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**THE EFFECT OF SITUATIONAL CONTEXT ON THE READING
STRATEGIES OF LEARNING DISABLED AND AVERAGE ACHIEVING
STUDENTS**

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THE EFFECT OF SITUATIONAL CONTEXT ON THE
READING STRATEGIES OF LEARNING DISABLED
AND AVERAGE ACHIEVING STUDENTS

by

Dorothy Filip

A Dissertation Submitted to the Faculty of the
DEPARTMENT OF SPECIAL EDUCATION
In Partial Fulfillment of the Requirements
For the Degree of
DOCTOR OF EDUCATION
In the Graduate College
THE UNIVERSITY OF ARIZONA

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THE UNIVERSITY OF ARIZONA
GRADUATE COLLEGE

As members of the Final Examination Committee, we certify that we have read
the dissertation prepared by Dorothy Filip

entitled THE EFFECT OF SITUATIONAL CONTEXT ON THE
READING STRATEGIES OF LEARNING DISABLED
AND AVERAGE ACHIEVING STUDENTS

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Final approval and acceptance of this dissertation is contingent upon the
candidate's submission of the final copy of the dissertation to the Graduate
College.

I hereby certify that I have read this dissertation prepared under my
direction and recommend that it be accepted as fulfilling the dissertation
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Darby Filip

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ABSTRACT

An emerging theory of learning disabilities characterizes learning disabled students as inactive learners who do not spontaneously employ task-appropriate cognitive strategies. This study addressed the range of tasks to which this characterization applies. It compared learning disabled and average achieving students' spontaneous activation of differential reading strategies as evoked by the situational context of reading tasks.

Subjects were 20 learning disabled and 20 average achieving seventh graders. Groups were controlled for age and non-verbal intelligence. Learning disabled students had been diagnosed as such and exhibited serious reading difficulties.

Within two experimentally induced situational contexts, students read and retold short, narrative passages which contained interpropositional inconsistencies. Within a storytelling context, designed to maximize interaction between text and background knowledge, subjects were instructed to think about the appropriateness of the passage for young children and imagine a first-grade audience while accurately retelling the passage. Within a memory context, designed to maximize differentiation of text from background knowledge, the same subjects were to read and retell another story for the sole purpose of maintaining accuracy. Stories were counterbalanced across contexts.

Retellings were categorized as either evidencing distortions which resolved text inconsistencies or as accurately maintaining the inconsistencies of the original text. Nonparametric tests were used for data analysis. Results indicated that both groups shifted retell strategy in response to situational context, with no significant differences between groups. Within the storytelling context, retellings tended to resolve passage inconsistencies. Within the memory context, retellings were generally accurate in their maintenance of inconsistencies. The memory context also fostered increased accuracy for both groups on a sentence recognition task. Responses to comprehension monitoring questions suggested no relationship between retell strategy and students' expressed awareness of text inconsistency.

Findings indicate that both learning disabled and average students respond to situational contexts of reading tasks. They can activate increased interaction between text and background knowledge or increased differentiation of text from background knowledge. It was concluded that the characterization of learning disabled students as cognitively inactive does not apply to the spontaneous activation of differential reading strategies evoked by the situational context of the reading act.

CHAPTER 1

INTRODUCTION

A recent conceptualization of learning disabled students is that of inactive learners (Torgesen, 1977b, Wong, 1979b). Research suggests that learning disabled students, particularly those with deficits in reading achievement, fail to spontaneously activate task appropriate learning strategies. These failures do not necessarily indicate ability deficits in psychological processes. With minimal cueing or structuring of the learning task, many learning disabled students overcame their production deficiencies.

Investigations into learning disabled students' activation of task strategies have focused exclusively on strategies which facilitate accurate reproduction of stimuli. However, recent research in cognitive psychology and reading has brought attention to the constructive aspects of discourse processing as evidenced by good readers. Good readers activate appropriate control schemata for various task demands. As a result, they produce accurate recalls under certain predictable conditions which call for maximal differentiation of background knowledge from text. However, inaccurate recall is the norm under other predictable conditions. When readers maximize their interaction with text in response to certain instructions or personal goals, they process text selectively. In recall, they distort text content, omit seemingly

inconsistent information, and intrude extra-textual information. Investigators in the area of discourse memory have suggested that despite the resulting distortions, maximal interaction with text is more conducive to concept learning than is the differentiation of text from background knowledge.

This study proposes to investigate whether learning disabled students, as compared to average achieving students, spontaneously activate strategies for maximal interaction with text as well as strategies for maximal differentiation of text from background knowledge.

Background of the Problem

The background of the problem involves two areas of study: a) conceptualizations of learning disability as involving failure to spontaneously employ appropriate memory strategies, and b) conceptualizations of discourse memory as involving interactions between text, readers' background knowledge, and situational context of the reading act.

Learning Disability

One recent conceptualization of learning disabled students shows them as "inactive learners" who do not spontaneously employ efficient and organized strategies for intentional learning (Torgesen, 1977b; Wong, 1979b). Research which supports this view will be discussed below.

Torgesen and Goldman (1977) examined the hypothesis that short term memory deficits in poor readers may be due to failure to use

efficient task strategies on some memory tasks. Their study involved 32 second grade reading disabled children and normal children. General verbal intelligence of the two groups was controlled by use of the vocabulary subtest of the Wechsler Intelligence Scale for Children-Revised (WISC-R). Normal readers were those who performed at a mean reading grade level of 2.83 on the Scott, Foresman graded reading series. Mean reading grade level of poor readers was 1.97. The children were asked to point to pictures in the same sequence in which the examiner pointed to them. During a 15 second interval before recall, the children were observed for signs of rehearsal such as lip movement or whispering. Results showed that the reading disabled children rehearsed less and recalled less than the normal controls. Yet when the children were later required to name the pictures both during presentation and recall, performance of normal and poor readers was not significantly different. The initial performance problem of the reading disabled children seemed to result from failure to spontaneously employ efficient rehearsal strategies.

Similar conclusions were drawn from an experiment involving fourth grade normal and poor readers (Torgesen, 1977a). All 40 children had intelligence within the average range as measured by four subtests of the WISC-R. Poor readers were children who scored at least one year below grade level on the Wide Range Achievement Test and were named by teachers as having reading problems. Normal readers were reading at or above grade level. The children were shown and then asked to recall 24 pictures of common objects. During a two minute study period, the

normal readers were more apt to verbalize and to categorize the pictures by repositioning them. During the recall period, the normal readers named significantly more pictures. In a subsequent training session, the children were taught to prepare for recall by categorizing the pictures and by using a self-testing procedure. When the recall test was repeated, recall differences between the normal and poor readers were eliminated.

These fourth grade disabled readers also performed inefficiently in a task which required them to study a fixed horizontal array of pictures. During a one and one-half minute study period, the normal and disabled readers pressed buttons corresponding to the pictures in order to view them one at a time. The normal readers' superior recall was associated with more verbalization of the picture names, more "chunking" and more rehearsal during the study period. Subjects were later taught and were given practice in a cumulative rehearsal strategy. When the test task was then repeated, there was no significant difference in recall between the two groups.

Torgesen, Murphy, and Ivey (1979) later replicated the portion of Torgesen's (1977a) experiment that involved the picture categorizing task. Thirty-eight subjects were chosen from a different geographical region, using criteria similar to that of the earlier experiment. As in the earlier experiment, subjects were presented with 24 pictures and were told they could move the pictures around on a board while studying for a recall test. When asked to recall the pictures, the poor readers recalled significantly fewer items than did the normal readers.

The follow-up session of this experiment differed from that of the Torgesen (1977a) study in that subjects were simply told to see how many stacks of cards they could sort in three minutes. Although a recall test followed, subjects were not told prior to the sorting that they would be required to recall the pictures. The purpose of using this procedure rather than a pre-recall training session was to eliminate any consistent differences between groups due to how the material was processed in anticipation of recall. Observations during this sorting activity indicated no verbal labeling or rehearsal. The results of the recall that followed the sorting task yielded no significant differences between groups, with reading disabled children actually recalling slightly more items than the normal children. Torgesen et al. (1979) concluded that memory performance of some reading disabled children is limited by their failure to spontaneously activate the strategy of encoding stimuli in terms of their categorical structure.

Wong (1980) studied spontaneous use of another memory strategy among learning disabled and good readers, that of comprehension of implied relationships. Subjects were second and sixth grade good readers and poor readers who had been identified as learning disabled. All 128 subjects achieved average scores on four performance subtests of the WISC-R. Learning disabled students scored at least one year below grade placement on the Gates McGinitie Reading Tests, while good readers scored slightly more than one year above grade placement.

Half the subjects had sentences read to them which contained explicitly stated consequences. The other half received sentences

with the consequence left implicit. An example of an implicit sentence was, "My brother fell down on the playground and skinned his knee." Given noun (playground) and consequence cues (and skinned his knee) to elicit recall, good readers and learning disabled readers in the explicit condition did not differ in recall of explicit sentences. The groups in the implicit condition differed significantly, however, in that good readers recalled more implicit sentences after being given a noun and consequence cue. Wong concluded that in encoding, the learning disabled students did not spontaneously employ inferential processing strategies which would have aided recall.

Included in this research was a subsequent study using another group of 16 second grade and 16 sixth grade learning disabled children. In this study, Wong aimed to activate the learning disabled students to process implied information. After being given each sentence with a consequence left implicit, children were prompted through questions to generate inferences concerning the implied consequences. The use of the question/prompt procedure resulted in significantly better performance during a recall session conducted like that in the first experiment. The conceptualization of learning disabled children as inactive learners was upheld in relation to tasks requiring retention of implied relationships.

Another task which was used to test the inactive learner hypothesis involved the retention of main ideas in listening/reading (Wong, 1979a). Half of the 60 fifth grade subjects who participated in the study had been identified as learning disabled. They were reportedly

reading one or more years below grade level and showed adequate intelligence as measured by the performance scale of the WISC-R. The other subjects showed consistently average academic performance.

Subjects were given a story to listen to while following the written text. For half of each group, the story was interspersed with questions concerning the most thematically important material to be encountered. The other half of each group received the story with no questions. After the story, all students wrote free recalls. The recalls were scored according to the number of thematically important units recalled.

In the no-question condition, learning disabled students recalled fewer thematically important units than average achieving students. But when questions were provided, differences in recall between groups disappeared. Questions significantly improved the recall of the learning disabled students. However, the question condition had no significant effect on improving average readers' recall of thematically superordinate units. While the average readers were cognitively active regardless of prompting, the learning disabled students were cognitively inactive in regard to this reading comprehension strategy until they were prompted.

The above studies suggest that some performance deficits exhibited by learning disabled children are due to failure to apply efficient task strategies. In literature on memory development, this phenomenon has been termed a production deficiency (Flavell, 1970). In other words, students have access to effective cognitive strategies but fail

to spontaneously employ them. This notion of a production deficiency in learning disabled students gives new perspective to the long-standing hypothesis that learning disabled children have specific ability deficits in basic psychological processes (Lerner, 1981). The inactive learner framework calls for a distinction to be made between deficits in basic abilities and deficits in performance caused by failure to apply efficiently those abilities which are present (Torgesen, 1977b). In the above studies, children failed to spontaneously employ strategies of rehearsal, labeling, categorizing, inferencing, or noting main ideas. When asked to perform memory tasks without specific instruction or without built-in activating structure, the learning disabled children tended to fit the conceptualization of inactive learner. When tasks were structured to induce employment of strategies, learning disabled children's performance improved significantly.

Discourse Memory

It is only in recent years that a significant amount of research has been conducted to examine memory for text. However, as early as 1932, Bartlett produced a pioneering series of investigations into discourse memory. He used two innovative methods, serial reproduction and repeated reproduction, to examine differences between a text and subjects' recall of that text. In serial reproduction, adult subjects read a passage twice and then after a 15 to 30 minute delay, wrote a free recall. Another subject then read the first subject's recall and wrote a recall of his own which was then read and recalled by the next subject, and so on. Repeated reproduction involved having the subject read a

passage and then write a free recall after a 15 minute delay. Subjects again wrote recalls at intervals of days and even years after the initial reading. In experiments using either method, the passages were often folk tales from cultures and settings that were very unfamiliar to Bartlett's subjects. Such materials were chosen because they seemed to allow for increased observability of the interaction between the text and the reader's background knowledge.

Through the use of both methods, Bartlett found that there was considerable interaction between subjects' background knowledge and the text. The recalls written by his subjects were condensed, rationalized, and conventionalized versions of the original material. Bartlett (1932, p. 205) concluded that memory for discourse was "far more decisively an affair of construction rather than one of mere reproduction." Bartlett (1932, p. 201) somewhat reluctantly adopted the term "schema" to convey the concept of the "active organization of past reactions or of past experiences," which interacted with the text and which accounted for the distortion of original text in recall.

The term "schema" was not new in Bartlett's time. It appeared as early as 1787 in the work of the German philosopher, Immanuel Kant. In the 1920's and 1930's, the term was used with similar but slightly varying meanings by workers in the fields of neurology, gestalt psychology, child development, and problem solving (Hayes, 1979; Thorndyke and Yekovich, 1980). Yet it was research of the 1970's in the areas of artificial intelligence and linguistics that set the climate for the rediscovery and acclamation of Bartlett's work (Bos, 1979). His

constructive approach to discourse comprehension and memory contributed to the view that is currently termed schema theory. In its current usage, schema theory describes a variety of related models of language understanding, reading comprehension, and discourse memory (Adams and Collins, 1979; Rumelhart, 1977). Thorndyke and Yekovich (1980, p. 23) synthesized the prevalent interpretation of memory schema as "a structured cluster of knowledge that represents a particular concept."

