigator corrected the two tests using an answer key. Ten points were assigned for each correct multiple-choice item and one point for each correct maze completion. The percentage of correct responses on each of the instruments was computed and used in the analyses.

Related Question No. 1. Two independent raters judged each subject's free associations about the picture of Mount Rushmore National Memorial. The raters, two graduate

students in the TESOL program, had been trained for forty-minutes by the investigator using classifications developed by Langer (1980). A rating of "much" knowledge required use of superordinate concepts, definitions, analogies, or concept linking. A rating of "some" required use of examples, attributes, or defining characteristics. A rating of "little" only required use of associations, morphemes, sound-alikes, or firsthand experiences. Ratings received scores of 3, 2, and 1, respectively (see Appendix B). Each score represented the qualitative domain-specific prior knowledge estimate for each student that was used in the analysis for the first related question. Interrater agreement was .80. Cases of disagreement were easily resolved and 100% agreement was reached by the raters.

Related Question No. 2. The level of interest, quantity and quality of the subjects' metacognitive knowledge before (prediction rating) and after reading (confidence rating) were obtained using two 3-item surveys. The student self-appraisal surveys were scored by the investigator since the possibility of unreliable scoring was reduced by the Likert-like scale (1-5) format of the questions.

Oral Proficiency Data. Two other graduate students in the TESOL program independently rated the audiotaped interviews of the 79 students enrolled in the second school. The raters had been trained by the investigator for two one-hour sessions on the use of the ACTFL/ETS Oral

Proficiency Scale (see Appendix C). Interrater agreement was .71. The two raters discussed the cases of disagreement and reached 100% agreement.

Reading Comprehension Standardized Score. The investigator scored the SLEP scores using the answer key supplied by ETS. The raw scores were computed into percentile ranks following the conversion table in the SLEP Manual (1981, pp.20-22).

Research Hypotheses

The hypotheses for the study were:

1. There will be differences between the training and control group favoring the training group among intermediate high school ESOL students' reading comprehension on a 10-question multiple-choice (MCCQ) performance measure.
2. There will be differences between the training and control group favoring the training group among intermediate high school ESOL students' reading comprehension on a 34-item maze performance measure.
3. There will be differences between the training and control groups favoring the training group among advanced high ESOL students' reading comprehension on a 10-question multiple-choice (MCCQ) performance measure.
4. There will be differences between the training and control groups favoring the training group among advanced high school ESOL students' reading

comprehension on a 34-item maze performance measure.

5. There will be a positive relationship between ESOL students' reading comprehension (i.e., MCCQ and maze scores) and the quality of their domain-specific prior knowledge, as measured by performance on the PReP.
6. There will be a positive relationship between ESOL students' metacognitive assessment of the quantity of work required by the reading task, the quality of that task, the level of interest and their reading comprehension (MCCQ and maze scores).

Data Analysis Method

Multivariate analyses of covariance were used to test the four major research hypotheses of this investigation. Because of the unequal cell sizes, multivariate tests for the main effects were conducted twice, varying the order of the factors. Three other variables (reading comprehension as measured on the SLEP; quantity of education in the U.S. and abroad; and variable age) assumed to moderate the treatment were therefore entered into the analysis as covariates. Initial tests for homogeneity of covariance were used to determine the appropriateness of multivariate analyses (MANCOVA).

For the first related question, a Pearson Product Moment Correlation was performed to determine the extent of the relationship between the levels of prior knowledge and the levels of reading comprehension as measured on the multiple-choice test and the maze exercise.

For the second related question, the difference was computed between the index of predicted general success before reading (prediction rating) and the awareness of one's success (confidence rating) after reading. A Pearson Product Moment Correlation was subsequently carried out using the difference between the prediction and confidence ratings and each of the criterion measures. The correlation coefficient indicated the extent of the relationship between the reading comprehension performance scores and the aspects of metacognitive knowledge derived from the analysis of the prediction and confidence ratings.

The interviews were analyzed by the investigator in order to identify general patterns of sociopsycholinguistic factors that might affect the subjects' reading comprehension.

Chapter Summary

This chapter has described: the research design; the target population; the experimental materials and method; the data collection, post-testing and scoring procedures; the research hypotheses, and the method of data analysis.

CHAPTER IV

FINDINGS

This chapter presents the results from an experimental study in which schemata (organized prior knowledge) was the treatment variable during a five-day training period for 152 randomly assigned high school ESOL students in a county just outside Washington, D.C. The results of the statistical analyses are presented according to the stated experimental hypotheses, and appropriate tables follow to illustrate the results. Discussion of these findings is presented in Chapter V.

Purpose of the Study

The primary purpose of this study was to investigate the effects of inducement of schemata, i.e., domain-specific prior knowledge training, upon the reading comprehension of 152 intermediate and advanced high school ESOL students. The secondary purpose of this study was to examine the relationship between: (1) ESOL students' reading comprehension and the quality of their domain-specific prior knowledge, and (2) ESOL students' reading comprehension and their metacognitive knowledge.

Major Research Hypotheses

In addressing the main question, the following four hypotheses were tested in this study:

Hypothesis 1: There will be differences between the training

and control groups favoring the training group among intermediate high school ESOL students' reading comprehension on a 10-question multiple-choice (MCCQ) performance measure.

Hypothesis 2: There will be differences between the training and control groups favoring the training group among intermediate high school ESOL students' reading comprehension on a 34-item maze performance measure.

Hypothesis 3: There will be differences between the training and control groups favoring the training group among advanced high school ESOL students' reading comprehension on a 10-question multiple-choice (MCCQ) performance measure.

Hypothesis 4: There will be differences between the training and control groups favoring the training group among advanced high school ESOL students' reading comprehension on a 34-item maze performance measure.

Descriptive Analysis

Means and standard deviations are provided for each of the covariates (reading comprehension score on the SLEP; education; age) and each of the dependent variables (multiple-choice items and maze responses) in the study (see Tables 6 and 7, respectively).

Table 6

Means and Standard Deviations for
Training and Control Groups on the Covariates

Language Proficiency	Training				Control				Total Mean
	INT		ADV		INT		ADV		
	M	SD	M	SD	M	SD	M	SD	
SLEP	46.558	(24.789)	62.552	(22.594)	50.061	(21.919)	56.417	(19.091)	53.745 (22.982)
Education Abroad.	8.151	(2.248)	7.346	(3.095)	7.601	(2.915)	6.875	(2.963)	7.520 (2.757)
USA	1.826	(.858)	2.821	(1.330)	2.074	(1.001)	2.778	(.866)	2.362 (1.113)
Age	16.894	(1.629)	17.251	(2.011)	16.411	(1.594)	16.411	(1.591)	16.922 (1.752)

NOTE. Standard deviations appear in parentheses.

Table 7
Sample Means and Standard Deviations for
Training and Control Groups on the Criterion Variables

Language Proficiency	Training				Control				Total Mean
	INT		ADV		INT		ADV		
	M	SD	M	SD	M	SD	M	SD	
Reading Comprehension Multiple-choice	53.023	(12.637)	57.436	(14.818)	51.765	(15.661)	55.00	(13.416)	54.342 (14.127)
Maze	50.558	(15.924)	62.923	(15.009)	53.759	(16.654)	56.722	(16.459)	55.605 (16.414)

NOTE. Standard deviations appear in parentheses.

Multivariate Analyses

Prior to the analyses of covariance procedures, preliminary analyses were performed to test the assumptions of the MANCOVA. The test of homogeneity of covariance (SLEP score, education, and age) was found to be nonsignificant. The test of homogeneity of regression was also found nonsignificant (see Table 8).

Table 8

Preliminary Tests of Homogeneity of Regression
of All Covariates with Both Criterion Variables

(Wilks Lambda Criteria)				
	<u>F</u>	df	df (error)	<u>p</u> <
Homogeneity of Regression	1.165	24.00	258.00	.275

Since the analysis of covariate assumption of homogeneity of regression was not statistically significant, the MANCOVA assumptions were met and the groups were considered homogeneous.

Multivariate analyses for the interaction of criterion variables (language proficiency and treatment conditions) were conducted. Results were as follows:

Table 9
Interaction Effects by
Blocking and Independent Variables

Variables	(Wilks Lambda Criteria)			
	<u>F</u>	df	df (error)	<u>p</u> <
Language Proficiency By Treatment Condition	.694	2.00	141.00	.501

As shown in Table 9, the MANCOVA results were not statistically significant for interaction. This meant that the main effects for the treatment condition and the language proficiency could be interpreted directly.

Subsequent analyses of the main effects were performed for both variables (See Table 10).

Table 10
Main Effects for Language Proficiency
and Treatment Condition

Variables	(Wilks Lambda Criteria)			
	<u>F</u>	df	df (error)	<u>p</u> <
Language Proficiency	1.747	2.00	141.00	.173
Treatment Condition	.056	2.00	141.00	.946

Results indicated that the training was not statistically significant at either levels of proficiency.

Minor Research Hypotheses

Two other hypotheses were advanced in this study.

Hypothesis 5: There will be a positive relationship between ESOL students' reading comprehension (i.e., MCCQ and maze scores) and the quality of their domain-specific prior knowledge, as measured by performance on the PReP ratings.

Hypothesis 6: There will be a positive relationship between ESOL students' metacognitive assessment of the quantity of work required by the reading task, the quality of that task, the level of interest and reading comprehension on the MCCQ and maze performance measures.

Descriptive Analysis

Means and standard deviations of the prior knowledge variable, addressed in hypothesis 5, are reported in Table 11.

