

Comprehension of Content Area Passages: A Study of Spanish/English Readers in Third and Fourth Grade*

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Introduction

For all students, success in school is largely measured by the extent to which they become proficient not only in learning *how to read*, but especially in *learning from reading*. During the period when the student is learning how to read, the teacher is the primary agent responsible for presenting new concepts and expanding the student's knowledge base. Once the student has mastered the rudimentary skills in reading, the responsibility for acquiring new knowledge shifts from the teacher to the student. This means that, from that point on, the student must depend on his or her own comprehension of informational material as the principal source of knowledge (Reyes, 1984).

In most elementary schools, this shift in responsibility for learning occurs around third grade and coincides with the introduction of content area materials (e.g., social studies, science, geography, etc.) and with the introduction of expository themes in the language arts curriculum. With each year the child continues in school, content area materials (or informational texts) become increasingly prominent (Baker & Stein, 1979; Spiro & Taylor, 1980). Yet, despite the importance of content area materials, very little is known about the factors which influence chil-

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dren's comprehension of this type of text (Spiro & Taylor, 1980). Lack of information in this area can be attributed to two factors:

1. Most comprehension research has utilized narratives, or stories, similar to the types of materials which comprise the bulk of readings used in what Chall (1979) calls "the learning-to-read stage," when the teacher is still serving as the primary agent of learning.
2. Of the few studies using expository materials, most have been conducted with adults. Only a handful have been conducted with students who are at the stage when independent learning is critical.

What those studies do indicate, however, is that children acquire a schema for stories; that is, they learn that stories follow a predictable pattern. For example, there is always a setting and a character ("Once upon a time there was. . ."); there is a goal and a conflict ("who wanted to. . ., but. . ."); and a resolution of that conflict ("and they lived happily ever after"). This schema for stories is said to aid comprehension (Mandler & Johnson, 1977; Stein & Glenn, 1979).

Goldman, Reyes, and Varnhagen (1984) found that schemas for stories are helpful even when the story is presented in the student's less proficient or second language. In their study of comprehension of fables (a type of narrative) by students dealing with two languages (Spanish/English), they found that higher order skills involved in comprehending stories appeared to transfer to comprehension of stories in students' second languages. When producing story recalls and answering questions about the texts, many students used their first language, regardless of the input language of the text. However, these recalls reflected levels of *comprehension* of story materials that were equivalent for first and second language inputs. For example, native Spanish speakers accurately recalled material from stories presented in English, but did so in Spanish. The converse was true for those acquiring Spanish as a second language, Goldman et al. (1984) interpreted their findings as having indicated that whatever prior knowledge of story content and structure students had acquired through their first language was accessible, available and utilized during comprehension of second language story materials.

The literature on comprehension of expository texts, however, provides no evidence that children acquire or use schemas analogous to those used for stories when comprehending expository texts. Therefore, comprehension of expository materials is believed to be more difficult than comprehension of narratives (Baker & Stein, 1979), and may be more dependent on expertise in a content domain.

While the literature on learning from text for native English speaking children is limited, the information available about Hispanic students'

abilities to learn from text is almost nonexistent. Because Hispanic students, limited or non-English speakers, function in a dual language environment, they bring some unique skills and/or problems to the reading comprehension task. The rapidly growing number of minority language students in the public schools begs an examination of the reading performance of those students. In light of the almost 50% drop-out rate of Spanish-speaking students in junior high and high schools, the need for such studies has an even greater sense of urgency.

The purpose of this study was to examine the comprehension of informational material by limited-English proficient students in third and fourth grades who were enrolled in Spanish/English bilingual education programs. In the context of this paper, "expository text" is defined as reading material whose primary function is to provide new information about a specific topic. To distinguish the term "expository" from other uses of the term, this type of text will be referred to as "informational text." Specifically, the study was designed to address three questions:

1. Whether access to two languages affects the learning of new information by bilinguals when there is no prior knowledge of the topic,
2. Whether there is a relationship between what bilinguals learn from passages presented in Spanish and what they learn from passages presented in English,
3. Whether the writing style of the text influences the amount, or quality, of the information learned from the text.