The main thrust of schema theory in the study of reading has been to attribute a more central role to the reader and a less central role to the text being read (Pearson, 1978). Readers do not simply transfer words from text to their own brains. Instead they construct a meaning which is based on the interactions among their own background knowledge (schema), and (a) the semantic content of the text, (b) the structure of the text, and (c) the context of the reading act. The following discussion will focus on these factors in their relationship to comprehension and memory for connected text.

Background Knowledge and Semantic Content of Text. Trabasso and Nicholas (1977) illustrate how a reader's background knowledge of the semantic content of text directs understanding of the text. They offer three pairs of sentences:

1. Mary had a little lamb. Its fleece was white as snow.
2. Mary had a little lamb. She spilled gravy and mint jelly on her dress.
3. Mary had a little lamb. The delivery was a difficult one and afterwards the vet needed a drink.

In these sentences, "Mary" can be understood to be a nursery rhyme character, a little girl, or a female sheep. "Had" can be understood to mean continuing ownership, eating dinner, or giving birth. Background knowledge must be called into relationship with the given text so that inferences could be made, thereby rendering the text understandable.

Research into the influence of background knowledge on comprehension and memory for discourse has been conducted using two paradigms. One paradigm involved adding or withholding text-related material within the experimental task. This material, when added to text or to the experimental situation, provided enhancement of subjects' background knowledge in the form of contextual information. The other paradigm involved the use of subjects whose life experiences and interests provided the background knowledge which impacted on the experimental task.

An example of the first paradigm is presented in a study by Dooling and Lachman (1971). Using two vague and uninterpretable texts, they found that providing disambiguating titles enhanced readers' ratings of comprehensibility and increased their recall. Bransford and Johnson (1972) used another ambiguous text which was later dubbed the "Modern Day Romeo" passage (Anderson, 1977). Prior to listening to this paragraph, the background knowledge of some high school subjects was fortified by exposure to a picture which showed the concrete objects discussed in the paragraph and the relations among these objects. This background information significantly increased the comprehensibility rating and recalls of these subjects as compared to subjects who

received no picture, a picture of the objects without appropriate relations among them, or a picture provided after text presentation.

Schallert (1976) used text which was comprehensible but which lent itself to two plausible interpretations. Readers were given a biasing title such as "Worries of a Baseball Team Manager" or "Worries of a Glassware Factory Manager" to accompany the passages to be read. The results of this experiment indicated that background information in the form of titles constrained readers' interpretation of text. Sulin and Dooling (1974) included either famous or fictitious names in biographical passages that were open to several interpretations. They found that background knowledge of the famous persons caused intrusions and elaborations in readers' comprehension and memory of the text.

While background information presented after ambiguous text does not aid comprehensibility (Bransford and Johnson, 1972), post-reading background information was shown to alter readers' recall of comprehensible text. Social psychologists Snyder and Uranowitz (1978) had subjects read an extensive case history. Just before a recognition test one week later, two groups of subjects were given varying additional information concerning the present lifestyle of the character they read about. Results of the recognition test showed that subjects' memory of events in the text was distorted in the direction of predicting the present lifestyle. Moreover, during the memory test, subjects claimed that they expected the final outcome at the time of reading the case study a week earlier.

Brown et al. (1977) conducted two experiments designed to investigate children's use of background knowledge in their discourse comprehension. In one experiment, third, fifth, and seventh graders listened to a passage concerning an escape. Half the children were told the passage was about a convict while the others were told the passage was about Galen, the chimpanzee hero of the then popular "Planet of the Apes" television series. After presentation of the passage, subjects were given a recognition task consisting of questions either congruent or incongruent with the given thematic orientation. In the second experiment reported by Brown et al., groups of second, fourth, and sixth graders received orientations of the Targa people as either Eskimo or desert Indian people. Other groups received an orientation about an unrelated people. A week later, the children listened to a culturally nonspecific passage about a young man of the Targa tribe engaged in a hunt. The data for this experiment consisted of free recall and probe responses. The striking result of both experiments was the absence of developmental trends in the influence of background knowledge on recognition and recall of discourse. The children behaved like adults in that they used experimentally provided background information to disambiguate and embellish text.

The studies described thus far investigated the influence of background knowledge that was experimentally provided in the form of titles, pictures, text intrusions or thematic orientations. Another paradigm for studying the influence of background knowledge involved the use of groups of subjects who came to the experiment with

differing backgrounds that might have some bearing on the experimental text. Anderson et al. (1977), using such a technique, produced comprehensible but polysemous passages. One passage was more frequently perceived as being about a group of people gathering to play cards and less commonly perceived as being about a group of musicians meeting to rehearse. The passage was given to a group of college students who were majoring in music education and to a control group. In contrast to the control subjects, music majors generally gave the less likely interpretation of the text as a musical rehearsal. Similarly, a paragraph usually interpreted as being about an escaping convict was more often interpreted by physical education majors as an account of a wrestling match.

High school students have also been seen to read and recall text in light of their background knowledge. Schallert (1980) reported an unpublished study in which text was constructed to contain an unambiguous story line placed in a nonspecific setting that could plausibly be interpreted as a Passover celebration. Subjects from a Hebrew school and subjects from a Catholic school were given the text to read. Data from recalls and inference rating tasks indicated that students who had a highly developed background knowledge of Passover celebrations used this knowledge to interpret and recall details that were not specified in the story.

The studies discussed in this section support a constructive approach to discourse comprehension. These investigations indicate that background knowledge can (a) allow construction of meaning in

text that would otherwise seem nonsensical; (b) cause extra-textual intrusions and elaborations in readers' comprehension and memory of text; and (c) bias or constrain readers' interpretation of text. As argued by Bransford, Barclay, and Franks (1972, p. 207), "The constructive approach argues against the tacit assumption that sentences 'carry meaning.' People carry meanings, and linguistic inputs merely act as cues which people can use to recreate and modify their previous knowledge of the world."

Background Knowledge and Text Structure. The previous section of this discussion, while focusing on the role of background knowledge in comprehension, necessarily dealt with the interactions between background knowledge and the semantic content of text. As suggested by Schallert (1980), it may be useful to distinguish between schemata for concepts and schemata for the structure of text. This section will focus on the structure and organization of text as it interacts with readers' background knowledge and influences comprehension and memory. The discussion will be limited to story type text, due to its relevance to the present study.

Readers use their knowledge of the organization and structure of stories to facilitate their comprehension and recall. Several researchers have constructed "story grammars" which describe the structural basis of story comprehension (Kintsch and van Dijk, 1975; Mandler and Johnson, 1977; Rumelhart, 1975; Stein and Glenn, 1978; Thorndyke, 1977). For instance, Mandler and Johnson describe basic story nodes such as setting, beginning, development, and ending. The underlying

hypothesis is that a story grammar reflects readers' schema for generic characteristics of stories. When a story is structured to match readers' background knowledge and expectations of story structure, the story is more easily understood and remembered.

Several researchers have investigated the psychological validity of story schema. Mandler and Johnson (1977) had first graders, fourth graders, and adults listen to simple stories and recall them. The ordering of retellings across age groups indicated that even young children have schemata for stories which facilitate their recall. It was also found that first graders more readily recalled settings, beginnings, and outcomes in comparison to attempts, endings, and reactions. Adults behaved in a similar pattern with recall of endings and reactions lagging behind recall of other story elements.

A number of investigations into story schema employed stories which were structurally violated (Kintsch, Mandel, and Kozminsky, 1977; Mandler, 1978; Stein and Nezworski, 1978) or structurally unfamiliar to subjects due to cultural differences (Kintsch and Greene, 1978; Kintsch and van Dijk, 1975). Data derived from subject recalls or summaries support the notion of a culture-specific story schema which interacts with text and influences recall. Stories which conform to an ideal structure are more quickly and accurately recalled and summarized.

Thorndyke (1977) studied the effect on adult subjects' recall of varying the degree of plot structure in stories when semantic content remained stable. He found that rated comprehensibility and recall were highly predictable based on the amount of plot structure in the stories.

Further, Thorndyke found that repetition of story structure across two passages aided recall of the second passage. Repeating story content across two stories with varied structures produced proactive interference. His results suggest the importance of considering the role of both story structure and content in discourse memory. Both elements interact with readers' schemata and serve to facilitate or inhibit recall.

Arguing that readers' story schema may not be adequately represented by recall tasks, Whaley (1981) studied young readers' story schema through tasks that were free of text recall requirements. She devised a prediction task and a macro-cloze task to accompany the reading of structurally incomplete stories. Readers were asked to tell what should or could happen next in unfinished stories or to fill in missing portions of stories. Subjects were third, sixth, and eleventh graders. Results showed that readers expected particular structural elements in stories and that these expectations did not differ across ages. Although younger children employed structural expectations less frequently, students at each grade level used story schema as a set of expectations for story structure.

The research presented in this discussion supports the notion of a story schema as a set of expectations concerning the form of a story. Stories which conform to readers' structural expectations are more comprehensible and are more completely recalled. This concept of story schema as a set of expectations for stories raises questions about how any story can be both memorable and at the same time

interesting. One knows intuitively that predictable stories that precisely match readers' expectations would be uninteresting and would fail to satisfy most readers' purposes for reading stories. Kintsch (1980) posits that while a completely predictable paragraph would receive a very low interest rating, an entirely unpredictable passage which generates no expectations would also be uninteresting. Interest peaks somewhere between these two conditions when conflicting expectations are aroused in the reader. Another factor related to interest, according to Kintsch, is the postdictability of text. Totally unexpected events in a text can be considered interesting if the reader can "look back and explain to himself how it all fits together" (Kintsch, 1980, p. 90). In this light, postdiction is at least as crucial to story interest as prediction.

Background Knowledge and Context of the Reading Act. From the discussion thus far of the interactions among readers' background knowledge and text content and text structure, it might appear that readers' background knowledge has a relatively static and inflexible effect on comprehension and recall. It has been found, however, that reading comprehension is controlled by multiple, higher-level schemata chosen by the reader in response to the context of the reading act. Research which supports this concept will be discussed in this section. Context will be viewed as deriving from such factors as instructions given to readers and readers' purposes or emotional states while reading and recalling text. While several researchers have demonstrated that comprehension can be manipulated by instructions which alter readers'

"depth of processing" (Craik and Lockhart, 1972; Schallert, 1976), this section will be limited to research in which situational contexts were manipulated only at the semantic processing level, wherein subjects were engaged in deriving meaning from text.

Spiro (1977) found that semantic memory for discourse is influenced by the conditions surrounding the reading of a text. In one experiment, he provided conditions which allowed prediction of either inaccurate recall or accurate recall. One group of college students was told it was taking part in an experiment concerning the students' own reactions to a situation involving interpersonal relationships. Students were asked to read a text about an engaged couple who disagreed about having children. According to Spiro, the prior instructions to consider personal reactions encouraged a high degree of interaction between text and readers' background knowledge. When later asked to accurately retell the story, the students produced gross distortions of the original text. Subjects in another group were told they were participating in a memory experiment and were asked to read the same story about the engaged couple. Students in this "memory experiment" condition differentiated the story information from background knowledge and produced accurate recalls. Spiro's experiment suggests that college students, who are presumably good readers, have the capacity to react to the context of the reading situation. They can read text either with a high degree of schema activation or with maximal differentiation of text from existent schema. In other words, readers have schemata for differing reading tasks. Knowledge of task demands influence the degree to which content schema and structure schema will be activated.

Mosenthal (1979) found that even third and sixth grade children consistently react to the social context surrounding the reading situation. He devised an informal experimental condition in which third and sixth grade readers were taken to a first grade class. There each child read a contradictory story, wrote a retelling, and answered questions. The written product was then to be read to a first grader. This informal condition somewhat parallels Spiro's "personal reactions" condition designed to maximize content schema activation. Mosenthal assigned other groups of third and sixth graders to a formal condition where subjects were individually instructed to read a story, write a recall, and answer questions for the experimenter only. Although the paucity of related research made it difficult to explain specific outcomes, it was shown that both groups shifted their strategies for resolving story anomaly in response to formal versus informal conditions.

The studies by Spiro (1977) and Mosenthal (1979) contrasted the effects of memory versus nonmemory conditions in task-induced reading situations. Graesser et al. (1978) compared the recall of task-induced reading under memory conditions with recall from self-induced or free-reading conditions. In the self-induced reading condition, unprompted college students spontaneously read articles from a National Enquirer news magazine which was strategically placed in a waiting room. For the task-induced condition, the same subjects were later told to read similar articles for a test on their contents. Questionnaire responses related to the reading done under the two conditions showed biases on the type of information recalled under self-induced reading. This

bias, which was in favor of active (why and how) information over static (who, what, when, where) information, diminished under task-induced memory conditions.

Differing from research which used the memory versus nonmemory paradigm, other experiments manipulated reading contexts in relation to readers' point of view. For instance, Pichert and Anderson (1977) constructed a text about a boy bringing a friend home after school and giving him a tour of his house. One group of subjects was told to read from the perspective of a potential home buyer. Other groups read from the perspective of a prospective burglar or from no particular perspective. The perspective-taking instructions created the situational contexts of the reading act. Recall data showed that readers recalled more information that was relevant to their adopted perspective. Readers' schema for the interests of homebuyers or of burglars influenced the selective processing of the text.