Table 11

Sample Means and Standard Deviations for Training
and Control Groups on the Prior Knowledge Variable

Prior Knowledge Variable	Training		Control	
	M	SD	M	SD
PReP				
Question No.1	1.549	.548	1.500	.608
Question No.3	1.305	.489	1.257	.472
Total	1.427	.370	1.379	.429

For the means and standard deviations of the metacognitive knowledge variable addressed in hypothesis 6, see Table 12.

Table 12

Means and Standard Deviations for Training and
Control Groups on the Metacognitive Knowledge Variable

Metacognitive Knowledge Variable	Training		Control	
	M	SD	M	SD
Prediction Rating				
Quantity	1.561	.668	1.957	1.055
Quality	1.585	.860	1.900	1.194
Interest	2.841	1.094	2.857	1.081
Confidence Rating				
Quantity	3.561	.944	3.543	1.099
Quality	3.244	1.072	3.329	1.224
Interest	3.561	1.020	3.429	1.314

Statistical Analyses

As shown in Table 13, Pearson Product Moment Correlation coefficients were computed in order to determine the extent of the relationship between the levels of prior knowledge and the reading comprehension on the multiple choice and maze performance measures.

Table 13
Product Moment Correlations Between
Levels of Prior Knowledge and Reading Comprehension

Criterion Variables	PReP	
	<u>r</u>	<u>p</u> <
Reading Comprehension		
Multiple-choice	.0742	.182
Maze	.1652	.021

A positive and significant relationship was found between levels of prior knowledge and reading comprehension on the 34-item maze performance measure.

The students' metacognitive knowledge index was obtained by taking the difference between the prediction (before reading) and confidence (after reading) estimates. These ratings comprised three components: (1) predicted quantity of reading comprehension; (2) predicted quality of reading comprehension; and (3) predicted level of interest. A Pearson Product Moment Correlation was performed between the metacognitive knowledge ratings for each component and the reading comprehension on the multiple-choice and maze performance measures (see Table 14).

Table 14
Product Moment Correlations Between Metacognitive
Knowledge Index and Reading Comprehension

Criterion Variables	<u>Metacognitive Index</u>					
	<u>Quantity</u>		<u>Quality</u>		<u>Interest</u>	
	<u>r</u>	<u>p</u>	<u>r</u>	<u>p</u>	<u>r</u>	<u>p</u>
Reading Comprehension						
Multiple-choice	.246	.001	.285	.000*	-.057	.243
Maze	.114	.082	.285	.000*	.070	.195

A positive and significant relationship was found between students' metacognitive assessment of the quantity of reading comprehension they would obtain and the reading comprehension multiple-choice performance measure.

A positive and significant relationship was also found between students' metacognitive assessment of the quality of reading comprehension they would obtain and both dependent variables (reading comprehension measures).

The relationship between the reading comprehension performance measures and students' metacognitive assessment of their level of interest was not statistically significant.

Additional Analyses

The oral interviews of the subjects in the second school (N=79) were rated by two independent raters using the ACTFL/ETS oral proficiency scale. A qualitative analysis was performed

the investigator.

Oral English Proficiency

A group comparison was made between the oral English proficiency rating of the 79 subjects and the general English language estimates obtained according to the placement criteria used by the participating county's ESOL office. For this information, see Table 15.

Table 15

Group Comparison Between Subjects'
General English Language Proficiency Levels
and Oral English Proficiency Ratings

Condition	English Language Proficiency General		Oral		
	Int	Adv	Novice	Int	Adv
Training	25	17	10	29	3
Control	22	15	13	23	1

Qualitative Analysis

An analysis of the 79 interviews lasting 15-20 minutes each was performed in the two-week post-testing sessions. Topics of interest to the interviewees that were discussed willingly by them included: home-related and school-related issues, advice and information about future career goals, cultural values, adjustment to the United States and dealing with Americans. General patterns of sociopsycholinguistic factors identified

through the interviews are discussed in Chapter V.

Chapter Summary

Descriptive statistics including means and standard deviations have been reported. Multivariate analyses of covariance using the Wilks-Lambda statistics were conducted to investigate the effects of induced schemata on the reading comprehension of 152 intermediate and advanced high school ESOL students.

Pearson Product Moment Correlations were performed between the ESOL students' comprehension, as measured by their performance on 10 multiple-choice questions and 34 maze items, and: (1) their PReP responses, and (2) their metacognitive assessment of quality, quantity of reading comprehension, and level of interest.

A qualitative analysis of the audiotaped interviews was conducted. Results relating to each hypothesis were reported. These findings are discussed in Chapter V.

CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

This section includes a summary of the study, conclusions, limitations for interpreting results of the study, discussion of the hypotheses, and implications for theory, research, and instructional practice.

Summary

Purpose

This study was an effort to determine whether high school ESOL students who had intermediate or advanced English-proficiency could be trained to organize and use their prior knowledge in order to facilitate their comprehension when reading. Additionally, the researcher was interested in the relationship between the subjects' reading comprehension and level of prior knowledge, as well as reading comprehension and metacognitive knowledge.

Subjects

Subjects in this study were 166 students who were attending two public high schools in a Maryland suburban area. The group was heterogeneous in terms of language and cultural background. To be eligible for the study, subjects had to: (1) meet the participating county's criteria for intermediate or advanced (transitional) English proficiency; (2) return parent permission slips for participation in the study, and (3) attend all six sessions of the study. One hundred sixty-six subjects were selected; 83 subjects were

randomly assigned to a training condition, the other 83 to a control condition. Because of absenteeism and missing parental consent letters, 14 subjects were excluded from the posttest session ($N=152$). Participants in the study were 78 males and 74 females.

Method

Subjects in the training group were instructed with the PReP procedure and the webbing technique using a series of (approximately) 300-word expository passages. The PReP is an assessment/instructional procedure (see Appendix B) which is designed to activate, organize, and elaborate the students' domain-specific prior knowledge (Langer, 1980). Webbing is a graphic technique which aids students in organizing and integrating conceptual structures (schemata) and becoming cognizant of their relationships (Freeman & Reynolds, 1980). Subjects in the control group were taught using a study skills strategy, SQ3R, considered to be very effective by many reading experts (Robinson, 1961; Cheek & Cheek, 1983).

Training sessions were given at two different sites. Subjects in each group met with the investigator for half of the sessions and with an ESOL teacher for the other half. Training scripts were used to ensure uniformity of instruction. There were five training sessions, each lasting 50 minutes. During each session, students used the PReP and webbing (training) or the SQ3R (control), read the same social studies passage about an American monument or symbol,

took the same multiple-choice practice test, and discussed reasons for selecting their responses.

Feedback was provided to the groups every day. On alternating days, while students worked in small groups, they were given feedback almost on an individual basis. Students in both groups were encouraged to apply the newly learned technique to other subject areas and were given examples of their usefulness in studying for a test or planning for a writing assignment.

Testing

The day following the last training session, all subjects (N=152) were tested using the same expository passage and the same testing instruments, i.e., 10 multiple-choice questions and 34 maze items. Students in the training group did the webbing while the control group subjects used the SQ3R method. Prior to testing, all students utilized the PReP procedure and completed a prediction and confidence rating sheet. Subjects (N=79) in one school were interviewed.

Analyses

Multivariate analyses of covariance (MANCOVA) were used to determine the training-control group differences in their comprehension on a 10-question multiple-choice and a 34-item performance measures. The three covariates that were used in the MANCOVA were the standardized reading comprehension score obtained on the SLEP, the years of education, and the age.

Pearson Product Moment Correlations were computed to evaluate: (1) the extent of the relationship between the levels of prior knowledge and the comprehension performance on the multiple-choice and maze questions; and (2) the relationship between the metacognitive knowledge (i.e., prediction of quantity and quality of work, and level of interest) and the reading comprehension measures (MCCQ and maze scores).

Findings

The results of this study can be summarized as follows:

1. The intermediate English-proficient training group and the control group did not differ at the $p < .05$ level of significance in reading comprehension on the 10-question multiple-choice and 34-item performance measures.
2. The advanced English-proficient training group and control group did not differ at the $p < .05$ level of significance in comprehension on the 10-question multiple-choice and 34-item maze performance measures.
3. There was a positive and significant ($p < .021$) relationship between ESOL students' reading comprehension on the maze items and the quality of their domain-specific prior knowledge, as measured by performance on the PReP rating.
4. There was no significant relationship between ESOL

- students' reading comprehension on the multiple-choice test and the quality of their domain-specific prior knowledge, as measured on the PReP rating ($p < .182$)
5. There was a positive and significant relationship ($p < .001$) between ESOL students' reading comprehension on the multiple-choice test and the metacognitive assessment of the quantity of reading comprehension that they would obtain.
 6. There was no significant relationship between ESOL students' reading comprehension on the maze exercise and their predicted quantity of reading comprehension on the metacognitive measures ($p < .082$).
 7. There was a positive and significant relationship between ESOL students' reading comprehension on the multiple-choice questions and the students' predicted quality of reading comprehension or metacognitive knowledge ($p < .000$).
 8. There was a positive and significant relationship between ESOL students' reading comprehension on the maze task and their predicted quality of reading comprehension on the metacognitive measures ($p < .000$)
 9. There was no significant relationship between ESOL students' level of interest as measured on the prediction and confidence ratings, and reading comprehension performance on the multiple-choice

measure ($p < .243$).

10. There was no significant relationship between ESOL students' level of interest as measured on the prediction and confidence ratings, and reading comprehension performance on the maze measure ($p < .195$).