The context of the reading act which influences text recall may also be derived from the readers' emotional mood at the time of reading (Bower, 1978). Through post-hypnotic suggestion Bower had subjects become either intensely happy or intensely sad as they read. The reading material consisted of an account of two men meeting to play tennis. One of these characters was described as very happy while the other was very depressed. Subjects' responses to a questionnaire showed that subjects identified with the character who reflected their mood as they read. On a recall test, subjects also recalled more facts about this character.

In summary, comprehension and recall of text arises from the interplay between text content, text structure, the context of the reading situation, and readers' background knowledge of each of these factors. Knowledge of text content allows the formation of inferences which make text comprehensible. This background knowledge can also cause distortions and elaborations in recall, and can constrain viable interpretations of text. Knowledge of text structure fosters a set of expectations which also influence comprehension and recall. Finally, knowledge of the context of the reading act is an important factor in how text is recalled. Depending on readers' needs and purposes during reading or during recall, memorial representations of text may become enmeshed with background knowledge or may remain relatively differentiated from background knowledge.

Significance of the Study

Research has been reviewed which illustrates that discourse comprehension and recall is influenced by interactions among text and readers' schema for text content, text structure, and the content of the reading act. The reader is an active agent in his or her comprehension and recall of text, activating different comprehension strategies in response to reading needs and purposes. According to the strategy used, memory for text may be distorted in predictable ways. This tenet, derived from experiments with normal adults and children, has interesting implications for conceptualizations of learning disabled students as inactive learners.

In experiments investigating the production deficiency phenomenon, learning disabled students failed to spontaneously activate strategies to allow for accurate recall on selected tasks. Based on these and related experiments, Torgesen (1980, p. 370) suggested that "learning disabled children will do poorly on almost any task that requires information to be processed in an active, organized, or planned manner."

To date, the research on learning disabled children's active use of task-appropriate strategies has focused on veridical reproduction of isolated words, sentences, or thematic units. Situational contexts of the experimental tasks stayed within a "memory experiment" paradigm. In other words, accurate recall has been the only task demand studied and has served as the sole criterion of active processing.

As discussed earlier, research in discourse memory indicates that active processing of text does not necessarily produce accurate recall. Active processing can result in varying degrees of distortion of text in memory, depending on readers' active response to the context of the reading act.

Against the backdrop of literature in discourse memory, several questions come forward concerning the conceptualization of learning disabled students as inactive learners:

1. Are learning disabled students inactive in that they do not employ strategies for interacting with text under conditions which call for maximal interaction?

2. Are learning disabled students inactive in that they do not differentiate text from background knowledge under conditions which call for differentiation?
3. Are learning disabled students inactive in that they do not flexibly adapt reading strategies in response to changing task conditions?

Such questions address the inactivity of learning disabled students in terms of the activation of higher-level control schemata which normally respond to the context of the reading act. Such questions were addressed in the present study. They may provide future direction for investigation into the inactive learner conceptualization of learning disabled children.

Statement of the Problem

The aim of this study was to investigate whether learning disabled students differ from average achieving students in the activation of strategies which are commonly ascribed to different reading situations. The strategies under focus were those of (a) maximal interaction between text and background knowledge, versus (b) maximal differentiation of text from background knowledge. Conditions for facilitating interaction were derived from instructions to evaluate and tell a story to younger children (storytelling condition). Conditions for facilitating maximal differentiation were derived from instructions to remember and accurately retell a story to the investigator (memory condition).

The following research questions were formulated to address the aims of the study:

1. How do learning disabled students compare to average achieving students in strategies used to deal with story inconsistency under a storytelling condition?
2. How do learning disabled students compare to average achieving students in strategies used to deal with story inconsistency under a memory condition?
3. How do learning disabled students compare to average achieving students in ability to shift strategy choice in response to task conditions?

CHAPTER 2

DESIGN OF THE STUDY

The purpose of this study was to determine whether learning disabled children differ from average achieving children in choice and flexibility of strategies for reading and remembering narrative text. The strategies focused upon were interaction between text and background knowledge versus differentiation of text from background knowledge. The task that allowed observation of this interaction or differentiation between text and background knowledge was the reading and retelling of short stories which contained interpropositional inconsistencies.

The story retellings were categorized according to whether subjects (a) omitted or restructured inconsistent information, thereby indicating an interplay between text and background knowledge, or (b) maintained the text inconsistency, indicating differentiation of text from background knowledge.

Two different task conditions were provided. One was a story-telling condition, designed to foster a reading strategy of maximal interaction between text and background knowledge. The other task condition was a memory condition, designed to promote maximal differentiation of text from background knowledge. A two-group, related sample design was used, employing nonparametric tests for the treatment of the retell data.

This chapter discusses the subjects, materials, procedures, and scoring systems used in the study.

Subjects

The subjects were 20 learning disabled and 20 average achieving students. Several criteria for subject selection were employed. These criteria limited the population to which any findings could be generalized. Yet this limitation was deemed preferable to confounding of results by diverse extraneous factors.

Subject Selection Criteria

Specific subject selection criteria were set for subjects' grade placement, age, mental ability, reading achievement, and educational background. Groups were also controlled for sex.

Grade Criterion. Seventh grade was chosen as the grade placement criterion for subjects in this study. This followed consideration of several factors:

1. Previous research indicated that sixth grade readers respond to social discourse situations by maximizing the restructuring of text in recall under informal conditions (Mosenthal, 1979). In this regard, intermediate grade children have begun to show a sensitivity to story anomaly and social discourse situations by altering their recalls in a pattern similar to that of mature, good readers (Spiro, 1977).
2. To compare the recall strategies of average achieving students with those of learning disabled students of the same grade

placement and chronological age, it was necessary to locate learning disabled students who were reading significantly below grade level yet who were sufficiently skillful in decoding and comprehension to allow the reading and retelling of a short passage. Placement in at least sixth grade was necessary to satisfy this concern.

3. Use of junior high school students made data collection feasible. Because enrollments in junior high schools are larger than enrollments in elementary schools, fewer sites were required for data collection.

Age Criterion. In addition to specifying grade level, parameters were set for chronological age of subjects. Previous research suggests that the experimental task may be sensitive to developmental differences between groups (DiVesta, Hayward, and Orlando, 1979; Mosenthal, 1979). Without controls, multiple grade retentions for learning disabled students may have resulted in this group being significantly older than the average achieving group. To eliminate age as a confounding factor, the research sample was restricted to seventh graders between the ages of 12-4 and 14-0 years.

Mental Ability Criteria. Mental ability or intelligence criteria were set for both groups for several reasons:

1. It was desired that any differences in performance between learning disabled and average achieving groups be logically attributable to the primary handicapping condition in one of

the groups, that of learning disability, rather than to differences in overall mental ability.

2. Previous research which contributed to the inactive learner hypothesis was conducted with learning disabled students who demonstrated average intelligence (Torgesen, 1977a; Wong, 1979a; 1980). The use of similar intelligence criteria would facilitate comparison of findings across studies.
3. A discrepancy between achievement and ability is seen as a key characteristic of learning disabled children (Bryan and Bryan, 1978; McCarthy and McCarthy, 1969). Any such discrepancy found in the average achieving students, as in the case of superior ability and average academic achievement, would blur the focal distinction between the two experimental groups. Therefore, it was judged necessary to establish that the average achieving students showed average performance on measures of intelligence as well as on measures of academic achievement.

Scores from the Wechsler Intelligence Scale for Children-Revised (WISC-R) (Wechsler, 1974) were accepted as a reflection of students' mental ability. Scores from this test were readily available for learning disabled students. In setting specific score criteria, it was necessary to allow for the depression of some WISC-R subtest scores which would reflect a student's specific learning disability. Criteria would be less rigorous than for average achieving students yet would aim to rule out differences between groups in overall mental ability. Intelligence criteria for learning disabled students' inclusion in the study

was set as follows: either Verbal or Performance IQ score at or between 90 and 110 on the WISC-R, with the remaining score no lower than 75 or higher than 125.

The average achieving students had not been administered any intelligence tests. School officials discouraged extensive use of students' time to obtain full IQ scores solely for research purposes. To limit the amount of time required of students, but to provide assurance of average mental ability, two WISC-R subtests were given to average achieving subjects. They were the Vocabulary and Block Design subtests, chosen because of their relatively high correlation with WISC-R full scale scores (Wechsler, 1974). Specific criterion for average achieving students' inclusion in this study was a scaled score total of 17 to 23 from the Vocabulary and Block Design, with no more than a three point difference between the two scaled scores. These scaled score totals represent the extrapolated equivalent of a complete battery of ten scaled scores which, when totaled, yield IQ's of 90 to 110.

Since it was desirable to reduce the proportion of students who would be tested yet whose scores might fail to meet the stringent criterion, a screening procedure was used. Students who scored below the fourth or above the sixth stanine in their most recent standardized math achievement test were eliminated from the pool of potential subjects before the WISC-R testing. Reading achievement and educational background criteria, discussed below, were also applied before this testing.

Reading Achievement Criteria. Reading achievement criteria were set for two reasons:

1. Since the study was designed to focus on reading strategies, it followed that any results should be generalizable to learning disabled students for whom reading difficulty was a major concern.
2. Most previous research into the inactive learner characterization of learning disabled students involved students with deficits in reading achievement (Torgesen, 1977a; Torgesen and Goldman, 1977; Wong, 1979a; 1980). Limiting this study to learning disabled students with reading problems would facilitate comparison of the findings of this study with those of previous studies.

Scores on the California Achievement Test's reading subtests (CTB/McGraw-Hill, 1977) were accepted as measures of reading achievement since scores from this instrument were readily available for most students in the school district. Criteria for average achieving students was a score at fifth stanine obtained during the test's administration at the beginning of the seventh grade school year. An additional criterion, to establish individual subject reliability, was a score of fourth to sixth stanine on the same test when administered at the beginning of the average achieving students' fifth grade year.

Reading achievement criteria for learning disabled students was a score of third stanine or lower on the California Achievement Test's reading subtests, administered at the beginning of the school year. In

some cases, learning disabled students were exempted from group testing because of their teachers' concern about undue stress aroused by the group testing situation. In cases of learning disabled students who were exempted from the California Achievement Test, scores below the 23rd percentile on the Woodcock Reading Mastery Tests, Passage Comprehension subtest (Woodcock, 1973) served as evidence of a reading difficulty. An additional criterion, to enhance reliability, was that reading improvement appear as a stated goal in the students' Individual Educational Programs.

To insure at least a minimum level of reading ability, all subjects were required to achieve at least 85 percent accuracy on an informal word recognition test. The test was made up of 20 words contained in the story passages to be read and which did not appear on the Dale Easy Word List (Dale, 1931). The criterion of 85 percent accuracy was set for this test since Bridge (1977) found that word recognition scores below 85 percent were accompanied by a serious drop in estimates of reading comprehension. Finally, all subjects were to meet the criterion of retelling at least four propositions from a practice expository passage similar in length and readability to the narrative passages to be read in this study.

Educational Background Criteria. Additional criteria concerning educational background were set in order to insure that students in the two groups could be logically associated with labels of learning disability or average achievement by other interested researchers or educators. Criteria for inclusion in the average group included (a)

attendance in the same school district for the past year with no referral for suspected handicap appearing in the cumulative school records; and (b) no record of placement in remedial or corrective reading programs or adaptive education programs. Criteria for students in the learning disabled group were (a) diagnosis of learning disability reported by the multidisciplinary school evaluation team, and (b) participation in a school learning disability resource program.

Subject Selection

The students were recruited from seven junior high schools in a southwest metropolitan school district which served 55,000 students. These junior high schools showed an average span of achievement levels among their students. The ethnic backgrounds of the students in these schools were representative of the overall ethnic balance in the district.

The records of over 100 seventh graders in learning disability resource programs were reviewed. Approximately 70 percent of these records showed data which failed to meet subject selection criteria for mental ability, reading achievement, or age. Several learning disabled students who met selection criteria did not consent to participate in the study. Two students were dropped due to demonstrated word recognition difficulties. All 21 of the students remaining in the subject pool were included in the study. Data for one student were later dropped from analysis due to researcher error in administration of the experimental task which invalidated those data.

Average achieving students who met subject selection criteria were randomly chosen until equal sample sizes were achieved. Five students who met age, achievement and background criteria, were omitted from the subject pool after failure to meet the IQ score criterion.

The ratio of male to female students was approximately equal across groups, with 60 percent males in the learning disabled group and 65 percent males in the average achieving group.

Chronological ages of subjects in the two groups were subjected to a t-test. The results showed no significant difference in age between the two groups ($t = 1.869$).

As previously discussed, full scale WISC-R scores were available for learning disabled students while average achieving students had been administered only Vocabulary and Block Design subtests. The problem was to determine statistically whether the two groups differed in overall mental ability. Use of only Vocabulary or Block Design scores for learning disabled students in comparison to those scores of average achieving students would have been inappropriate. In several cases, the individual subtest score seemed to reflect a specific disability of a learning disabled student and was not indicative of the student's overall Verbal or Performance score. However, for average achieving students with no suspected area of deficit, Vocabulary and Block Design scores could reasonably be expected to predict Verbal and Performance scores respectively. Therefore, Vocabulary and Block Design scores of average achieving students were prorated to yield predicted Verbal and Performance scaled scores. These scores were compared, by t-test, to learning disabled students' obtained Verbal and Performance scores.

The two groups did not differ significantly in Performance IQ ($t = .418$). However, there was a significant difference in Verbal scores between learning disabled and average achieving groups ($t = 5.194$, $p < .001$). Although no attempt was made to recruit learning disabled students with Performance IQ relatively superior to Verbal IQ, this pattern may be representative of learning disabled students experiencing reading difficulties (Neville, 1967; Zingale and Smith, 1978).

On the California Achievement Test (CAT) reading subtests (CTB/McGraw-Hill, 1977), 12 of the learning disabled subjects scored at the third stanine. Six scored at the second stanine, and one learning disabled subject showed a first stanine score. One learning disabled student who was administered the Woodcock Reading Mastery Test (Woodcock, 1973) achieved a score at the fifth percentile in passage comprehension. As per selection criteria, all average achieving students achieved fifth stanine scores on the CAT.

Materials

Materials consisted of two narrative passages, two recognition tasks, and two comprehension monitoring questions. A preliminary word recognition test, an expository practice passage, an expository interference passage, and two word-find puzzles were also used.

Narrative Passages

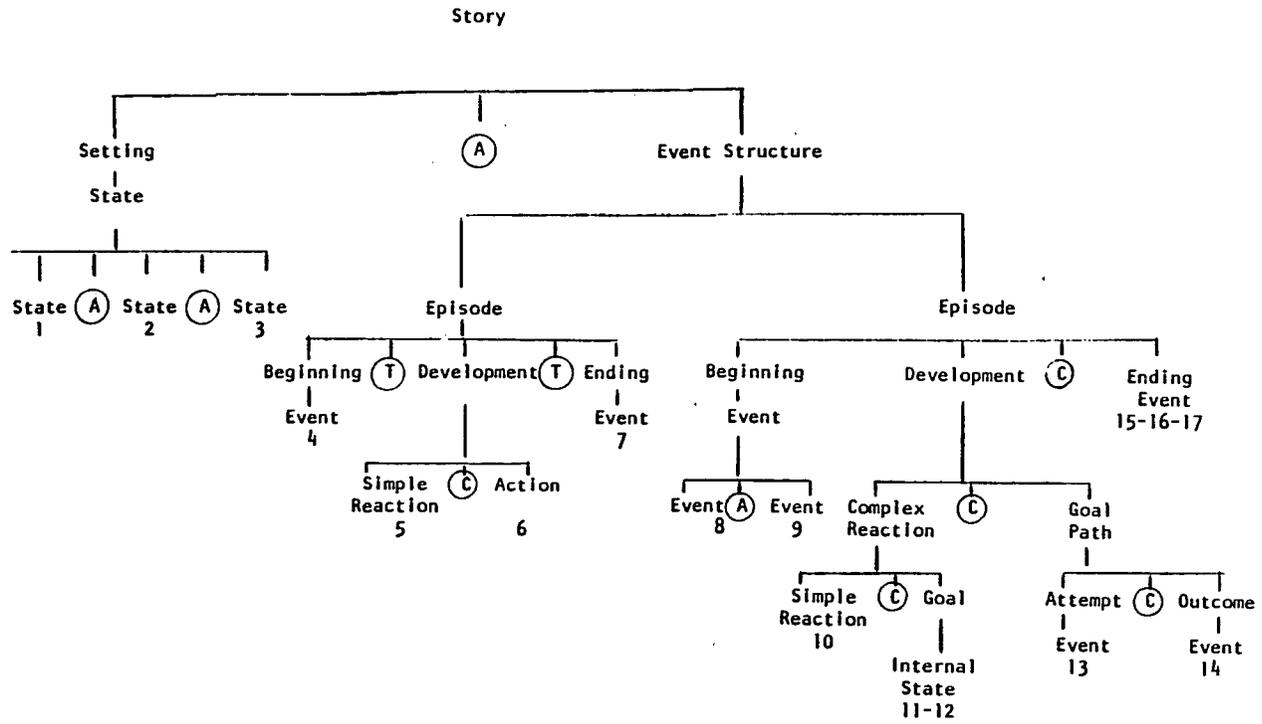
The passages which students were to read and retell in the informal storytelling condition and the formal memory condition had to meet several requirements:

1. To be optimally comprehensible and memorable, the passages had to allow for a high degree of interaction between the text and seventh graders' schema for text structure (Thorndyke, 1977). Young children have been shown to have acquired a schema for story structure which facilitates recall (Mandler and Johnson, 1977; Stein and Glenn, 1978). On the other hand, there is evidence that most ninth graders fail to use the author's textual organization to aid recall of expository text (Meyer, Brandt, and Bluth, 1978). Therefore, to reduce difficulties in recall which may be due to some students' failure to use text structure, the passages for this study were narrative and conformed to the structure of well-remembered stories.
2. To aid students' comprehension and memory of the text, there should also be a high degree of interaction between text content and students' content schema (Baker and Brown, 1980). Learning disabled students have been suspected of lacking appropriate content schemata for comprehending and recalling text (Huhn, 1980). Therefore, the content of the story passages in terms of setting, characters, and main events was designed to be easily identifiable to all subjects.
3. To facilitate recall, the passages should be short, having a limited number of related episodes. Learning disabled students' recall of text could be hampered by deficits in memory or in use of mnemonic strategies (Johnson and Myklebust, 1964; Torgesen and Houck, 1980). Therefore, the stories used in this study contained only two episodes.

4. Complexity, length, and irregularity of words and sentences in the passages should be kept to a minimum. Unless controlled, difficulty with decoding (Johnson and Myklebust, 1964) or understanding complex sentence structures (Vogel, 1975) could interfere with learning disabled students' comprehension of the passage. Therefore, readability was kept to a minimal level.
5. The passages should allow for distortions in retelling which would indicate interaction between text and readers' schemata. To do this, the passages should deviate at some point from readers' expectations (Bartlett, 1932; Mosenthal, 1979; Spiro, 1977). Several interpropositional inconsistencies were built into the stories.
6. The two passages should differ as little as possible from one another in structure, readability, and interest level. Avoidance of passage effects would allow for data to be collapsed across passages, yielding larger cell frequencies for data analysis.
7. Content and interest level should accommodate the pretext in the directions for the storytelling condition that the story is intended for first-grade listeners.

The investigator developed two passages aimed to satisfy the above requirements. The passages were identical in structure (Figure 1) as judged according to the story grammar of Mandler and Johnson (1977). One story centered around a boy in junior high school who saw his little brother involved in an argument over possession of a football (Brother

Figure 1. Tree structure for narrative passages



Story). The other story involved a boy whose horse became injured (Horse Story). The stories are presented in Appendix A.

Each story contained a setting and two episodes. Three events in the final episode comprised the ending. The stories were equal in number of sentences. Predicted readability levels as determined by the Spache (1953) readability formula were 3.1 (Brother Story) and 2.8 (Horse Story). Length of each story was about 160 words.

The setting of each story contained information describing the protagonist (sentences two and three). This information was inconsistent with actions of the protagonist in the ending of the final episode (sentences 15 through 17). For instance, in one story, Jim was in junior high school and was a very brave boy. Yet in the ending he became afraid of a boy who was bullying his little brother, didn't want to get hurt, and left the scene forgetting about his little brother's problem. In the other story, Bob was a good runner and won many long running races. Yet in the ending he got tired of running (to get a doctor for his injured horse), didn't like to run very far, and sat down to rest forgetting about his horse.

Details in the episodes of the stories allowed for inferences which contributed to the story anomalies. One story included reference to the antagonist as a fifth grader, presumably younger and smaller than brave, seventh grade Jim. The Horse Story provided information that the doctor who was needed to help the injured horse lived a short way down the road, a distance which presumably could be negotiated by a good long distance runner.

A panel of ten graduate students was asked to read the stories and answer the question, "Did you feel there was anything in the story that was inconsistent with other parts of the story?" All ten judges detected the presence of inconsistency in both stories.

While the stories were nearly identical in length, structure, and readability, inevitable differences in the content of the two stories remained as a potential source of passage effects in recall or in recognition. A particularly salient difference occurs in the semantic integrity of the stories' settings. In the Horse Story, there is considerable semantic distance between being a good long distance runner and being one who takes good care of a horse. To some readers, the setting of the Horse Story may seem to abruptly switch topics from running to horses. This situation does not occur to the same extent in the Brother Story. Intuitively, being older and brave bears a closer semantic relationship to being one who would take care of a little brother. Differences in semantic integrity may have fostered differences in the memorability of the two stories.

Each story was presented to subjects in a booklet which measured 5 1/2 inches by 8 1/2 inches. The story was divided among four pages as follows: page 1, setting; page 2, first episode; page 3, beginning and development of the second episode; page 4, ending. Baker and Anderson (1981) found that some mature readers who encountered text inconsistencies looked back at material preceding the inconsistency. This strategy may influence the accuracy of encoding during reading (Alessi, Anderson, and Goetz, 1979) and may be differentially employed by good and poor

readers (DiVesta et al., 1979). It was preferable to avoid confounding the results of this study with possible group differences in use of lookback strategies. Therefore, the booklet and accompanying oral instructions were designed to allow some natural regression during reading, yet restrict students from referring back to earlier parts of the story once the contradictory ending was reached.

Recognition Task

A recognition task based on each story was designed by the investigator to provide supplementary information concerning subjects' memorial representation of the text. Responses to this task could indicate whether subjects distorted their retellings to conform to their proposed listeners' story schemata but maintained accuracy in their own memory of the text. Further, these data could indicate whether omissions in retelling were a result of strategies for resolving anomaly or whether omissions were due to subjects' perceptions of some key propositions as unimportant. Thorndyke and Yekovich (1980, p. 36) posit that, "although propositional importance predicts recall, all propositions are recognized equally well."

Three statements from the story settings and three statements from the endings were presented, paired with sentences of opposing semantic impact. For example, "Bob was a good runner," was listed across the page from "Bob was a poor runner." Two distractor sentences, one from within an episode, and one not contained in the story, were also included in each recognition task.

Subjects were asked to read each pair of sentences silently while the investigator read them aloud and to decide if either one of the sentences or if neither one appeared in the original story. Subjects indicated their choice by marking an X on a designated line on their papers. The recognition task for each story appears in Appendix B.

Comprehension Monitoring Questions

Two comprehension monitoring questions were designed to give information concerning students' awareness of the passage inconsistencies, since such awareness may not be expressed in students' retellings (Bos and Filip, in press; Markman, 1979). The questions, given orally by the investigator, were (a) Was there anything that didn't make sense in this story? and (b) Do you think this would be a good story for first graders? If the response to the first question was positive, the subject was asked to explain what didn't make sense. Subjects were also asked to explain their responses to the second question.

Word Recognition Test and Practice Passage

The purpose of the word recognition test was to provide assurance that subjects' story comprehension would not be hampered by difficulties in word recognition. The test (Appendix C) was made up of 20 words contained in the narrative passages to be read which did not appear on the Dale Easy Word List (Dale, 1931).

The practice passage served to assure that students had the reading comprehension ability and the verbal expressive ability to

read and retell a passage. An expository passage was used to avoid interference with the story structure of the passages used in the two experimental conditions. Thorndyke (1977) found that repetition of story structure across two passages could affect recall of the second passage.

The 170 word practice text consisted of three paragraphs. The first paragraph introduced facts about mopeds, the second discussed their safety, and the third paragraph discussed the ease of riding a moped. The passage was adapted from the article entitled, "The Mopeds Are Coming," in Scholastic Action (1977), a low readability magazine designed for intermediate age students (Appendix D).

Interference Passage

The purpose of the interference passage was to interfere with the effect of the repeated story structure of the two narrative passages (Thorndyke, 1977). The interference passage was an 86 word expository text which discussed the shortage of edible fish and suggested that people eat shark. The passage (Appendix E) was adapted from the article, "Man Eating Shark?" in Know Your World (Xerox, 1974), a low readability weekly newspaper for intermediate grade students.

Word Find Puzzles

A short, unrelated, verbal task was used as a buffer between the reading and retelling of each of the narrative passages. The purpose of such a task was to interfere with the subjects' short term surface structure memory of the text. Kintsch (1974) found that 20

minutes of reading unrelated material effectively interfered with memory for surface features of text and forced adult subjects to rely on memory for meaning. Subsequent researchers, working with children, used unrelated passages which required much less reading time (Bridge, 1977; Tierney, Bridge, and Cera, 1978-1979).

The use of reading as an interference task in this study may have caused undue stress and anxiety for the poor reading, learning disabled students. Therefore, a verbal task couched in a puzzle format was chosen. Subjects were given a word find puzzle adapted from Gerger and Doherty (1973), which consisted of a block of approximately 200 letters of the alphabet. The block of letters was accompanied by a list of words categorized as fruits for one puzzle, or objects found in a kitchen for the second puzzle. All subjects were familiar with the task which involved locating and circling sequences of letters which formed any of the words in the list.

Procedure

The investigator met with each subject individually three times. The first session included the word recognition test and practice passage retelling for each potential subject. Average achieving students also received the Vocabulary and Block Design subtests of the WISC-R. Students whose performance met subject selection criteria then participated in the study for two further sessions. The second session comprised a storytelling condition and the third comprised a memory condition.

Storytelling Condition

Within one month following the initial meeting with the experimenter, each student who satisfied all criteria for inclusion in the study met with the investigator individually in a quiet room for the storytelling condition. As in previous research (Mosenthal, 1979), subjects were always given the storytelling condition before the memory condition. This was to avoid the possible confounding that could occur if subjects were overly suspect that they would be asked to produce a complete retelling. The storytelling condition was designed to facilitate a high degree of interaction between the text and students' background knowledge of story structure and story content.