Conclusions

On the basis of the findings of this research study, it would seem justifiable to draw the following major conclusions:

1. Intermediate students in the training group ($X=53.023$) did not differ at the $p < .05$ level of significance from the control group with similar English proficiency ($X=51.765$) on the 10-question multiple-choice performance measure.
2. Intermediate students in the training group ($X=50.555$) did not differ at the $p < .05$ level of significance from the control group with similar English proficiency ($X=53.759$) on the 34-item maze performance measure.
3. Advanced students in the training group ($X=57.436$) did not differ at the $p < .05$ level of significance from the control group with similar proficiency ($X=55.00$) on the 10-question multiple-choice performance measure.
4. Advanced students in the training group ($X=62.923$) did not differ statistically at the .05 level from

- the control group with similar English proficiency ($X=56.722$) on the 34-item maze performance measure.
5. The interaction of the level of language proficiency with the treatment condition did not affect the comprehension measures significantly ($F=.694$, $df=2,141$, $p<.501$).
 6. Students generally performed better on the maze than the multiple-choice performance measures. Differences were not statistically significant.
 7. The qualitative rating of students prior knowledge significantly correlated ($p<.021$) with their reading comprehension performance on a 34-item maze exercise, but did not correlate significantly on the multiple-choice test.
 8. There was a positive relationship between the students' metacognitive assessment of the predicted quantity of comprehension and the reading comprehension performance on the multiple-choice measure ($r=.246$, $p<.001$) and an almost significant relationship on the maze measure ($r=.114$, $p<.082$).
 9. Subjects' metacognitive assessment of the predicted quality of comprehension correlated significantly at .000 level on both the multiple-choice and the maze performance measures.
 10. No significant correlation was found between subjects' metacognitive assessment of their level of

interest and their comprehension on either the multiple-choice ($p < .243$) or the maze ($p < .195$) measures.

Qualitative Analysis

Observations made by interviewees indicated a range of sociopsycholinguistic factors which may be influencing their education and, consequently, their reading performance. A comfortable interviewer-interviewee relationship was established and subjects willingly and candidly talked about themselves. Sometimes they shared information. Other times they requested information. Most of the time they demonstrated a desire to communicate. A range of topics of interest or concern to the interviewees were identified in the warm-up phase of the interviews. They included:

1. awareness of language, e.g., preoccupation with pronunciation, concern with being understood and understanding meaning;
2. bilingualism/biculturalism--what did this mean for them?
3. confidence about their ability to cope, yet inability to express themselves, especially their feelings;
4. satisfying their basic needs: working to get things they need;
5. helping their families; gratitude toward their parents; pressure to aid their siblings;

6. future career goals; inexperience about obtaining financial support for their educational goals;
 7. pride in themselves and their ability to work; self-sufficiency;
 8. ethnicity: maintenance or rejection of their native land;
 9. acculturation; adjustment to the United States and to Americans; conflicting values;
 10. friendship: lack and desire for friendship; alienation;
 11. difficulties in school; getting off easy; need for improvement; and
 12. interests, e.g., sports, fashion.
- The potential that these factors had on subjects' reading performance was tentatively proposed by the investigator. Further analysis was not deemed necessary since this was not a major thrust of this study.

Limitations

The discussion and implications of this study should be viewed with the following limitations in mind:

1. There was language, cultural, age, and educational variability among the subjects, although they were essentially low to middle-class ESOL students attending a public school system. Thus, the findings of this study are only generalizable to other similar students in a similar school system in

- a similar geographic location.
2. The participation and cooperation of subjects may have been affected by the drawing of prizes at the end of the study.
 3. The training period was somewhat short in duration, slightly over four hours total.
 4. The reliability of the multiple-choice and maze performance measures is open to question. The instruments were assumed to be reliable measures but were not used before. Increasing the number of questions might correspondingly increase the reliability.
 5. Multiple-choice tests may provide evidence of recognition of information but may not indicate the global comprehension of concepts and the integration of new information with existing information. Guessing may have potentially affected the findings.
 6. The measures used to assess prior knowledge (PReP) and metacognitive knowledge (prediction and confidence ratings) relied heavily on students' self-assessment or subjective data.
 7. Due to a malfunctioning tape recorder and poor-quality tapes, there is no audiotape of a few training sessions.
 8. Findings are restricted to expository passages and are not necessarily generalizable to narrative

tests.

9. Because of scheduling constraints, students in only one school could be interviewed. Greater insights might have been gained by conversing with all the students. In addition, all interviews were conducted by the same interviewer, which limits inference on how much variance in students' ratings might be caused by the interviewer and interviewee interaction.
10. The use of similar topics for all of the training sessions may have decreased the subjects' interest in the training technique.

Discussion

While the present study investigated the effects of induced schemata, the conclusions which were drawn are both limited and suggestive. Interpretations of findings must take into consideration the numerous limitations of this research effort. The population of this study provided an unusual challenge. It may have been overly optimistic to expect to separate and control the multiplicity of factors experienced by ESOL students when reading.

Within the limits of the study, the researcher attempted to investigate the effects of schemata inducement, i.e., domain-specific prior knowledge training upon the reading comprehension of 152 intermediate or advanced high school ESOL students. The investigator also sought to

examine the relationship between: (1) ESOL students' reading comprehension and the quality of their domain-specific prior knowledge, and (2) ESOL students' reading comprehension and their metacognitive knowledge.

Inducement of Schemata

Theorists and researchers (Rumelhart & Ortony, 1977) have discussed the role of prior knowledge in learning. Ausubel (1968) recognized the importance of using meaningful material to promote a reader's personal involvement with text. Anderson (1977) hypothesized that new information would become part of an individual's cognitive structure when the individual could relate it to prior knowledge. Understanding the integration of new information into existing knowledge has remained a major research question (Bransford, 1979).

The statistical analyses performed in this study do not confirm the hypotheses that inducement of schemata yields significant effects upon the subjects' comprehension. The descriptive data favor the training group, yet not enough to empirically support the causal role of schemata in comprehending a text.

A number of variables may have moderated subjects' performance during testing. These might include "...academic performance, scholastic motivation, health, and parental support for achievement, to name only a few" (Kirk, 1978, p.107). During the oral interviews, subjects revealed

concern about their ethnicity, acculturation, socioeconomic situations, future career goals, and rejection or maintenance of the native culture.

The time element should be taken into consideration. The training group was required to do the same number of activities as the control group. However, one of the activities, namely webbing, required more time and effort than the SQ3R. Theoretically, webbing was in concert with schema principles. However, in practicality, the SQ3R method may have given the control group the advantage of additional thinking time, thereby providing some relief from the pressure of the testing situation.

The decision to employ what may appear to be reliable instruments, i.e., multiple-choice and maze procedure, determined the type of performance criteria schema-theoretical framework used in the study. Increasing the number of questions might have correspondingly increased the reliability of the instruments. Additionally, the framework for this study embraces an interactive view of reading comprehension. Results based on discrete elements (e.g., multiple-choice questions) may be more indicative of bottom-up processing and, therefore, not reflect the goal established for the training--the total process, the Gestalt of reading comprehension.

Data did not reveal a significant interaction between the training and the levels of English language proficiency.

This finding appears to confirm Johnson's (1981, 1982) evidence in that subjects did not differ at a significant level across L2 proficiency levels. However, restructuring the parameters used to define intermediate and advanced language proficiency might produce different results.

The training period was relatively short. Effective integration of schemata may require practice and application to natural reading assignments rather than experimental tasks. In fact, some of the control group subjects did receive additional practice, as the experimenter discovered during the training sessions. A science teacher in one of the schools was instructing the students using the SQ3R method. This may partially account for the results obtained by the control group. Training transfer should be evaluated in order to make a more definitive statement.

An attempt was made to control for some subject variables, for example, reading ability, education, and age, by using them as covariates in the MANCOVA. As Lipson (1983) pointed out, reading ability could represent a significant factor. However, with subjects similar to the population of this study, it might be equally important to control for conceptual ability and cognitive styles through cognitive ability tests.

Relationship with Prior Knowledge

Prior knowledge studies which have involved assessing the subjects' prior knowledge before and after reading have

supported the notion that students with greater prior knowledge tended to recall more information (Anderson, Reynolds, Schallert, & Goetz, 1977; Steffensen, 1981). Other researchers have examined the predictive value of levels of prior knowledge to the quality or quantity of recall or comprehension (Langer, 1980; in press; Langer & Nicolich, 1981; Hare, 1982).

The findings of this study corroborate Langer's (1980, in press) results. The quality of the subjects' prior knowledge correlated with the reading comprehension performance on the maze measure ($p < .021$). The non-significant relationship on the multiple-choice items can be explained by examining the greater reliance on language cues that is inherent in both the PReP and the maze procedure but not necessarily in the multiple-choice format. The low correlation coefficients warrant a cautious interpretation of the results.

Relationship with Metacognitive Knowledge

Some evidence was found for the positive relationship between subjects' comprehension performance and self-assessment of predicted quantity of comprehension ($p < .001$) as well as predicted quality of comprehension ($p < .000$). These findings reinforce Peters' (1978) contention that supplemental forms of cognitive assessment can be employed when attempting to measure reading performance. Findings support the researcher's assumption

that ESOL adolescents have insights about their cognitive processes. These insights could be employed in reading diagnosis. Results do not corroborate Mize's (1983) conclusion that "readers at all levels of ability are not aware of whether they have comprehended adequately" (p.37).

In summary, the number of variables characterizing the ESOL population of this study may have moderated the results. Further research is needed in determining which variables have an interactive effect and which variables influence L₂ readers' comprehension to varying degrees. Specific implications follow in the next section of this chapter.

Implications

Theory

Schema theorists have speculated that the reader's pre-existing knowledge structures, schemata, facilitate comprehension by providing a higher-level structure to which to attach the detail. Within this framework, the reader uses two modes of processing information--top-down and bottom-up processing. Results of this study warrant cautious interpretation; however, an implication that may be drawn concerns processing. In order to refine the theory, it may be important for theorists to make predictions about what type of text facilitates which mode of processing.