The students were told, "I am going to give you a booklet that has a short story written in it. There are four pages. Read it to yourself and take as much time as you want. But once you turn a page, don't go back. As you read, think about whether this would be a good story for first graders. Think about whether they would enjoy hearing someone tell this story. Do you understand? Your purpose is to see if this would be a good story for first graders. Go ahead."

Half of the seventh graders from each group read the Horse Story and half read the Brother Story. After reading, five minutes were spent while the student worked on a word find puzzle.

Each student was then shown a photograph of a small group of first graders situated in a first-grade classroom. The investigator gave the directions, "Remember that we were thinking about whether this would be a good story to tell to first graders. Here is a picture of a

group of first graders that you can look at to help you think about children this age. When I turn on the tape, tell the story as if you were telling it to these children. Tell the story exactly as it was written and in a way that would be interesting to them." The entire retelling was taped.

After the retelling, students were asked to complete the recognition task based on sentences in the story they had read. The investigator read the directions and each item aloud as the student followed along and marked his or her paper. The two comprehension monitoring questions were then asked orally. The investigator wrote down subjects' oral responses to these questions.

Memory Condition

Two weeks after the storytelling condition, the same students participated in the memory condition. The memory condition was designed to promote a high degree of differentiation of text and students' background knowledge of story structure and story content. Students met individually with the investigator and were told, "Here is a booklet that has an article and a story in it. First read only the article on the first page. The purpose is to remember exactly what you read." Students read the 86 word expository passage about fish which was to serve as interference for the contradictory story encountered in the previous session with the investigator. After retelling the passage, students were praised for accuracy of recall.

Students were then told, "Next in your booklet is a short story. There are four pages. Read it to yourself and take as much time as you

want. But once you turn a page, don't go back. As you read, remember the story exactly. Your purpose is to remember exactly what is written in the story. Do you understand? Remember it exactly. Go ahead."

After students indicated that they completed the reading, they were asked to spend five minutes working on a word find puzzle. The experimenter then said, "When I turn on the tape, tell everything that was in the story. Tell the story exactly as it was written." These retellings were also taped. The recognition task and comprehension monitoring questions followed the retelling.

Scoring the Data

The principal data consisted of subjects' story retellings under the two task conditions. Supplementary data consisted of subjects' responses to (a) the recognition task, and (b) the comprehension monitoring questions. This section will discuss the scoring of each type of data.

Story Retellings

The objective of scoring the story retellings was to determine whether the two groups of students differed as to the strategies they used for remembering and retelling the contradictory stories. Based on research by Spiro (1977), it was hypothesized that average achieving students, given conditions with facilitated interaction between the text and background knowledge (storytelling condition) would distort the text in retelling. The distortions would give the retellings some degree of internal consistency which conformed to students' prior knowledge of

story content. On the other hand, given conditions which promoted differentiation between text and background knowledge, as in the case of a memorization task, average achieving students' retellings would be generally accurate and would maintain the inconsistencies of the original text.

Therefore, retellings were categorized as to those which were accurate in the sense of maintaining the story contradiction and those which showed distortion of the original text in the sense of resolving the inconsistency.

The first step toward categorizing the subjects' retellings was to examine the original text and to identify the elements of the text which were part of or closely related to the story inconsistencies. A list of key propositions or idea units in the stories was drawn. The following criteria guided identification of key propositions:

1. A key proposition was one which occurred in the setting of the story and was inconsistent with at least one proposition in the ending of the story. Conversely, a proposition in the ending of the story which was inconsistent with a proposition in the setting was also considered a key proposition. For example, in the Brother Story, the proposition which identified Jim as brave was inconsistent with the proposition which described him as becoming afraid. Therefore, Jim being brave and Jim becoming afraid were identified as two key propositions in this story.
2. A key proposition may represent a cluster of story propositions which were related to an inconsistency, but were somewhat

redundant with one another in overall semantic impact. The omission of redundant propositions is likely to occur in retellings and may not necessarily tend to resolve an inconsistency (Johnson and Mandler, 1980). Therefore, propositions such as Bob got tired, Bob sat down, and Bob rested, constituted alternative segments of one key proposition.

3. A key proposition may not be redundant to actions comprising the first episode of the story. For example, Jim was described as always helping out when his little brother was in trouble. This proposition was inconsistent with his leaving his brother to solve his own problem. Yet, the first episode which shows Jim setting out to find his brother constitutes an example of Jim's "helper" characteristic. Since being helpful may be redundant to the first episode event, it was omitted from consideration as a separate key proposition. Instead, helpfulness was included as an alternative identifier in the "Jim was brave" key proposition.
4. A key proposition may appear within a story episode when it intensifies the degree of inconsistency between setting and ending relations in the story. For example, in the Horse Story, the fact that the Doc's house is a short way down the road intensified the degree of inconsistency between Bob being a good, long distance runner and Bob getting tired of running to the Doc's house. Therefore, location of the Doc a short distance away was considered a key proposition.

Five key propositions were identified in the Brother Story, and seven key propositions were identified in the Horse Story. These are listed in Figure 2. Ten graduate students were given the stories to read, followed by lists of statements based on the story. The graduate students were asked to identify those statements which they felt were most closely related to the inconsistencies or contradictions in the stories. One hundred percent of the graduate students identified four of the five statements in the Brother Story and six of the seven statements in the Horse Story which corresponded to the key propositions identified by the investigator. Ninety percent of the graduate students identified the remaining statement in each story which corresponded to a key proposition.

The list of key propositions was used as a template with which to score subjects' story retellings. Each retelling was transcribed. Information which identified subjects' group and retell condition was removed from the transcription and was replaced by a code number. Each retelling was then examined relative to the specified key propositions. Retellings were first scored as to whether each key proposition was (a) maintained, (b) omitted, (c) restructured, or (d) presented intact but explained in light of new information. These four ways of dealing with story anomaly, suggested by Mosenthal (1979), are explained below.

Maintained. A key proposition was considered maintained if it was explicitly or implicitly stated in the retelling. In many cases key propositions were distorted in the retelling but failed to lessen the degree of inconsistency with other key propositions. For instance,

	Brother Story	Horse Story
Setting	<p>Jim was older/bigger than the antagonist.</p> <p>Jim was brave/strong/protective.</p>	<p>Bob was a runner/liked to run.</p> <p>Bob's running entailed long distances.</p> <p>Bob won running races.</p>
Setting or Episode	<p>Brother was littler/younger than Jim.</p>	<p>Doc was a short distance away.</p>
Ending	<p>Jim became afraid/did not want to get hurt.</p> <p>Jim left the playground without his brother or the football.</p>	<p>Bob got tired/stopped running/rested.</p> <p>Bob did not like to/was not used to/could not run very far.</p> <p>Bob forgot about (getting aid for) the horse.</p>

Figure 2. Key propositions

in one retelling, "He was a very brave boy" was distorted in retell to "He was big and strong." This distortion did not tend to resolve the inconsistency with the ending information in the story. Such distortions of key propositions were scored as maintained.

Omitted. A key proposition was scored as omitted if there was no mention of the proposition in the retelling. For instance, some retellings failed to mention Jim's size or age or grade. Such an omission served to resolve the inconsistency in that it presented a plausible situation wherein one boy becomes afraid of another in the midst of a confrontation.

Restructured. Restructured was defined as a distortion of a key proposition which functioned at least partially to resolve a story inconsistency. For instance, one retelling contained the statement, "He thought he was all brave," rather than the textual "He was a very brave boy." A plausible inference which can be made from the retell statement is that perhaps Jim was not truly brave but only thought he was. The effect of this retell statement on lessening the degree of story inconsistency warranted scoring it as a restructuring.

New Information. New information was that which, added to an accurate retelling of a key proposition, tended to resolve the story inconsistency. For instance, the following retelling statements maintained the key proposition involving Jim becoming afraid of the fifth grader, but added new information. "He was afraid of the fifth grader. He didn't want to hurt him." Since concern for the fifth grader's

well-being did not appear in the original text and since it helped resolve the inconsistency, the key proposition involving Jim becoming afraid was scored as new information.

The analysis of the key propositions in the retellings served as a guide to increase the reliability of the overall retell scoring. Each story retelling which maintained four or more key propositions was scored as maintaining the overall inconsistency. Examples of such retellings appear in Appendix F. Each retelling with less than four maintained key propositions was categorized as either an omission or a restructuring. The very few incidents of new information were treated as a restructuring.

The two categories of omission and restructuring were later collapsed for two reasons. First, preliminary analyses indicated no pattern across groups or conditions in subjects' choice of omission versus restructuring in retellings which did not maintain the inconsistency. Second, many subjects both omitted and restructured propositions in the same retelling. Low reliability between scores differentiating the two categories was predicted. See Appendix G for examples of retellings which contain omissions and restructurings which tend to resolve the story inconsistency.

A fourth category of retelling, that of "new story" was originally planned for retellings which were largely irrelevant to the original text. For instance, in a pre-experimental trial retelling of the Horse Story, a young reader told a story about a boy preparing for and winning a horse race. Except for the boy and horse characters,

the story bore no resemblance to the original text. None of the retellings in the present study fit this 'new story' category. Therefore, it was dropped from the scoring system.

Interscorer Reliability

Reliability for the described method of scoring the story retellings was determined. A second scorer, a graduate student in special education, was trained by the investigator to use the scoring system. After a 45 minute training session for each story, the second scorer independently scored each transcribed retelling.

For the Horse Story, there was initial agreement between investigator and second scorer on the category assignment of 39 of the 40 retellings (97.5 percent). Both scorers independently rescored the one retelling for which the assigned categories differed. The difference was found to be due to clerical error. When corrected, agreement between the two scorers on the Horse Story was 100 percent.

The Brother Story yielded 97.5 percent agreement (on 39 out of 40 retellings) between investigator and second scorer. The one disagreement centered on whether the subject actually distorted a key proposition or whether he or she made a false start toward a distortion and then self-corrected to produce an accurate retelling of the key proposition. After referring to the tape recording of the retelling, the category of maintained inconsistency was assigned.

Recognition Task

For the recognition task, subjects received one point for each of three setting and three ending statements correctly recognized.

Two statements included in the task served as distractors and were not scored. The highest possible raw score was six. It was reasoned that high scores would indicate accurate semantic encoding of the text independent of retelling strategies. Low scores would indicate distortion of the text in memory.

Comprehension Monitoring Questions

Subjects' responses to the two comprehension monitoring questions were categorized as to the degree to which they indicated subjects' awareness of inconsistencies in the text. There were three categories of responses: (a) no expressed awareness of inconsistency, (b) partially explained inconsistency, and (c) completely explained inconsistency.

Responses to the two comprehension monitoring questions were collapsed for scoring purposes. In cases where the two responses differed in the degree to which the inconsistency seemed to be noted, the response was assigned to the higher degree of explanation. For example, one subject, when asked, "Was there anything that didn't make sense in this story?" responded, "No." But when asked, "Do you think this would be a good story for first graders?" the same subject answered, "I'm not sure they would understand it, saying he was brave but then him not sticking up for his brother." Since the second response completely explained an inconsistency, the total response was categorized as (c) completely explained inconsistency.

Specific guidelines for scoring responses into categories of (a) no, (b) partially, and (c) completely explained inconsistency are discussed below.

No Expressed Awareness of Inconsistency. In this category, responses to the first question, "Was there anything that didn't make sense in this story?" were generally negative. The few positive responses were accompanied by rationales concerning incidental details such as, "I never saw a horse on three legs." The question about the appropriateness of the story for first graders was answered either positively or negatively. The reasons given for the response generally reflected concern for interest level, readability, or the emotional or moral effect of the story on young children. In some cases, comprehensibility was judged to be good.

Partially Explained Inconsistency. This category was used for responses which questioned or commented on only one element of the inconsistency, such as "He was afraid of the fifth grader." Another proposition with which this one was inconsistent, such as "Jim was older," was not mentioned. In some cases, it was unclear whether students noted an inconsistency between setting and ending information or whether the response was based on background experience beyond the story context. One student commented, "I wouldn't think he's walk away from his brother." No further rationale was given. Such responses were assigned to the partially explained category. Responses of subjects who said the story lacked an ending were also assigned to this category. These

responses seemed to indicate a sense of the story incongruity accompanied by the expectation that it might be resolved if an adequate ending was forthcoming.

Completely Explained Inconsistency. Responses in this category mentioned at least one key proposition as being inconsistent with another key proposition. Both of the inconsistent propositions were explicitly stated in the subjects' response. An example of a completely explained response is, "Jim became afraid of him. He was a junior high kid and the other guy was a fourth grader or something." Since both Jim's superior age and Jim's becoming afraid were noted, the response was considered a complete explanation of inconsistency.

Analyzing the Data

The purpose of the study was to compare learning disabled students with average achieving students in terms of the reading strategies used under differing situational contexts. The primary data, the story retellings, were categorized according to their maintenance of story inconsistency or resolution of story inconsistency. Nonparametric tests were employed for the analysis of these results.

Chi square tests were used to analyze for (a) passage effects on retell strategy within each condition, (b) group differences in retell strategies within each condition, (c) passage order effects across conditions, and (d) group differences in strategy shift across conditions. The McNemar test for the significance of changes and binomial test were used to test for the effectiveness of the two conditions in fostering different reading strategies within and between groups.

Results of the recognition task were analyzed using a mixed design which incorporated Latin Squares. Though limited in ability to analyze for interactions, this statistic was determined to be most appropriate for accommodating the repeated measures design of the study. The categorical data from the comprehension monitoring question were analyzed in reference to subjects' retell strategies using non-parametric tests.

A highly conservative alpha level was seen as inappropriate due to the highly exploratory nature of the study. However, the design necessitated employment of several separate tests. Based on consideration of both these factors, an alpha level of .05 was established for all tests.

CHAPTER 3

RESULTS

This study investigated whether learning disabled students differ from average achieving students in their ability to modulate the degree of interaction between text and background knowledge in response to differing task situations. The conceptualization of learning disabled students as inactive learners who do not employ task appropriate strategies provided the theoretical underpinnings of the research questions.

To address these questions posited in Chapter 1, Statement of the Problem, an experiment was conducted. Twenty learning disabled and 20 average achieving seventh graders read and produced retellings of stories which contained interpropositional inconsistencies. One reading and retelling was conducted under storytelling conditions designed to activate strategies for maximizing interaction between text and readers' background knowledge. Another reading and retelling was conducted under memory conditions designed to maximize differentiation of text from background knowledge. A recognition task and comprehension monitoring questions follow the retellings. Retellings and recognition responses were analyzed as to whether students tended to resolve text inconsistencies through the interplay of background knowledge or whether they maintained text inconsistency by generally differentiating text from

background knowledge. The results of these analyses are presented in this chapter. Data derived from story retellings will be discussed first, followed by recognition task and comprehension monitoring results.

Story Retellings

As described in Chapter 3, Procedures, retellings were categorized as to those which (a) maintained overall text inconsistency, or (b) tended to resolve text inconsistency. In other words, retellings of the anomalous story information were either essentially accurate as compared to the original text, or they were at least somewhat distorted in the direction of providing some consistency not present in the original text.

Question 1: Storytelling Condition. The first research question asks how learning disabled students compare to average achieving students in strategies used to deal with story inconsistency under a storytelling condition. It should be recalled from Chapter 3, Procedures, that half the students in each group received the Horse Story in the storytelling condition and half received the Brother Story.

The results were first analyzed to determine if subjects maintained or resolved overall story inconsistency in response to the particular stories they read (Table 1). Using a 2 x 2 chi square procedure (Dinham, 1976), no passage effects were indicated ($\chi^2(1) = .1961$). Therefore, the passage variable was excluded from the next analysis. A 2 x 2 chi square was then used to determine group differences in recall under the storytelling condition (Table 2). No

Table 1. Frequencies of retellings which maintained or resolved inconsistency by passage under storytelling condition

Passage	Number of Retellings Maintaining Inconsistency	Number of Retellings Resolving Inconsistency
Brother Story	4	16
Horse Story	2	18

Table 2. Frequencies of retellings which maintained or resolved inconsistency by group under storytelling condition

Group	Number of Retellings Maintaining Inconsistency	Number of Retellings Resolving Inconsistency
Learning Disabled	3	17
Average Achieving	3	17

significant differences were found ($\chi^2(1) = .1961$). A tendency toward distortion of the original text in the direction of resolving inconsistency appeared in the retellings of 85 percent of the learning disabled subjects and 85 percent of the average achieving subjects. The results indicate no differences between learning disabled and average achieving groups in strategy used to deal with story inconsistency under storytelling conditions.

Question 2: Memory Condition. The second research question asks how learning disabled students compare to average achieving students in strategies used to deal with story inconsistency under a memory condition. Students who read the Brother Story in the storytelling condition, read the Horse Story in the memory condition, and vice versa. The memory condition always followed the storytelling condition after at least a two week interval.

The same tests as described for the storytelling condition were used to analyze the retellings from the memory condition. Table 3 shows the data used to test for possible differences resulting from the particular passage the subjects had read. Results from a 2 x 2 chi square showed no significant passage effect ($\chi^2(1) = .4267$). Therefore, results were collapsed across passages and were tested for group differences (Table 4). Accurate retellings, or retellings which maintained the inconsistencies of the original text, were produced by 70 percent of the average achieving students and 55 percent of the learning disabled students. Despite the seemingly larger percentage of average achieving students who maintained text inconsistency as compared to

Table 3. Frequencies of retellings which maintained or resolved inconsistency by passage under memory condition

Passage	Number of Retellings Maintaining Inconsistency	Number of Retellings Resolving Inconsistency
Brother Story	14	6
Horse Story	11	9

Table 4. Frequencies of retellings which maintained or resolved inconsistency by group under memory condition

Group	Number of Retellings Maintaining Inconsistency	Number of Retellings Resolving Inconsistency
Learning Disabled	11	9
Average Achieving	14	6

learning disabled students, a 2 x 2 chi square indicated no significant difference between groups ($\chi^2(1) = .4267$). To reach statistical significance at the .05 level, the size of χ^2 needs to be 3.841. In answer to the second research question, there is no evidence of significant differences between learning disabled and average achieving students in strategy used to deal with story inconsistency under memory conditions.

Question 3: Strategy Change. The third research questions asks how learning disabled students compare to average achieving students in their ability to shift strategy choice across task conditions. First, a test was conducted to check for passage order effects on strategy change. A 2 x 2 chi square was used to determine whether a subject was more likely to use one strategy in the storytelling condition and the same or another strategy in the memory condition if the stories were presented in a particular order. To maintain adequate cell frequencies, numbers of students who failed to change strategy were grouped with the two students who maintained the inconsistency in the storytelling condition and resolved the inconsistency in the memory condition (Table 5). The results indicated no significant passage order effect for strategy shift around conditions ($\chi^2(1) = 1.6040$).

Next, the data were collapsed across passages and groups to allow for large cell frequencies in determining whether significant strategy changes actually occurred in conjunction with the different conditions. Frequencies for each strategy change as well as for no strategy change are shown in Table 6. The McNemar test for the significance of changes (Siegel, 1956) indicated significant changes at the

Table 5. Frequencies for strategy change by passage sequence

Strategy Change	Horse/Brother Sequence	Brother/Horse Sequence
Resolved to maintained	13	8
Maintained to resolved or no change	7	12

Table 6. Frequencies for strategy change across conditions

Storytelling Condition	Memory Condition	
	Resolved	Maintained
Maintained	2	4
Resolved	13	21

.001 level in recalls across conditions ($\chi^2(1) = 14.087$). Since cell frequencies were too small to allow use of the McNemar test for each group separately, the binomial test (Siegel, 1956) was applied for the significance of strategy changes within each group (Tables 7 and 8).

Table 7. Frequencies for strategy change within the learning disabled group

Storytelling Condition	Memory Condition	
	Resolved	Maintained
Maintained	0	3*
Resolved	9*	8

*These cells indicate the frequency of no change in strategy from storytelling to memory conditions, and do not enter into the analysis of the significance of change.

Table 8. Frequencies for strategy change within the average achieving group

Storytelling Condition	Memory Condition	
	Resolved	Maintained
Maintained	2	1*
Resolved	4*	13

*These cells show the frequency of no change in strategy from storytelling to memory condition and do not enter into the analysis of the significance of change.

Both the learning disabled group and the average achieving group showed significant change in retell strategy across conditions ($p = .004$ for each group). These results indicate that the experimental task conditions or the sequencing of task conditions in this experiment was effective in fostering strategy changes. The prevailing direction of strategy change was from resolving text inconsistency under storytelling conditions to maintaining text inconsistency under memory conditions.

The McNemar and the binomial tests compared the number of students who went from accurate retelling in the storytelling condition to distortion in the memory condition with number of students who went from distorted retelling in the storytelling condition to accurate retelling in the memory condition. While these tests yielded the significance of the direction of change, the number of students who used the same strategy across conditions was not taken into account. There was also no direct comparison of strategy change between the two groups. Therefore, a 2×2 chi square was conducted to compare groups as to the frequency of the prevailing strategy change (distortion under storytelling to accuracy under memory conditions) versus no change or change in the opposite direction. Frequencies appear in Table 9. Strategies of resolving inconsistency under storytelling conditions and maintaining inconsistency under memory conditions were shown by 40% of the learning disabled students and 65% of the average achieving students. According to the chi square analysis, these results do not indicate significant differences between groups ($\chi^2(1) = 1.6040$). Therefore, the answer to the third research question is that learning disabled students do not

Table 9. Frequencies for strategy change by group

Strategy Change	Learning Disabled	Average Achieving
Resolved to maintained	8	13
Maintained to resolved or no change	12	7

differ from average achieving students in ability to shift strategy across task conditions.

Summary of Story Retelling Results. The retell data, when classified as either maintaining story inconsistency or tending to resolve story inconsistency yielded the following results:

1. There were no significant differences in the retellings of the learning disabled group as compared to the retellings of the average achieving group.
2. There were no significant passage effects or order effects.
3. For both groups, there were significant differences in retellings under the storytelling condition as compared to retellings under the memory condition. Under the storytelling condition, students tended to distort the text in the direction of resolving story inconsistencies. Under the memory condition, retellings were generally accurate in their maintenance of story inconsistencies.

Recognition Task

The purpose of the recognition task was to provide indications of possible discrepancy between how subjects retold stories and how they remembered these stories. The task consisted of a page bearing eight pairs of sentences. Subjects were to indicate whether one or neither of the sentences in each pair actually appeared in the story they read. Two of the sentence pairs were distractor items. The other six, taken from the story settings and endings, were used in the analysis of the results.

Raw scores were analyzed using a mixed design which incorporated Latin Squares (Myers, 1979). The two between factors were group (learning disabled and average achieving) and story sequence (Brother then Horse Story and Horse then Brother Story). The two within factors were condition (storytelling and memory) and treatment (Brother Story and Horse Story). The results are summarized in Table 10.

There were no significant differences between groups in accuracy on the recognition task. The mean scores for the learning disabled group and average achieving group were 4.725 and 4.775 respectively. There was also no significant difference for story sequence. Students who received the Horse story in the storytelling condition and the Brother Story in the memory condition achieved a mean score of 4.675. Students who received the reverse story sequence of Brother Story in the storytelling condition and Horse Story in the memory condition achieved a mean score of 4.825. There was also no significant interaction effect of group by story sequence. Because of the confounding by repeated measures, no other interactions could be analyzed.

Table 10. Source table for recognition task

Source of Variance	MS	df	F	p
A (Group)	.050	1	ns	.001
B (Story Sequence)	.450	1	ns	
AB	.800	1	ns	
S(AB)	1.686	36		
C (Condition)	9.800	1	16.090	.001
D (Story)	4.050	1	6.648	.025
Res S(AB)CD	.609	38		

There was a significant difference ($p < .001$) between scores from the storytelling condition ($\bar{X} = 4.4$) and scores from the memory condition ($\bar{X} = 5.1$). The condition effect found in the recognition task data parallels the condition effect found in the results of the retellings. When stories were read under the storytelling condition, both groups tended to distort the story in retelling. Subjects also correctly recognized fewer sentences that appeared in the story. When stories were read under the memory condition, there was a greater frequency of accurate retellings as well as more sentences correctly recognized. These results suggest it is not likely that students in the storytelling condition remembered the story accurately but consciously distorted events in retelling for the sake of their proposed first grade listeners. In

other words, there is no evidence of a discrepancy between students' memorial representations of the text and their retellings.

It should be noted, however, that the above results are derived from overall comparisons of group data. Individual retell protocols were not matched with individual recognition task protocols. In-depth comparison of story recall versus recognition was judged to be beyond the scope and purpose of this study.

Results of the recognition task also showed a significant story effect ($p < .025$) with a greater number of accurate responses for the Brother Story ($\bar{X} = 4.975$) than for the Horse Story ($\bar{X} = 4.525$). A closer look at the recognition task protocols indicated no significant difference between the two stories in number of errors involving ending statements. There were 19 incorrect responses among the ending statements from the Horse Story and 15 incorrect responses among the ending statements of the Brother Story. The main source of difference between the two stories was in the first two statements of the settings. Twenty-three errors came from failure to recognize either or both of the statements from the Horse Story which read, "Bob was a good runner," and "He won many long running races." There were only eight failures to recognize the statements which corresponded structurally in the Brother Story, "Jim was in junior high school," and "He was a very brave boy." A plausible reason for the differences in recall between the two stories was discussed in the Materials section of Chapter 2, Design of the Study.

A question remains as to why story effects appeared in analysis of the recognition task results but not in analysis of the recall

results. A plausible explanation is that the use of selected key propositions for recall scoring helped to eliminate passage effects in recalls. The key propositions did not precisely correspond to items on the recognition task. For instance, the sentence in the Horse recognition task, "He won many long running races," was unpacked into two separate key propositions, (1) Bob's running entailed long distances, and (2) Bob won running races. Recall of either proposition was scored as contributing toward overall recall accuracy. For the recognition task, students had to recognize both propositions as occurring together in the same sentence in order to score an accurate recognition.

The recall data were rechecked to determine whether there were significant differences between the settings of the two stories as measured by students' recalls of key propositions. There were 46 accurate recalls of key propositions from the setting of the Brother Story. There were 37 accurate recalls of key propositions from the settings of the Horse Story. A binomial test was used to compare these data (Siegel, 1956). Of the total frequency of accurate recalls of setting propositions (83), the probability of the observed distribution between stories is .1894. In other words, the binomial test confirms that there was no significant difference between stories in terms of recalls scored by the identification of key propositions.