Additionally, in view of the dynamic nature of knowledge, it may be necessary to consider the natural

evolvment of knowledge when examining the effects of induced schemata. How can naturally occurring prior knowledge be measured separately from induced schemata?

Research

Findings from this study raise further methodological concerns. These include:

1. For training studies, extended practice should be provided over a long period of time using a variety of material.
2. Multiple measures might be used to examine the effects of schemata, induced or naturally occurring, upon processing.
3. Because of the multiplicity of factors affecting comprehension, two types of studies are indicated by the present investigation: (a) small, in-depth longitudinal studies, and (b) large-scale investigations that would permit complete statistical analyses and greater generalizability.
4. In order to respond to criticisms that have attacked schema theories (Thorndyke & Yekovic, 1980), researchers should exercise strict control over the following variables: (a) ability range; (b) demographic data (e.g., age, sex); (c) learning styles; (d) ethnicity; (e) language background; (f) type of topics; (g) type of passage; (h) presentation of material; (i) method of assessment;

and (j) type of questions (text-implicit, text-explicit, script-implicit, passage independent).

5. Finer measures of self-diagnosis could be developed. The relationship between these instruments and more objective ones might be an interesting area to explore.

Practice

The findings of this study have only potential implications for education. The low, but significant, correlations between the prior knowledge estimate (PREP score) and the maze measure, as well as the significant correlations between the metacognitive assessment--quantitative and qualitative--and the reading comprehension performance measures, indicate a need to plan instruction and cater to students' level of knowledge and, just as Ausubel (1968) stated, to start where the learner is. Assuming teachers' competency, teachers might be in the best position to determine and evaluate students' needs.

Implications tentatively proposed by this study include: (a) assessment of naturally occurring prior knowledge (see Langer, 1980); (b) student involvement in self-diagnosis; (c) emphasis on prereading activities like webbing, especially for expository passages that are not excessively detailed; and (d) emphasis on concept development in conjunction with language instruction. The

nature of the interaction among the various variables, e.g., students' language and cultural background, may have affected subjects' reading performance, or inducement of schemata.

In recent years, researchers have recognized the multidimensional nature of reading (Langer & Smith-Burke, 1982) and education (Kirk, 1978). Although data gathered through the interviews requires sensitive interpretation, it could be a source of valuable information. A causal relationship between the qualitative data collected through the interviews and the quantitative data culled from the reading comprehension performance measures cannot be inferred. However, the interviews confirmed the investigator's belief about the importance of dealing with ESOL students as whole persons and the need not to consider social, psychological, or linguistic factors as separate entities, but to examine the interaction among them. The effects of this sociopsycholinguistic interaction upon reading remains an area in need of attention from theorists, researchers, and educators alike.

Chapter Summary

This chapter has presented a summary of this investigation. The limitations and findings were discussed. Implications of this study for theory, research, and instructional practice were also suggested.

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APPENDIX A

Parent Consent Letter
Personal Data Form

Dear Parents/Guardians:

I am a former teacher who is currently enrolled as a doctoral student at the University of Maryland. I am working on a study to learn more about how adolescents comprehend what they read. My study involves asking some students questions to determine what they know about given topics and showing them a way to organize information related to those topics. Other students will continue to receive reading instruction as originally planned by their teacher.

I shall be working with the students participating in the study for six class periods. In addition, I will be asking the school to help me in selecting appropriate reading passages by inspecting their scores on standardized tests that have been given at school. Your son/daughter's name will not be mentioned in the study; only numbers will be used for identification.

I would like your youngster to be part of this learning experience and am herewith requesting your permission for your son/daughter to participate. Please sign the form at the bottom of this letter and complete the attached Personal Data Form. Kindly return both forms to your child's ESOL/English transitional teacher in the next week.

If you have any questions or concerns about this study, please contact me at the Department of Curriculum and Instruction of the University of Maryland, 454-6415.

Thank you so much for your help and cooperation.

Sincerely,

Alba C. Ben-Barka
Graduate Teaching Assistant

APPROVED:

(Principal)

(name of student) may _____ or may not _____

participate in the University of Maryland study.

Date

Parent/Guardian's Signature

Student # _____

PERSONAL DATA FORM

Please give the information requested in the questions below. It will be used in my research study, not for grading purposes. Names will not be published and identifiable records will not be maintained. Thank you for your cooperation.

Alba C. Ben-Barka

* * * * *

Directions: Please print at all times. Fill in your name and birthdate on the lines below. Read each question carefully before you answer it. Check () only one answer. Fill in the answer whenever it is appropriate.

Name: _____ Birthdate: ____/____/____
 (Last, First, Middle Initial) (Mo)(Day)(Yr)
 Country of origin: _____ Sex: ____Male
 ____Female

1. What is your current student status?
 - ____a. Foreign student
 - ____b. Immigrant
 - ____c. Refugee
 - ____d. U.S. citizen (born in the U.S. or U.S. possession)
 - ____e. Naturalized citizen
 - ____f. Other (please specify:_____)
2. How long have you lived in the United States?
 - ____a. Less than 6 months
 - ____b. 6 months to 1 year
 - ____c. More than 1 year, but less than 2 years
 - ____d. More than 2 years, but less than 5 years
 - ____e. More than 5 years, but not all my life
 - ____f. All my life
3. How long have you studied English in the United States?
 - ____a. Less than 1 year
 - ____b. More than 1 year, but less than 2 years
 - ____c. More than 2 years
4. How long have you studied English outside the United States?
 - ____a. None
 - ____b. Less than 1 year
 - ____c. More than 1 year, but less than 2 years
 - ____d. More than 2 years

5. How long have you been enrolled at this school?
- ☐ a. Less than 6 months
 - ☐ b. 6 months to 1 year
 - ☐ c. More than 1 year, but less than 2 years
 - ☐ d. More than 2 years
6. When or where do you use English? (Please check all those that are applicable)
- ☐ a. At school
 - ☐ b. At home
 - ☐ c. When I play
 - ☐ d. In stores
 - ☐ e. Other (Please specify: _____)
7. With whom do you speak English? (Please check all those that are applicable)
- ☐ a. My family
 - ☐ b. Americans
 - ☐ c. Non-Americans
 - ☐ d. Teachers and school staff
 - ☐ e. Other (Please specify: _____)
8. How many years of school did you attend outside the United States?
- ☐ a. Less than 2 years
 - ☐ b. More than 2, but less than 3 years
 - ☐ c. More than 3, but less than 5 years
 - ☐ d. More than 5, but less than 7 years
 - ☐ e. More than 7, but less than 9 years
 - ☐ f. More than 9 (Please specify: _____)

APPENDIX B

Langer's Pre Reading Plan

Coder # _____ Pre Reading Plan Response Checksheet
(PREP)

PHASE 1 What comes to mind when...?
 PHASE 2 What made you think of...?
 PHASE 3 Have you any new ideas about...?

STIMULUS (note word, picture, or phrase)	MUCH superordinate concepts, definitions, analogies, linking		SOME examples, attributes, defining characteristics		LITTLE morphemes, sound alike recent experiences	
	1	3	1	3	1	3
Student Names						
1. _____						
2. _____						
3. _____						
4. _____						
5. _____						
6. _____						
7. _____						
8. _____						
9. _____						
10. _____						

SOURCE: Langer, J. A. (1982). Facilitating text processing The elaboration of prior knowledge. In J. A. Langer & M. T. Smith-Burke (Eds.), Reader meets author/Bridging the gap. Newark, DE: International Reading Association, p. 159.

APPENDIX C

ACTFL/ETS Oral Proficiency Scale

ACADEMIC (ACTFL/ETS) RATING SCALE

0: No ability whatsoever in the language.

NOVICE LOW

Unable to function in the spoken language. Oral production is limited to occasional isolated words. Essentially no communicative ability.

NOVICE MID

Able to operate only in a very limited capacity within very predictable areas of need. Vocabulary limited to that necessary to express simple elementary needs and basic courtesy formulae. Syntax is fragmented, inflections and word endings frequently omitted, confused or distorted and the majority of utterances consist of isolated words or short formulae. Utterances do not show evidence of creating with language or being able to cope with the simplest situations. They are marked by repetition of an interlocutor's words as well as by frequent long pauses. Pronunciation is frequently unintelligible and is strongly influenced by first language. Can be understood only with difficulty, even by persons such as teachers who are used to speaking with non-native speakers.

NOVICE HIGH

Able to satisfy immediate needs using learned utterances. There is no real autonomy of expression, although there are some emerging signs of spontaneity and flexibility. There is a slight increase in utterance length but frequent long pauses and repetition of interlocutor's words may still occur. Can ask questions or make statements with reasonable accuracy only where this involves short memorized utterances or formulae. Most utterances are telegraphic and word endings are often omitted, confused or distorted. Vocabulary is limited to areas of immediate survival needs. Can produce most phonemes but when they are combined in words or groups of words, errors are frequent and, in spite of repetition, may severely inhibit communication even with persons used to dealing with such learners. Little development in stress and intonation is evident.

INTERMEDIATE LOW

Able to satisfy basic survival needs and minimum courtesy requirements. In areas of immediate need or on very familiar topics, can ask and answer simple questions, initiate and respond to simple statements, and maintain very simple face-to-face conversations. When asked to do so, is able to formulate some

questions with limited constructions and much inaccuracy. Almost every utterance contains fractured syntax and other grammatical errors. Vocabulary inadequate to express anything but the most elementary needs. Strong interference from L1 occurs in articulation, stress and intonation. Misunderstandings frequently arise from limited vocabulary and grammar and erroneous phonology but, with repetition, can generally be understood by native speakers in regular contact with foreigners attempting to speak their language. Little precision in information conveyed owing to tentative state of grammatical development and little or no use of modifiers.

INTERMEDIATE MID

Able to satisfy some survival needs and some limited social demands. Some evidence of grammatical accuracy in basic constructions, e.g., subject-verb agreement, noun-adjective agreement, some notion of inflection. Vocabulary permits discussion of topics beyond basic survival needs, e.g., personal history, leisure time activities. Is able to formulate some questions when asked to do so.

INTERMEDIATE HIGH

Able to satisfy most survival needs and limited social demands. Developing flexibility in a range of circumstances beyond immediate survival needs. Shows spontaneity in language production but fluency is very uneven. Can initiate and sustain a general conversation but has little understanding of the social conventions of conversation. Limited vocabulary range necessitates much hesitation and circumlocution. The commoner tense forms occur but errors are frequent in formation and selection. The commoner tense forms occur but errors are frequent in formation and selection. Can use most question forms. While some word order is established, errors still occur in more complex patterns. Cannot sustain coherent structures in longer utterances or unfamiliar situations. Ability to describe and give precise information is limited. Aware of basic cohesive features (e.g., pronouns, verb inflections), but many are unreliable, especially if less immediate in reference. Extended discourse is largely a series of short, discrete utterances. Articulation is comprehensible to native speakers used to dealing with foreigners, and can combine most phonemes with reasonable comprehensibility, but still has difficulty in producing certain sounds, in certain positions, or in certain combinations, and speech will usually be labored. Still has to repeat utterances frequently to be understood by the general public. Able to produce narration in either past or future.

ADVANCED

Able to satisfy routine social demands and limited work requirements. Can handle with confidence but not with facility most social situations including introductions and casual conversations about current events, as well as work, family, and autobiographical information; can handle limited work requirements, needing help in handling any complications or difficulties. Has a speaking vocabulary sufficient to respond simply with some circumlocutions; accent, though often quite faulty, is intelligible; can usually handle elementary constructions quite accurately but does not have thorough or confident control of the grammar.

ADVANCED PLUS

Able to satisfy most work requirements and show some ability to communicate on concrete topics relating to particular interests and special fields of competence. Often shows remarkable fluency and ease of speech, but under tension or pressure language may break down. Weaknesses or unevenness in one of the foregoing or in pronunciation result in occasional miscommunication. Areas of weakness range from simple constructions such as plurals, articles, prepositions, and negatives to more complex structures such as tense usage, passive constructions, word order, and relative clauses. Normally controls general vocabulary with some groping for everyday vocabulary still evident.

SUPERIOR

All performance above advanced plus is rated as superior.

APPENDIX D

Training Scripts: Experimental Group

Training Script - Day 1

Hello! My name is _____. I will be working with you all this week. I am a teacher who is very interested in helping you learn to read better.

Each day we will do some activities together. Please try to participate as much as possible. You will not be graded, but you will receive some extra credit from your teacher. Feel free to ask questions if you do not understand.

Here is what we will do

1. I am going to show you a picture. The picture is of the United States Flag (show picture of flag).

2. I will now ask you three questions. Try to think of everything you know about the flag (PReP questions).

What comes to mind when you look at the flag or a picture of the flag?

What made you think of.....(use students' responses to complete the sentence)

Have you any new ideas about the flag?

3. Good, I can see you are doing well.

4. Do you like to draw? I do. I hope you like it too. Will you help me make a web?

5. Who can tell me what a web is?

6. That's right. A web is what a spider makes. Well, we are not going to draw a spider web. We'll draw something that looks like it which will help us understand what we read better.

7. First, we start by drawing a circle. Inside the circle we write down what the most important idea is in the passage you are going to read.

8. Who wants to take a guess at what the main idea of the passage is? Good. Let's write it in.

9. What kind of information would you want to know about the flag? (Give time to think. Start drawing the web strands. Write in the subtopics; draw in the strand supports and strand ties as students respond.)

10. (If students don't respond)
Let's see. Perhaps you want to know the size or who made it...or why it was made. What can we write in this circle? (Wait)
Excellent. And in this one? OK, that's good. Anything else?
(Allow for discussion; fill in the web.)
11. Very good. I'll leave the web on the blackboard so that it may help you as you read.
12. Now, I am going to give you the passage to read. Read silently to yourselves. When you finish answer the multiple-choice questions. (Allow time)
13. Is everybody finished? Great. Was it too easy for you?
14. Let's talk about the questions or, rather, about your responses.
15. What is the best answer for number 1? (Wait) (Praise) Why? (Discuss options).
16. What is the answer to number 2? (Wait) (Praise) Why? (Discuss options).
17. (Ask these questions for numbers 3-10).
18. Excellent. Does anybody have any questions about what we did today? Good. Tomorrow we will read another passage and you will get a chance to practice some activities by yourselves.
19. (Thank the students and ask them not to tell their classmates about what they had done.)

Training Script - Day 2

Hi! How are you today?

Who can tell me what we are going to do today? That's right. We'll ask questions, do some webbing, read, answer the multiple-choice questions and talk about them.

1. First, let's do some webbing. Remember, the main idea goes in the center and all the supporting details all around it. Here are some questions you can ask yourselves which will help you organize the information.

- Q. 1. What is the passage going to be about? (Main idea)
- Q. 2. Who made it? (Origin/history)
- Q. 3. Where was it made? (Origin)
- Q. 4. What does it look like? (Physical description)
- Q. 5. What material is it made of?
- Q. 6. How big is it? (Size)
- Q. 7. Why was it made? (Significance)
- Q. 8. Where is it? (Location)
- Q. 9. What is it called?
- Q.10. Who paid for the monument? How much did it cost (expense)?
- Q.11. Who maintains the monument?

2. To sum up, here are the parts that make up a web:

- a central idea or question
- web strands (subtopics or answers to the question)
- strand supports (supporting facts, inferences, generalizations)
- strand ties (relationships among strands)

Do you have any questions? (Give students feedback)

3. I would like you to work with two other people. Talk softly so that you won't disturb the others. I'll go around and work with the different groups.

Find out as much as you can about what all three of you know about the Liberty Bell.

4. Look at the blackboard and follow the steps I have suggested. (PReP questions: Allow for discussion)

- What comes to your mind when you see a picture of the Liberty Bell?
- What made you think of.....
- Have you any new ideas about the Liberty Bell?

5. Please read passage #2 quickly. Then complete your web by filling in all the parts.
6. When you finish, answer the multiple choice questions.
7. I am glad you're doing so well. Would you like more time or can we go over your answers?
8. Fine. (Go over each question and discuss all options)
9. The bell is going to ring soon. Before you leave, who will tell me why organizing your thoughts before and during reading should help you understand it better? (Allow for response. Elaborate, if needed.)
10. Thank you for doing such a fine job. Please don't tell your friends about the activities we are doing until next week.

Training Script - Day 3

Hello! How are you today?

Today we are going to repeat the same activities that we did on Tuesday. By the end of the week I think you will all be experts.

First, I'll ask you some questions. Secondly, we'll do a web. Then you read a passage about the Great Seal of the United States and, finally, you'll answer some multiple-choice questions.

Remember, try to think of everything you know about the Seal

1. I am going to show you a picture of the Seal. (Show the picture)
2. I will now ask you three questions. Think about the Seal or anything that reminds you of it. (PReP questions)

What comes to mind when you look at the Seal or a picture of the Seal?

What made you think of....(use students' responses to complete the sentence.

Have you any new ideas about the Seal?

3. Good, keep it up.
4. Today's passage is called The Great Seal of the United States. Who is going to tell me what to write in the center of the web?
5. Very good, _____. Exactly what I was hoping you would say. Yes, something like the U.S. Seal is the main idea so we write it in the big circle.
6. What other questions are you going to ask yourselves? What are the strands of this web? (E.g., origin, designers, location, significance, purpose, function, size)
(Allow for discussion)
(Fill in web as students respond)
7. Fine. I'll leave the web on the blackboard so that you can refer to it as you read and complete your web.
8. I am going to pass around the passage. Please read it silently. Fill in the answers on your web and answer the

questions.

9. Very good. I see you have almost finished. One more minute and then we'll talk about your responses to the multiple-choice items.
10. What is the best answer for number 1? (Wait) (Praise) Why? (Discuss options)
11. (Ask these questions for numbers 2-10).
12. What will you remember to do tomorrow as you are getting ready to do the web? (Summarize important points of webbing. Students should fill in the main idea, web strands, strand supports, and strand ties.)

Training Script - Day 4

Hi! How are you doing today?

Today we're going to work very quickly. I would really like to take some time at the end of the class to answer questions or help anybody who is unsure of the activities we have been doing this week.

1. Before we start, let's review how to organize the material into a web.

2. Who can tell me what goes in the middle? Good, _____.

The main idea or question goes in the circle at the center of the web.

3. What goes all around the circle? Very good, _____.

The web strands which are actually the subtopics or answers to the question go around the circle.

4. How can we make the web strands stronger? Yes, _____. That's right.

The strand supports add the supporting details and your ideas about them.

5. What is the relationship among these lines or strands? (Allow for discussion)

6. Break up into groups of threes, the same people you worked with on Tuesday. You may talk softly, but don't disturb the others. I'll go around and work with the different groups.

Find out as much as possible what all three of you know about the Statue of Liberty

7. Look at the blackboard and follow the steps I have suggested. (PReP questions: Allow for discussion)

- What comes to your mind when you see a picture of the Statute of Liberty?
- What made you think of....(use students' responses to complete the sentence)
- Have you any new ideas about the Statute of Liberty?

8. Here is the passage on the Statue of Liberty. Please read it silently. As you are reading, fill in the important parts of the web.