In summary, the recall and the recognition tasks in this study were similar in their ability to indicate condition effects and in their failure to yield group differences. However, the recognition task scores were sensitive to passage effects while recall scores were not.

Comprehension Monitoring Questions

After the recognition test, subjects were asked two questions: (a) Was there anything in the story that didn't make sense? and (2) Do you think this would be a good story for first graders? The system for scoring the responses is discussed in Chapter 3, Procedures. These data were used to help answer ancillary questions arising from the results of the story retellings. These questions will be presented along with the data derived from the comprehension monitoring responses. It should be noted that only 18 students in each group received the questions immediately after the recognition test. Data from the other two students in each group do not enter into this analysis.

1. Of the students who maintained inconsistency in their retellings, was there expressed awareness of text inconsistency, or did the students seem not to notice the inconsistency?

Only three students in each group maintained story inconsistency in their retellings despite the storytelling condition which was designed to promote resolution of inconsistency. When asked, all three learning disabled students gave complete explanations of some inconsistency in the story. One of the average achieving students gave a complete explanation, while two average achieving students gave partial explanations of an inconsistency. Since there are so few subjects who gave accurate retellings in the storytelling condition, interpretation of these results is quite tenuous. The indication is, however, that when students maintained story inconsistency under storytelling conditions, they were generally aware of the inconsistency in the text.

Twenty-four students maintained story inconsistency in their retellings under the memory condition. Half (50 percent) of these 24 students failed to explain any text inconsistency when asked. The others gave either complete explanations (33.3 percent) or partial explanations (16.7 percent). In other words, under the memory condition, students' maintenance of inconsistency in their retellings was not indicative of whether or not these students would express conscious awareness of text inconsistency.

In order to compare groups as to no explanation of inconsistency versus complete or partial explanation of inconsistency, a 2 x 2 chi square was used (Table 11). Only data from the memory condition was included in order to avoid confounding by repeated measures. Results indicated no significant differences between groups as to students' noting or failing to note that an inconsistency existed in the original story ($\chi^2(1) = .1714$).

Table 11. Frequencies for explanation of inconsistency among subjects who maintained inconsistency under memory conditions

	No Explanation of Inconsistency	Complete or Partial Explanation of Inconsistency
Learning Disabled	4	6
Average Achieving	8	6

2. When students resolved story inconsistency in their retellings, did they express awareness of some text inconsistency, or did they seem not to notice the inconsistency?

Thirty students who were given the comprehension monitoring questions gave retellings under the storytelling condition which tended to resolve story inconsistency. Fourteen of these 30 students (46.7 percent) or seven in each group said there was nothing in the story that didn't make sense. The other 16 students (53.3 percent) or eight in each group gave complete or partial explanations of original text inconsistencies. These observations indicate that tendency to resolve story anomaly in retelling is not a predictor of whether or not students will express conscious awareness of text inconsistency. It is also obvious that there were no significant differences between groups in terms of expressed awareness of text inconsistency.

Twelve students gave retellings under the memory condition which tended to resolve text inconsistency. Eight of these students were learning disabled and four were average achieving. Nine students (75 percent of each group) failed to explain an inconsistency in the text, and three students (25 percent of each group) gave complete explanations of an inconsistency. Among these students who distorted text despite conditions that promoted accuracy, there seems to be a slight trend toward a lack of awareness of the text inconsistency. However, the sample size is small and these results do not reach significance at the .05 level (Siegel, 1956).

3. Among students who changed their strategy from resolving inconsistency in storytelling to maintaining inconsistency in memory condition, was there a change in awareness of inconsistency across conditions?

Twenty students who received the comprehension monitoring questions resolved some story inconsistency in the storytelling condition but maintained inconsistency in the memory condition. No awareness of inconsistency under either condition was expressed by five of these students. Partial or complete explanation of the inconsistency was given under both conditions by seven students. The remaining eight students gave no explanation of the inconsistency in one condition but gave partial or full explanation in the other condition. These data do not indicate a relationship between the use of strategies for constructive versus accurate recall and readers' conscious evaluation of text comprehensibility.

CHAPTER 4

SUMMARY, DISCUSSION, AND IMPLICATIONS

This final chapter presents a summary of this study, followed by discussion, assumptions, limitations, and implications for research and education.

Summary

A recent conceptualization of learning disabled students is that of inactive learners. Research has shown that learning disabled students, particularly those with deficits in reading achievement, fail to spontaneously activate appropriate learning strategies. These investigations have focused exclusively on task conditions which demand strategies for accurate reproduction of stimuli.

Recent research in cognitive psychology and reading indicate that good readers activate differential control schemata for various task demands. Readers produce accurate recalls under certain predictable conditions which call for maximal differentiation of background knowledge from text. However, under other predictable conditions, readers activate strategies to maximize their interaction with text. In recall, text may then be distorted in the direction of conformance with prior knowledge structures.

The purpose of this study was to investigate whether learning disabled students, as compared to average achieving students,

spontaneously respond to differing situational contexts of reading tasks by activating strategies for interaction with text or differentiation of text from background knowledge. The results aimed to either broaden or constrain the range of tasks which are sensitive to the inactive learner characterization of learning disabled students.

Subjects

Twenty learning disabled and 20 average achieving seventh graders served as subjects. The students were recruited from seven junior high schools located in middle socioeconomic areas of a southwest, metropolitan school district. Approximately 60 percent of the students in each group were male. Ages ranged from 12-4 to 14-0 years, with no significant difference in age between the two groups.

The learning disabled students had been diagnosed as learning disabled by a multidisciplinary team and were participating in a learning disability resource program for part of the school day. Reading improvement was a stated goal in each student's Individual Educational Program. These students scored at the third stanine or lower on standardized measures of reading achievement. The mean Verbal IQ for this group, as measured by the Wechsler Intelligence Scale for Children-Revised (WISC-R), was 85.9 (S.D. = 7.654). Mean Performance IQ by the same test was 99.3 (S.D. = 10.208). No specific effort was made to recruit learning disabled students with performance IQ's relatively higher than Verbal IQ's.

The average achieving students had no recorded referrals for suspected handicaps and no record of placement in remedial reading or

adaptive education programs. They scored at the fifth stanine on the most recently administered standardized reading test. Scores on prior standardized reading and math tests fell within the fourth to sixth stanines. A measure of mental ability was obtained from the Vocabulary and Block Design subtests of the WISC-R. When prorated to yield expected full scale IQ scores, these scores suggest full scale IQ's of 90 to 110.

Comparison of average students' prorated Performance scores with learning disabled students' observed Performance IQ yielded no significant difference between the two groups. However, average achieving students' prorated Verbal scores were significantly higher than learning disabled students' observed Verbal scores ($p < .001$). All subjects achieved at least 85 percent accuracy on a preliminary word recognition test and demonstrated ability to read and retell a short expository text.

Materials

Experimental materials consisted of two narrative passages, each approximately 160 words long. Readability levels were 3.1 and 2.8 as determined by the Spache (1953) readability formula. The stories were identical in structure (Mandler and Johnson, 1977), each containing a setting and two episodes. The setting of each story contained information describing the protagonist. This information was inconsistent with the protagonist's behavior in the ending of the final episode. For example, in one story (Brother Story), Jim was introduced as a junior high student who was very brave and who always took good care of his little

brother. In the following episodes, Jim confronted a fifth grader who was attempting to steal the little brother's football. The ending of the story was inconsistent with the setting in that Jim became afraid of the fifth grader, and left his little brother to solve the problem. The other story introduced a good long distance runner who, in the final episode, failed to run a short distance to get help for his injured horse.

Other materials included a recognition task whereby students were asked to read and listen to pairs of sentences and determine which sentences appeared in the original text. Two comprehension monitoring questions were given orally to determine whether students were consciously aware of story inconsistencies. Materials used in the experimental sessions which did not yield data included an expository interference passage and word find puzzles.

Procedure

During the first session with the investigator, each subject individually received the word recognition test and read and retold the expository practice passage. Average achieving students received Vocabulary and Block Design subtests of the WISC-R. Students whose performance met all subject selection criteria then participated in the next two experimental sessions which comprised a storytelling condition and a memory condition.

The storytelling condition was designed to foster maximal interaction between text and readers' background knowledge. Although the storytelling condition always preceded the memory condition, passages

were counterbalanced. Students were individually asked to read one of the stories while thinking about whether it would be a good story for first grade listeners. After reading, subjects spent five minutes working on a word find puzzle. Then they were shown a photograph of a group of first graders and were asked to tell the story exactly as written and as if they were telling it to first graders. The retelling was tape recorded. The recognition task and comprehension monitoring questions followed.

The memory condition was designed to foster maximal differentiation of text from background knowledge. It followed at least two weeks after the storytelling session. To interfere with students' memory of the story structure encountered in the storytelling session, students first read and retold an expository passage under directions emphasizing accurate recall. Students were then given the narrative passage not encountered in the storytelling session. Subjects were asked to read the story for the purpose of remembering it exactly. A word find puzzle and a taped retelling followed, as did the recognition task and comprehension monitoring questions.

Scoring

Key propositions from each story which related to the story inconsistencies were identified. The transcribed retellings were then analyzed as to their maintenance or restructuring of each of the key propositions. Based on this analysis, each retelling was categorized as either accurate in the sense of generally maintaining story

inconsistencies, or distorted in the sense of tending to resolve story inconsistencies.

The recognition task yielded raw scores indicating the number of sentences correctly recognized. Responses to the comprehension monitoring questions were categorized as to whether they conveyed complete, partial, or no awareness of the story inconsistencies.

Results

Nonparametric tests were employed for the analysis of the retell data. Findings were as follows:

1. There were no significant passage effects on retell strategy in either storytelling or memory condition.
2. There were no passage order effects on retell strategies across conditions.
3. There were no significant differences between groups in retell strategy in either storytelling or memory condition.
4. There were no significant differences between groups as to their shift in strategies from storytelling to memory condition.
5. For both groups there was a significant difference in retell strategy under the storytelling condition as compared to the memory condition. Under the storytelling condition, subjects distorted the original text, showing a tendency to resolve inconsistency. Under the memory condition, subjects produced generally accurate retellings which maintained story inconsistency.

Recognition task data were analyzed using a mixed design which incorporated Latin Squares. Results indicated significant passage effects and condition effects. There were no significant differences between groups in recognition of story sentences.

Data from the comprehension monitoring questions were grouped in relation to subjects' retell strategy under each condition. Nonparametric tests indicated that among students who gave accurate retellings under the memory condition, and among students who resolved inconsistency under the storytelling condition, approximately half expressed some awareness of text inconsistency, while half expressed no awareness of inconsistency. There was no significant difference between groups in expressed awareness of story inconsistency, regardless of condition or retell strategy.

Discussion

The findings suggest that learning disabled students do not differ from average achieving students in their ability to respond to two different reading conditions. When given instructions aimed to facilitate a high degree of interplay between background knowledge and text, learning disabled and average achieving students activated strategies for resolving text inconsistency. In recall, students from both groups omitted and restructured inconsistent propositions of a narrative text, producing a story which bore a consistency more similar to that of the stories encountered in their past experience. When given instructions aimed to foster a high degree of differentiation of background knowledge from text, learning disabled and average achieving

students activated strategies for maintaining text inconsistency. In recall, students from both groups showed significantly less tendency to reform the text.

Previous research has suggested that learning disabled students who are poor readers fail to spontaneously activate appropriate task strategies in a variety of recall tasks. This raises questions about why this study failed to detect the inactive learner characteristics consistently evident in previous studies. Several possible explanations will be considered.

The first is the possibility of a ceiling effect for both groups. The experimental task may have been too simple to allow detection of group differences. More subtle directions for each task condition, or longer and less readable text might have increased the difficulty, thus possibly yielding significant group differences. However, it is more likely that such changes would yield group differences that could be attributable to the poorer verbal skills, decoding problems, or failures to activate mnemonic strategies often exhibited by learning disabled students. The strength of the present study is that linguistic, decoding, and memory requirements were kept to a minimum to allow observation of the way students respond to differing reading conditions. It should also be noted, in regard to possible ceiling effects, that both groups contained subjects who failed to activate the reading strategy predicted by given task conditions. Therefore, a ceiling effect does not seem to be an artifact which obscured potential group differences.

Another possible explanation for the absence of group differences is that the scoring procedures employed in this study may have

lacked the sensitivity to detect group differences. These scoring procedures did, however, detect significant differences across task conditions. In addition, the recognition task results, though limited in ability to analyze group by condition interactions, confirmed the absence of significant differences between groups as well as the presence of significant differences across conditions. Therefore, it seems that the retell scoring procedures employed in this experiment were adequate for detecting group differences that were relevant to the research questions.

A final possible reason for the lack of significant group differences may be that the prereading instructions supplied in this experiment actually served to activate the otherwise cognitively inactive learning disabled students. It can be hypothesized that learning disabled students would not spontaneously activate differential reading strategies in situations where instructions do not immediately precede reading. Examples of such unprompted reading situations which predict the use of different reading strategies are self-induced leisure reading or home study for a recall test in school. At the center of this argument is the problem, noted by Wong (1979b, p. 656) that "the word activated can assume different meanings." Future research is needed which will define the parameters of instructions and task structures which activate inactive learners. In most previous research, activation of learning disabled students took the form of instructions or questions which induced overt mediating activity to occur between the initial directions and the final recall behavior. In this study, the

instructions did not induce overt mediating behaviors, and in that sense did not activate strategies which might fail to appear spontaneously.