9. Ready? Go ahead and start. Raise your hand if you need some help. (Allow for webbing) Very good.
10. Very good. Now answer the multiple-choice questions. Believe it or not, you managed to do everything in less than _____ minutes. Excellent.
11. Let's see how you did on the multiple-choice questions. (Go over each item and discuss all alternatives)
12. Thank you so much for doing such a fine job. Tomorrow we'll read one more passage and review everything. Please don't tell your friends about our activities until next week.

Training Script - Day 5

Hi! How are you today?

Today is the last day that we'll work on these activities. I want you to be sure and ask questions if you are not sure of what we have been doing. Monday, I'll give you a quiz using a different passage. Don't worry. You will all do fine.

(Review the PReP. Make sure the students understand the purpose.)

(Review webbing. The students should know the purpose and parts of a web.)

(Have students read the passage entitled The Washington Monument and do a web.)

(Students will fill in the multiple-choice questions. Afterwards, check on students' strategies for taking this type of test.)

(Allow for discussion.)

(Thank students and ask them not to talk to their friends about the activities till the following week.)

APPENDIX E

Training Script: Control Group

General Script

Days 1-5

(SQ3R, adapted from Cheek and Cheek, 1983)

After the initial introduction (in the case of the investigator), the students are introduced to the purpose of the study (Day 1) or reminded of it (Days 2-5). Specifically, the instructors say:

- The purpose of the exercises you will be doing this week is to assist you in organizing your thoughts and ask questions which will help you to comprehend better.
- This week you are going to learn and practice a study skill method which is useful not only with English but also with the other subjects. Here are the steps you follow in the SQ3R method:

1. Survey: Survey means to look over the passage and get a general idea of what it is about. Introductory statements, titles, conclusions usually give you a quick idea of the meaning of the article.
2. Questions: Now you are ready to work. Turn the first sentence of each paragraph into a question. This will help you to understand and remember the important ideas.
3. Read: Read silently to answer the questions.

4. Recite: Answer the questions by reciting them to yourselves. Yes! That's right, use your own words, trying to give examples whenever you can. If you are having trouble, glance over the passage again and look for the answers.
5. Review: Now, reread portions of the book or notes to verify if your answers to the questions are correct.
-- Do you have any questions?

APPENDIX F

Expository Passages Multiple-Choice Comprehension Questions

PASSAGE #1

The United States Flag*

The national flag of the United States is known as the Stars and Stripes. No one knows where this name came from, but we do know the origin of several other names. Francis Scott Key first called the U.S. flag the Star-Spangled Banner in 1814 when he wrote the poem that became the national anthem. William Driver, a sea captain from Salem, Mass., gave the name Old Glory to the United States flag in 1824.

The Stars and Stripes stands for the land, the people, the government, and the ideals of the United States, no matter when or where it is displayed. Some other flags, for example the Navy Jack, also stand for the United States or its government, in certain situations.

It was in Philadelphia, Pennsylvania, that the Continental Congress adopted the first official American flag. The date was June 14, 1777, almost a year after the adoption of the Declaration of Independence. The Continental Congress resolved that "the Flag of the United States be 13 stripes alternate red and white, and the Union be 13 stars while in a blue field representing a new constellation." However, the size, number of points, arrangement of stars, shade of red and blue and direction of stripes were not described.

As more states joined the Union, Congress did not want to continue adding new stars and stripes because the flag would be too cluttered. Samuel Chester Reid's (a navy captain) proposal

for a flag of 13 stripes, with a star for each state, was approved on April 4, 1818.

The original symbolism of the colors is not known. However, when the Continental Congress chose the same colors for the Great Seal of the United States in 1782, they indicated that red stood for hardiness and valor; white, purity and innocence; and blue for vigilance, perseverance, and justice.

*Adopted from The World Book Encyclopedia, © 1984 World Book, Inc.

PASSAGE #2

The Liberty Bell*

The Liberty Bell is a treasured memorial of the early days of American independence. It was rung on July 8, 1776, with other church bells, to announce the adoption of the Declaration of Independence. Its inscription, "Proclaim Liberty throughout all the land unto all the inhabitants thereof", is from the Bible (Leviticus 25:10).

The Liberty Bell weighs over 2,080 pounds. It is 12 feet in circumference at the lip and 7 feet, 6 inches around the crown. The distance from lip to crown is 3 feet. The overall height is 5 feet, 3 inches. The bell is 3 inches thick at the lip and 1 1/4 inches at the crown. The province of Pennsylvania paid about \$300 for it in 1752. It now hangs in Liberty Bell Pavilion, just north of Independence Hall in Philadelphia.

The Liberty Bell was first cast in England. It broke after its arrival and was recast in Philadelphia from the same metal, with the same inscription, in 1753. The Liberty Bell rang at each successive anniversary of the adoption of the Declaration until 1835. The bell broke on July 8 that year, while being rung during the funeral of John Marshall, Chief Justice of the United States. The bell became known as the Liberty Bell about 1839, when abolitionists began to refer to it that way. Previously, the bell had been called the Old State House Bell, the Bell of the Revolution, or Old Independence.

The Liberty Bell is no longer used, but it has been struck on special occasions. On June 6, 1944, when Allied Forces landed in France, Philadelphia officials struck the bell. Sound equipment transmitted the tone to all parts of the nation. Independence Hall was the permanent residence of the bell from 1755 until January 1, 1976, when it was moved to the pavilion.

*Adapted from The World Book Encyclopedia, © 1984, World Bood, Inc.

PASSAGE #3

The Great Seal of the United States*

The Seal of the United States is a symbol of the nation's sovereignty. Creation of the seal was authorized by the Continental Congress, which approved it in 1782. William Barton, an authority on heraldry, designed most of the obverse, or face, side of the Seal, and Charles Thomson, secretary of the Congress, prepared the design used on the reverse side.

The face of the Seal bears the design used on official documents. The eagle, clutching an olive branch and arrows, also displays a 13 striped shield. It symbolizes self-reliance and the nation's power of peace and war. In its beak is a scroll inscribed E Pluribus Unum. This Latin phrase was used to represent the unity of the people, that is, one nation out of many states. Above its head is the 13-star new constellation of the 1777 flag, enclosed in a glory, or golden radiance, breaking through a cloud.

The reverse side of the seal may be seen on the back of a one-dollar bill, but it has never been used as a seal. An unfinished pyramid with 13 tiers, represents the strength and duration of the union. Above it is the eye of the Providence and the Latin words Annuit Coeptis (He [God] has favored our undertaking) and below it, Novus Ordo Seclorum (A New Order of the Ages). On the pyramid's base is the year of independence, 1776.

The fifth die, made in 1904, is still in use. It is on permanent exhibition in the Department of State Building in Washington, D.C. It may be seen while it is being used, but an appointment is needed.

*Adapted for The World Book Encyclopedia, (c) 1984, World Book, Inc.

PASSAGE #4

The Statue of Liberty*

The Statue of Liberty is an inspirational monument that represents "Liberty Enlightening the World." The copper statue stands on a 12-acre plot of land called Liberty Island, in New York Harbor. The Statue of Liberty has become a symbol for the freedom and democracy of the United States.

The figure is that of a dignified woman dressed in a flowing robe. In her right hand she holds high a blazing torch. In her left hand is a tablet with the date of the Declaration of Independence. A crown rests on her head. The statue is 151 feet tall, and weighs 225 tons. The over-all height from the foundation of the pedestal to the tip of the torch is 305 feet. The index finger alone is 8 feet long.

The Statue of Liberty was a gift from the people of France to the people of the United States. A French artist, named Frederic A. Bartholdi, was appointed to design the statue. France gave the gift to the United States for its 100th anniversary in 1876. The gift strengthened the friendship between the two nations.

The French people contributed more than \$250,000 for the statue. The people of the United States donated about \$350,000 for the pedestal. Although construction of the gigantic statue was begun in 1876, it was not completed and dedicated until 1886.

The Statue of Liberty was made a national monument in 1924. Thousands of tourists visit Liberty Island every year. Tourists can take an elevator to the top of the pedestal. They can climb the stairs inside the statue all the way to the crown. The whole city of New York can be seen from the crown.

*Adapted from the Britannica Junior Encyclopedia, © 1981, Encyclopedia Britannica, Inc.

PASSAGE #5

The Washington Monument*

The Washington Monument is a great obelisk building in honor of George Washington. It stands in Washington, D.C., near the Potomac River, about halfway between the Capitol and the Lincoln Memorial.

The Monument has the shape of the obelisks of ancient Egypt, but it is several times larger than they were. It is 555 feet 5 1/8 inches high, and measures 55 feet 1 1/8 inches along each of its four sides at the bottom. The walls are covered with white marble from Maryland.

Inside, the monument is hollow. The inner walls are set with 189 carved memorial stones, many of historical interest. The stones were presented by individuals, societies, cities, states, and other countries. Visitors must take an elevator to the top of the monument. To descend, they can either take the elevator or walk down the 898 steps leading from the top. The view of Washington, D.C., is impressive. More than a million persons visit the Washington Monument each year.

Some persons planned a memorial to Washington while he was still alive, but he objected to the expense. In 1833, the Washington National Monument Society began raising funds for a monument. A design by Robert Mills had already been accepted in part. The government approved the project, and the cornerstone was laid on July 4, 1848, with the same trowel that Washington

had used to lay the cornerstone of the Capitol in 1793. But engineers found the ground too soft to support the monument, so they moved the site to the north.

Work began on August 17, 1880. It was completed on December 6, 1884. The monument was dedicated on February 21, 1885, and opened to the public on October 9, 1888. Its total cost was \$1,187,710.31. The monument is maintained as a national memorial by the National Park Service.

*Adopted from The World Book Encyclopedia, ©1984 World Book, Inc.

PASSAGE #1
MULTIPLE CHOICE
COMPREHENSION QUESTIONS

NAME _____

Circle the statement with the letter that best describes the answer. Not all the answers can be found in the passages. If you are unsure of the answer, circle the response that makes more sense to you. Use the extra space in each section to add any comments about your answers.

1. What do the stripes stand for:
 - A. the thirteen colonists
 - B. the patriots
 - C. the thirteen colonies
 - D. the new nation
2. Who made the first flag?
 - A. No one knows
 - B. Francis Scott Key
 - C. Betsy Ross
 - D. Samuel Chester Reid
3. Why did the Continental Congress want a flag?
 - A. to oppose Great Britain
 - B. as a symbol of forcefulness
 - C. to avoid quarrels
 - D. as a symbol of independence
4. What does the American flag represent?
 - A. the nation
 - B. the national anthem
 - C. the government
 - D. the union of the states
5. Where is the Navy Jack displayed?
 - A. on a ship
 - B. at a school
 - C. on a Naval base
 - D. at a marina
6. If Puerto Rico is admitted to statehood, what is likely to happen to the American flag?
 - A. a new stripe will be added
 - B. a new star will be added
 - C. a star and a stripe will be added
 - D. nothing will happen

7. Where was the first flag adopted?
 - A. Washington, D.C.
 - B. New York City
 - C. Philadelphia, Penn.
 - D. Boston, Mass.
8. Who named the U.S. flag OLD GLORY?
 - A. No one knows
 - B. Francis Scott Key
 - C. William Driver
 - D. Samuel Chester Reid
9. What color(s) in the flag represent(s) "truth"?
 - A. red and blue
 - B. blue
 - C. blue and white
 - D. white
10. What is the relationship between each star and its placement on the American flag?
 - A. Each star designates a particular state.
 - B. The relationship was established by Betsy Ross.
 - C. The Continental Congress followed a predesignated plan.
 - D. There is no relationship.

PASSAGE #2
MULTIPLE CHOICE
COMPREHENSION QUESTIONS

NAME _____

Circle the statement with the letter that best describes the answer. Not all the answers can be found in the passages. If you are unsure of the answer, circle the response that makes more sense to you. Use the extra space in each section to add any comments about your answer.

1. Why was the Liberty Bell made?
 - A. to honor the nation
 - B. as a reminder of the war
 - C. to proclaim freedom
 - D. as a reminder of the past
2. How wide is the Liberty Bell at the bottom?
 - A. 3 feet
 - B. 9 feet
 - C. 12 feet
 - D. 15 feet
3. Which of these names does not refer to the Liberty Bell?
 - A. Old State House Bell
 - B. Freedom Rings
 - C. Old Independence
 - D. Bell of the Revolution
4. Who owns the Liberty Bell?
 - A. the City of Philadelphia
 - B. the revolutionists
 - C. the people of England
 - D. the U.S. government
5. When did the Liberty Bell first break?
 - A. during the journey
 - B. in casting
 - C. upon its arrival
 - D. in testing
6. If the Liberty Bell was rung again, what kind of event might be taking place?
 - A. a betrayal
 - B. a treaty
 - C. a nuclear war
 - D. a defeat

7. Where does the inscription on the bell come from?
 - A. the Constitution
 - B. the Bible
 - C. the Declaration of Independence
 - D. the Bill of Rights
8. When was the Liberty Bell rung?
 - A. when a President took office
 - B. every four years, in the month of July
 - C. on the anniversary of the adoption of the Declaration
 - D. every January 1st to welcome a New Year
9. Where is the Liberty Bell?
 - A. in the State of Washington
 - B. in one of the original states
 - C. in Washington, D.C.
 - D. in one of the last approved states
10. What does the Liberty Bell symbolize?
 - A. peace
 - B. perseverance
 - C. independence
 - D. power

PASSAGE #3
MULTIPLE CHOICE
COMPREHENSION QUESTIONS

NAME _____

Circle the statement with the letter that best describes the answer. Not all the answers can be found in the passages. If you are unsure of the answer, circle the response that makes more sense to you. Use the extra space in each section to add any comments about your answer.

1. What does the Seal of the U.S. symbolize?
 - A. independence
 - B. sovereignty
 - C. unity
 - D. bravery
2. What is the Seal used for?
 - A. to validate the authority of the U.S.
 - B. to decorate official letters and documents
 - C. to make a U.S. paper look official
 - D. to ensure privacy in sending documents
3. Why was the Seal adopted by the U.S.?
 - A. to be used on U.S. dollar bills
 - B. to conceal unity of the new states
 - C. to signify equal rank to other nations
 - D. to remember its loyalty to another state
4. What can you do to see the official Seal in use?
 - A. Stop by the State Department Building and see the Seal on display.
 - B. Call the State Department and schedule an appointment
 - C. Write to the President and ask for his permission
 - D. Offer to buy the die that reproduces the Seal
5. Which side of the Seal may be seen on a one-dollar bill?
 - A. the face
 - B. the obverse
 - C. the inverse
 - D. the reverse
6. What is on the Seal that is a sign of heraldry?
 - A. the branches
 - B. the stars
 - C. the shield
 - D. the stripes

7. What does the eagle symbolize?
 - A. brutality
 - B. self-reliance
 - C. natural resources
 - D. magnificance
8. Who authorized the creation of the Seal?
 - A. the Continental Congress
 - B. the President
 - C. the Supreme Court
 - D. the House of Representatives
9. What makes a "seal" different from other symbols?
 - A. the expense
 - B. the location
 - C. the size
 - D. the design
10. What does each of the 13 tiers on the reverse side of the Great Seal represent?
 - A. an original colony
 - B. the growth of the union
 - C. a Founding Father
 - D. a day spent to form the union

PASSAGE #4
MULTIPLE CHOICE
COMPREHENSION QUESTIONS

NAME _____

Circle the statement with the letter that best describes the answer. Not all the answers can be found in the passages. If you are unsure of the answer, circle the response that makes more sense to you. Use the extra space in each section to add any comments about your answer.

1. Why did France donate the Statue of Liberty to the U.S.?
 - A. to show they liked the U.S.
 - B. to indicate the sovereignty of the U.S.
 - C. to ask the U.S. for protection
 - D. to commemorate U.S. and French alliance
2. When was the Statue of Liberty made?
 - A. before the Declaration of Independence
 - B. at the same time as Independence Day
 - C. after the 100th anniversary of the U.S.
 - D. around the year 1924
3. What is the complete height of the Statue of Liberty?
 - A. 225 feet
 - B. 80 feet
 - C. 305 feet
 - D. 151 feet
4. Which purpose does the torch of liberty serve?
 - A. to guide ships and planes
 - B. to inspire Americans
 - C. to attract tourists
 - D. to illuminate Liberty Island
5. Which is the real name of the Statue?
 - A. the Statue of Liberty
 - B. Liberty Enlightening the World
 - C. the American Liberty Statue
 - D. the Liberty Memorial Monument
6. Whom does the inscription written on the tablet welcome?
 - A. the Pilgrims
 - B. all people
 - C. Americans
 - D. immigrants

7. Which of these figures is closer to the total cost of the Statue of Liberty?
 - A. 625,000
 - B. 250,000
 - C. 500,000
 - D. 350,000
8. When did France give the Statue of Liberty to the U.S.
 - A. on the fourth of July of 1774
 - B. on the 100th anniversary of the U.S.
 - C. on the arrival of the first Frenchmen to the U.S.
 - D. on the inaguration day of the first President
9. Where is the Statue of Liberty located?
 - A. Philadelphia, Penn.
 - B. Los Angeles, Ca.
 - C. Lyons, France
 - D. Liberty Island, N.Y.
10. What does the Statue of Liberty represent?
 - A. friendship
 - B. peace
 - C. freedom
 - D. valor

PASSAGE #5
MULTIPLE CHOICE
COMPREHENSION QUESTIONS

NAME _____

Circle the statement with the letter that best describes the answer. Not all the answers can be found in the passages. If you are unsure of the answer, circle the response that makes more sense to you. Use the extra space in each section to add any comments about your answer.

1. What are the walls of the Washington Monument made of?
 - A. marble
 - B. granite
 - C. concrete
 - D. capstone
2. Why did Washington object to the memorial?
 - A. it was unnecessary
 - B. it was too costly
 - C. builders were not available
 - D. it was too tall
3. When was the monument finished?
 - A. 1884
 - B. 1848
 - C. 1876
 - D. 1888
4. Who did not make a contribution of money or items for the monument?
 - A. states
 - B. individuals
 - C. Know-Nothings
 - D. cities
5. Who had the original idea to build the monument?
 - A. George Washington
 - B. the cities, states, and people
 - C. Robert Mills
 - D. the Continental Congress
6. What does the monument symbolize?
 - A. George Washington's contribution
 - B. George Washington's independence
 - C. George Washington's simplicity
 - D. George Washington's strength

7. What shape does the Washington Monument resemble?
 - A. Egyptian pyramids
 - B. ancient statutes
 - C. Egyptian obelisks
 - D. Roman monuments
8. Who paid for the Washington Monument?
 - A. federal taxes and public donations
 - B. funds raised by the historical societies
 - C. state taxes and public subscriptions
 - D. the U.S. Department of the Interior
9. How are people allowed to go to the top of the Washington Monument?
 - A. by helicopter
 - B. by walking up the stairs
 - C. by climbing up a rope
 - D. by elevator
10. What agency maintains the Washington Monument/
 - A. the Park and Planning Commission
 - B. the government of Washington, D.C.
 - C. the National Park Service
 - D. the Washingtonian maintenance crew

APPENDIX G

Testing Packets With Three Sets of Material

1. Prediction Task Sheet, PReP Sheet
2. Expository Passage #6, Confidence Rating Sheet, and Multiple Choice Comprehension Questions
3. Maze Questions

PASSAGE # _____

(Title)

PREDICTION TASK SHEET

Look at the title of the passage. Answer the following questions quickly. Circle the appropriate number for each question.