Three possible explanations for the lack of significant group differences have been discussed and have been found inadequate for accounting for the observed results. Based on this research, it can be concluded that these learning disabled students did not differ from average achieving students in their ability to activate differential strategies in response to different situational contexts.

These results do not refute the inactive learner theory of learning disability. Rather, the results serve to constrain the range of its applicability. Learning disabled students have consistently appeared to be cognitively inactive in tasks requiring spontaneous activation of mnemonic strategies for the purpose of accurate recall. These mnemonic strategies include labeling, rehearsal, categorizing, inferencing, and detecting main ideas. The characterization of cognitive inactivity does not seem to apply to the spontaneous activation of differential reading strategies in response to the context of reading acts.

In summary, the present study does not address the basic accuracy of the inactive learner theory of learning disability. Rather, it contributes to its growth in specificity.

Assumptions

Several assumptions were made which pertain to the procedures used in this study and which affect the generalizability of the findings:

1. Readers' goals and purposes for reading influence their memorial representations of text and these memorial representations are reflected in their recalls.
 - (a) The two conditions devised for this study fostered the adoption of two distinct purposes for reading which are similar to purposes which readers may adopt in real-life reading.
 - (b) The recalls produced by subjects in this experiment reflect the types of strategies which are used in real-life reading and which influence readers' memorial representations of text.
2. Readers' memorial representations of text can be very similar but never identical to the author's intended message. While most authors strive for congruity and consistency in their text, the intents, goals, and background associations between the text and the author's cognitive makeup cannot be fully textual. Nor can readers' background knowledge precisely match that of the author. The high level of inconsistency in the experimental stories is unique to this experimental task but these stories do not represent a discrete category of reading material. The gross inconsistencies in the experimental text simply magnify the types of constructive strategies which readers must apply toward the comprehension of any text.

Limitations

This study was subject to the following limitations:

1. Sample size was small due to the limited availability of junior high school students who met subject selection criteria. These criteria lent strength to the study by precisely defining the focal population. However, caution and restraint must be used before generalizing the findings to all students in learning disability programs or to all average readers.
2. The passages used in this study were very similar to one another in structure, length, and readability. Each passage contained a single male protagonist whose positive attributes were described in the setting and who failed in the ending to reach a goal. The characteristics peculiar to these stories limit generalizability to other stories and other types of text.
3. Instructions which set the conditions for reading were given orally and individually to each subject. While the purposes for reading and recalling are assumed to be similar to those purposes adopted during classroom reading, classroom instruction is seldom individually given. This restrains one from generalizing to reading conditions created by oral group instruction, written instruction, or self-induced purposes for reading.
4. The procedure for scoring the retell data was designed to detect accuracy or distortion of key propositions in the original text. The scoring procedure did not analyze other aspects of the retellings, such as overall number of propositions recalled,

relative degrees of distortion, or nonverbal behaviors accompanying recall.

Implications

The results of this study suggest that situational contexts have powerful effects on the reading strategies of learning disabled readers as well as average achieving readers. Teachers' instructions and the structures of daily lessons can foster interaction between background knowledge and text with concomitant distortions in recall. On the other hand, instructions can foster maximal differentiation of background knowledge from text, resulting in relatively accurate recall. An obvious implication is that teachers should be aware of the situational contexts created in their classrooms and should maintain some consistency among the pre-reading, post-reading and assessment activities conducted within specific lessons. For instance, when pre-reading instructions encourage relating events in text to background experience, follow-up activities should not penalize students for the slight distortions and omissions in recall which are a predictable outcome of the initial instruction.

There is, however, a paucity of direct research evidence as to which type of situational context should be linked to which learning goals to produce optimal outcomes. Conditions which foster interaction between background knowledge and text have been encouraged for their ability to promote integration and updating of new knowledge (Spiro, 1977). Such conditions are seen to foster the schema change which is essential to the acquisition of knowledge (Anderson, 1977). Further,

conditions for fostering interaction with text may be essential for developing young readers' aesthetic enjoyment of reading (Rosenblatt, 1980).

This is not to suggest that students should be encouraged or taught to produce idiosyncratically distorted interpretations of text. Teaching techniques which accommodate the interplay of background knowledge as part of the process of acquiring new knowledge must be identified and tested. One such teaching technique found to be effective with older, normal students is the use of analogy (Hayes, 1979). With analogy, old knowledge is brought into juxtaposition with new information to facilitate acquisition of new concepts.

The present study suggests that average achieving and learning disabled readers have schemata and strategies for responding to certain reading task conditions with a high degree of interaction between text and background knowledge. Further research is needed to determine whether learning disabled students can spontaneously activate the specific cognitive strategies necessary for the acquisition of knowledge through text-based analogy and other techniques which encourage interaction with text.

The desirability of conditions which emphasize accurate recall and thereby encourage students to differentiate background knowledge from text seems to be controversial. Spiro (1977) urges against requiring students to treat text like a memory experiment, compartmentalizing new information for the sake of accurate recall. Given situational contexts which emphasize accuracy, students may be prone

to treat all new information as unrelated to the information aggregated in other grades, other subjects, and out-of-school contexts.

Nevertheless, concepts of literal meaning, truth, and validity remain a foundation stone of Western culture (Anderson, 1977). There is a valuable corpus of educational research and practice which has focused on improving the accuracy of students' comprehension and recall of text (Meyer, 1977). We need not prematurely discard the notion that text can be well or poorly understood. However, from the perspective provided by awareness of students' capacity to either interact with text or differentiate text from background knowledge, educators and researchers will need to assess what degrees of text interaction are maximally efficient for various learning objectives. One goal may be to set priorities which balance a concern for knowledge integration with a concern for eradicating comprehension "errors." As indicated by the present study, these issues involve teachers of the learning disabled as well as teachers of normal students.

In addressing the inactive learner theory of learning disabilities, this study suggests that seventh grade learning disabled students are not inactive in adapting reading strategies to differing task conditions. Further research is needed to determine whether younger learning disabled children exhibit developmental delays in responding to differing situational contexts of listening tasks. Investigations are also needed to determine whether intermediate learning disabled students spontaneously exhibit differential task strategies for reading non-narrative content area text under differing situational

contexts. A goal of future research into the inactive learner theory of learning disabilities should be to clearly specify the parameters of tasks to which the inactive learner characterization applies. The next step will then be to investigate the mechanisms which foster cognitive inactivity in certain task domains and not in others. The ultimate goal is to discover instructional methods which teach learning disabled students to engage spontaneous, task-appropriate cognitive activity in all learning tasks.

APPENDIX A

NARRATIVE PASSAGES

Brother Story*

- Page 1 Once there was a boy named Jim. He was in junior high school and he was a very brave boy. Like all big brothers, he always helped out when his little brother was in trouble.
- Page 2 One day after school, he went to see why his little brother was late getting home. Soon he got near his brother's school. He saw a fifth grader and a little boy yelling at one another. Jim saw that the little boy was his own brother Tom.
- Page 3 The fifth grader was saying that Tom stole his football. He wanted the little boy to give it to him. Jim knew his brother got that football for his birthday last week. Jim went over to the fifth grade boy. "I'll take care of this," said Jim. Jim took the boy's arm. The boy looked up at Jim.
- Page 4 Jim became afraid of the fifth grader. He didn't want to get hurt. He left the playground and forgot all about his brother's problem.

*Title was not present on subjects' copy.

Horse Story*

- Page 1 Once there was a boy named Bob. He was a good runner and won many long running races. Like all young boys, he always took very good care of his horse.
- Page 2 One day after school, he went to see if his horse needed more food. Soon he got to the little field. He found that part of the fence was torn down. Bob saw that the horse was standing on three legs.
- Page 3 One of the horse's legs was very badly hurt. Her big brown eyes looked sadly at Bob. Bob knew he had to get Doc Brown who lived a short way down the road. Bob went home to put on his running shoes. "I'll run to Doc Brown's house," said Bob. Bob raced down the empty road. Soon he could see the Doc's house.
- Page 4 Bob got tired of all the running. He didn't like to run very far. He sat down to rest and forgot all about his horse.

*Title was not present on subjects' copy.

APPENDIX B
RECOGNITION TASKS

Brother Story

Name _____

School _____

S M

Directions: Read each pair of sentences. Put an X by the sentence that was in the story. If neither sentence was in the story, put the X on the line in the middle.

Jim was in junior high school.

Jim was in fourth grade.

He was a very brave boy.

He was a very fearful boy.

Like some big brothers, he sometimes helped out when his little brother was in trouble.

Like all big brothers, he always helped out when his little brother was in trouble.

It was a cold and rainy day.

It was a hot and sunny day.

Jim knew his brother got that football for his birthday last week.

Jim knew the fifth grader got that football for his birthday last week.

Jim became afraid of the fifth grader.

The fifth grader became afraid of Jim.

He didn't want to hurt the fifth grader.

He didn't want to get hurt.

He left the playground and forgot all about his brother's problem.

He left the playground after he solved his brother's problem.

Horse Story

Name _____

School _____ S M

Directions: Read each pair of sentences. Put an X by the sentence that was in the story.
If neither sentence was in the story, put the X on the line in the middle.

Bob was a good runner.

Bob was a poor runner.

He won many long running races.

He lost any long running races.

Like some young boys, he sometimes
took very good care of his horse.

Like all young boys, he always
took very good care of his horse.

It was a cold and rainy day.

It was a hot and sunny day.

Bob knew he had to get Doc Brown
who lived a long way down the road.

Bob knew he had to get Doc Brown
who lived a short way down the
road.

Bob got tired of all the running.

Bob was tired when he got to the
Doc's house.

He didn't mind running that far.

He didn't like to run very far.

He sat down to rest and forgot all
about his horse.

He sat down to rest only when he
knew his horse was all right.

APPENDIX C

WORD RECOGNITION TEST

badly	problem	birthday	won
runner	junior	grade	sadly
torn	grader	didn't	empty
football	stole	playground	I'll
yelling	fifth	forgot	trouble

APPENDIX D

PRACTICE PASSAGE

Mopeds are bicycles with motors. They go about 150 miles on a gallon of gas. A few years ago you did not see many mopeds on the streets. Now you see more and more of them.

Many people want to know if they are safe. Some mopeds can go 30 miles an hour. If you take a spill at that speed, you will get hurt. But there are ways to be careful. You can wear a helmet. You can steer around holes in the road. Slow down when you are making turns. Some people always ride with the lights on. That helps drivers of cars to see them.

Some people want to know if they are hard to ride. If you can ride a bicycle, you can ride a moped. You start it the way you do a bicycle--by pedaling. But you only pedal a few feet. Then you push a button to start the motor. To stop, just press the hand brake. That's all there is to it.

APPENDIX E

INTERFERENCE PASSAGE

Years ago there were plenty of fish around. Fish was cheap food.

That is no longer true. Now fresh fish is hard to get. Some U.S. waters have been fished out. Other waters are so dirty the fish have gone away. Fish are harder to find. So fish prices have gone up.

Some people ask, "Why not eat shark?" They say shark tastes good. And there are plenty of sharks in waters around the world.

Sharks are man-eaters. Now some people may become shark-eaters.

APPENDIX F

STORY RETELLINGS WHICH MAINTAIN INCONSISTENCY

Brother Story Retelling #2

There was a--there was this guy named Jimmy and he was in junior high school and they said that he was real brave, you know. And so one day he was walking like from--to go--his little brother was late, well, and so he went walking to his little brother's school --to see if--to see why his little brother was late. So then he saw a small guy and a big guy yelling at each other and he went over there and it was his little brother Tom and a fifth grader. Fifth grader was yelling at his little brother Tom because he was um he said he had stoled Tom's--wait, um--the fifth grader said that Tom had stoled his football. And he didn't but--Jim knew that Tom had got that football for Christmas and so then he went over there, and he got that fifth grader. He took him in the back like he took him and it was saying that Jim was real brave and everything and then when he had got the fifth grader he was all scared and he just walked out--out of the gate and left his brother behind--forgot about his little brother.

Horse Story Retelling #21

The story was about this guy named Bob and he liked to run a lot and while he was--he liked horses and he was running--he liked running long distances. Then he was--One day he was coming home from school and seen part of the fence was down and he went to the horse and the horse was on three legs and he went over there and one leg was badly hurt and so he so he says, "Oh, I'll run down to Doctor Brown's house." Well he goes in the house and gets his track shoes on and runs down the street. Then he sees his house and then gets tired and says, "I'm not used to running long distances," and take-- and then he sits down and takes a rest and forgets all about the horse.

APPENDIX G

STORY RETELLINGS WHICH RESOLVE INCONSISTENCY

Brother Story Retelling #28

This is about a boy who tries to help his brother. The boy, he's in seventh grade and he's--goes home or whatever, and finds out that his brother's late. So he goes, tried to find him. Then when he gets to his school he sees two people arguing and--and he sees that one of the kids is his brother. And they're arguing about a football and the kids saying that the kid stoled it and the the little kid's big brother comes over and grabs his little brother and says he'll take care of it. Then they just walk out of the playground.

Horse Retelling Story #8

One morning when the boy went--went out to feed the horse-- After he fed the horse he had to go to school so he went to school and on the way home from school the little boy saw a hole in the gate and he went to go find out what was wrong and he saw the horse out there on the other side of the gate, and his leg was hurt. So the boy went to go get his friend, a doctor. And the doctor put on his running shoes and started to run back to the horse and he got tired running so he sat down to rest and forgot about the horse.

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