1. How much do you know about this topic?

1	2	3	4	5
none of it	a litte	some	most	all

2. How well do you know this material or information?

1	2	3	4	5
not at all	moderately	fairly well	well	very well

3. How interested are you in this topic?

1	2	3	4	5
not at all interested	a little interested	somewhat interested	inter- ested	very interested

PREP SHEET

Directions: You will be asked three questions. Please work quickly. Write down any ideas which come to mind (that you think of) as you read each question. Spelling does not count.

- I. What comes to mind when you look at the picture of Mount Rushmore National Memorial?

- II. What made you think of this (your reply to the first question)?

- III. Look again at the picture of Mount Rushmore National Memorial. Have you any new ideas about it?

PASSAGE #6

Mount Rushmore National Memorial*

Mount Rushmore National Memorial is a huge carving on a granite cliff called Mount Rushmore in the Black Hill Mountains of South Dakota. It shows the faces of four American Presidents: George Washington, Thomas Jefferson, Theodore Roosevelt, and Abraham Lincoln. The head of Washington is as high as a five story building (about 60 feet). The original idea for the Memorial is credited to Jonah Leroy "Doane" Robinson, who was Superintendent of the South Dakota State Historical Society for many years.

Gutzon Borglum, a famous American sculptor noted for carving huge figures in national rock formations, designed the memorial and supervised most of its work. Workmen used models that were one-twelfth the size of the Monument to obtain measurements for the figures. The models were lifted to the edge of the cliff to guide the workmen. The men cut the figures from Mount Rushmore's hard rock with drills and dynamite.

Congress authorized the project in 1925, and in 1929 created the Mount Rushmore National Memorial with 1,558 acres. Work on the memorial began in 1927 and continued with periodic lapses, for over 14 years. Borglum died in 1941, before the memorial was completed, and his son Lincoln finished the work. Private donors supplied the initial funds, but the United States government paid most of the cost.

Mount Rushmore stands in the mountains 25 miles from Rapid City, South Dakota. It rises 5,725 feet above sea level, and more than 500 feet above the valley. The memorial is called "America's Shrine of Democracy," with the Presidents representing the founding, expansion, preservation, and unification of the U.S. As a part of the National Park System, it is "administered by the Secretary of the Interior through the National Park Service for park/monument, historic, parkway, recreational, or other purposes."

*Adapted for The World Book Encyclopedia, © 1984, World Book, Inc.

PASSAGE #6
MULTIPLE CHOICE
COMPREHENSION QUESTIONS

NAME _____

Circle the statement with the letter that best describes the answer. Not all the answers can be found in the passages. If you are unsure of the answer, circle the response that makes more sense to you. Use the extra space in each section to add any comments about your answer.

1. Why was Mount Rushmore designed?
 - A. to uphold the national image
 - B. to commemorate the presidents
 - C. to raise public attention
 - D. to please the historical society
2. Where is Mount Rushmore located?
 - A. North Dakota
 - B. South Dakota
 - C. North Carolina
 - D. South Carolina
3. Who completed the Memorial?
 - A. Lincoln Borglum
 - B. Robert Mills
 - C. Gutzon Borglum
 - D. Gilbert C. File
4. What were the models made of?
 - A. granite
 - B. wood
 - C. marble
 - D. clay
5. How long did the actual work take?
 - A. fifteen years
 - B. six and a half years
 - C. fourteen years
 - D. twelve and a half years
6. Who administers the Memorial?
 - A. the federal government
 - B. Rapid City, So. Dakota
 - C. the state government
 - D. the Presidents' families

7. Whose face is not part of the Mount Rushmore Memorial?
 - A. T. Roosevelt
 - B. G. Washington
 - C. A. Lincoln
 - D. F.D. Roosevelt
8. Who paid for most of the memorial?
 - A. private donors
 - B. the federal government
 - C. donors from other countries
 - D. the state government
9. What may be the height of President Lincoln's head?
 - A. 70 feet
 - B. 60 feet
 - C. 50 feet
 - D. 45 feet
10. Why is the Mount Rushmore National Memorial called "America's Shrine of Democracy"?
 - A. It originated from democratic consensus of the American people
 - B. It was donated by the Democratic Party
 - C. It represents the Presidents' ideals
 - D. It is a shrine to commemorate American independence

PASSAGE # _____

(Title)

CONFIDENCE RATING SHEET

Circle the best response.

1. How much did you understand the reading?

1	2	3	4	5
not at	very little	some	a lot	almost
all				everything

2. How well did you understand the reading?

1	2	3	4	5
slightly	moderately	fairly well	well	very well

3. How interested were you in this topic?

1	2	3	4	5
not at all	a little	somewhat	interested	very
interested	interested	interested		interested

MOUNT RUSHMORE NATIONAL MEMORIAL

DIRECTIONS: Please circle the word that best completes the sentence.

Mount Rushmore National Memorial is a huge carving on a granite cliff called Mount Rushmore in the Black Hill Mountains of South Dakota. It shows the faces from of with amount

four American Presidents: George Washington, Thomas

James Jones Jefferson Jackson, Theodore Roosevelt, and

Abraham Lincoln. The figure arms looks head of Washington

is as high as a some the two- five story building (about 60

feet). An A The Borglum's original idea for the Memorial

is accounted credited given awarded to Jonah 'Leroy "Doane"

Robinson, who replaced the is was Superintendent of the

South Dakota State History President Librarian Historical

Society for many years.

Gutzon Borglum, the a well terribly famous American

sculptor noted for carving rapidly strong huge clay figures

in natural rock formations, designed Rushmore's the granite a

memorial and supervised most of its work completion design job.

Workmen used models that were one twelfth third twelve foot

the size of the Monument to observe draw obtain collect

measurements for the figures. The models

have been was had been were lifted to the edge of the

cliff mount slope rocks to guide the workmen. The men

excavated cut ejected engraved the figures from Mount

Rushmore's hard carving rock soil formation with drills

and dynamite.

Congress authorized memorial carving the a project in

1925, and in 1929 developed designed approved created the

Mount Rushmore National Memorial with 1,558 2,000 1,158 1,858

acres. Work on the memorial began at before in after

1927 and continued with periodic lapses, to for four from

over 14 years. Borglum died in 1937 1949 1943 1941, before

the work was completed, and one his the her son Lincoln

finished the work. Private enterprises contributions donors sectors

supplied the initial funds but the United Federal Union American

States government paid most of the work cost fees money.

Mount Rushmore stands in the mountains 125 85 55 25
 miles from Rapid City, South Dakota. Memorial He Monument It
 rises 5,725 feet above sea level, while and whereas but more
 than 500 feet above the ocean ground edge valley. The
 memorial is called "America's Shrine of to with toward
 Democracy," with the Presidents representing the founding,
division expansion discontinuity building, preservation, and
 unification of the U.S. As a part of the National Park System,
 it is "administered by the Secretary of the Interior through
 the National Park Service for park/monument, historic, parkway,
 recreational, or other purposes.

APPENDIX H

Sample Interview Checklist

Sample Interview Checklist (ACTFL/ETS Scale)

Novice: Tried to have conversation?

Covered 0 + Subject Areas:

Basic objects _____

Basic colors _____

Clothing _____

Day's date _____

Family members _____

Months _____

Time _____

Weather _____

Weekdays _____

Year _____

Intermediate: Tried to have conversation?

Checked for minimum courtesy requirements? _____

Checked that he can handle simple situations
of daily life and travel (S-1 Situations)? _____

Had him ask you questions? _____

Tried props when conversation fails? _____

Probed for past tense(s) and future? _____

Advanced:

Checked how he can satisfy routine social demands? _____

Checked how he talks about autobiographical
information? _____

Checked how he talks about current events? _____

Checked how he uses basic structures? _____

Checked how he used more complex structures? _____

Checked for description? _____

Checked for narration, particularly in past & future? _____

Checked how he handles simple situations of daily
life and travel (S-1 Situations)? _____

Checked how he joins sentences in connected
discourse? _____

Probed for how he handles an unknown topic
or situation? _____

Probed for supported opinion? _____

Advanced Plus:

Checked both everyday and abstract subject matter? _____

Placed him in unfamiliar situations and topics? _____

Checked his control of grammar? _____

Checked for supported opinion? _____

Checked for description? _____

Checked for narration? _____

Checked how he uses low-frequency structures? _____

Checked how he uses complex structures? _____

Checked for broad vocabulary? _____

Checked how he answers hypothetical questions? _____

Superior (1):

- Checked both everyday and abstract subject matter? _____
- Placed him in unfamiliar situations and topics? _____
- Checked his control of grammar? _____
- Checked for supported opinion? _____
- Checked for description? _____
- Checked for narration? _____
- Checked how he used low-frequency structures? _____
- Checked how he uses complex structures? _____
- Checked for broad vocabulary? _____
- Checked for how he answers hypothetical questions? _____
- Checked how he handles an unknown situation? _____
- Checked how he tailors his speech to his audience(s)? _____

Superior (2):

- Checked both everyday and abstract subject areas? _____
- Checked for high-level colloquialisms? _____
- Checked for pertinent cultural references? _____
- Checked his ability to converse freely and
idiomatically in his special fields? _____
- Checked that he speaks and sounds like and
educated native speaker in all that he says? _____
- Checked how he handles unknown situations and
topics? _____

APPENDIX I

Student-Generated Web Examples