Spiro and Taylor (1980) have suggested that the form of linguistic expression is a potentially important factor that influences learning from informational text. Forms of linguistic expression are related to the level of vocabulary, the range of sentence constructions (e.g., active or passive), and the degree and type of figurative language that appears in texts. Figurative language, such as metaphors, analogies, and personification, is often used to stress or embellish information which may be conveyed literally and explicitly elsewhere in the text. In elementary school readers and in content-area textbooks (e.g., science, social studies), examples of analogy and personification are frequently found. Often, the style of presenting information in these books is informal and directed at the young reader by the use of the second person pronoun "you". Rubin (1980) refers to this medium-related dimension as "involvement." The text may contain contractions, reflecting more of an informal, oral language approach.

This informal approach to presenting content-area material does not appear to have an empirical base. There are, however, two general pos-

sibilities regarding the effects of the use of informal linguistic expression in content-area materials:

1. The texts may be easier to learn from, and easier to understand because there is a better match between oral language and written language in the informal version as compared with the formal texts.
2. The closer match to oral language may make learning from the informal text harder because the discourse function (to inform) is masked by the informal linguistic expression.

This study investigated these two possibilities. In addition, it examined how the formal and informal styles affected comprehension of English for Spanish-speaking readers. A hypothesis was that informal expression would be more beneficial to second language learners than to monolingual English students because the "closeness" to oral language might facilitate comprehension for English as a second language (ESL) students, rather than create any potential "interference" (confusion) due to the informality of the passage.

Learning from text was examined using the topic of vanishing animals. The topic and the four specific animals that the passages described were selected for their unfamiliarity to the participants. The focus was, therefore, on the amount of new information that could be learned from passages presented in English and in Spanish by students at different levels of proficiency in each language.

Subjects. Eighty-eight students from third and fourth grade classes from a public school in Southern California participated in the study. The attendance area includes a low-cost, federally subsidized housing project, community housing tracts, various ranches, and a naval military installation. Approximately 90% of the children's parents are considered unskilled or semi-skilled. The school serves kindergarten through fifth grade, and has an enrollment of approximately 500 students. Of the total enrollment, 78% were classified as limited English proficient (LEP) students, with Spanish identified as their first language (L1) and English as their second language (L2). When the study began, the school had just completed 4 years of Title VII (ESEA) funding, and was supporting the bilingual program with state and local funds.

The third grade participants ($n = 40$) were divided into three groups:

1. Bilingual Spanish readers ($n = 16$; mean age 8.8 years). The students selected for inclusion in this group had been in the bilingual program for 3 years and were classified as LEP students. They had begun their formal reading instruction in Spanish, and had continued with

Spanish as the primary medium for reading. Students in this group were either at, or above, grade level in Spanish, based on the reading textbook series they were using, or were at grade level based on scores from the *California Test of Basic Skills en Español* (CTBS, 1978), administered at the end of the 2nd grade. When the study began, only four of these students had received 1 month of formal instruction for transition to English reading. This consisted of approximately 1 hour of after-school introduction to English, phonics, and practice in oral English reading conducted on a volunteer basis by some of the designated Bilingual certificated teachers.

2. Bilingual program, English-transitioned readers ($n = 8$; mean age 8.5 years). These students had been participants in the bilingual program for 3 years, although not all of them had begun reading in Spanish. Four students were classified as fluent English proficient (FEP) when they enrolled in school and had begun formal reading instruction in English; four students were transitioned to English reading by the end of the first grade. None of these students had received formal Spanish reading instruction in either second or third grades. These students were at, or above, grade level based on the reading section of their achievement test scores and were at grade level in English reading textbook series.

3. Monolingual English readers ($n = 16$; mean age 8.8 years). All of these students had been classified as FEP upon entrance to school. Both Anglos and Chicanos (Americans of Mexican descent) comprised this group. These students had begun formal reading instruction in English and had received no instruction in Spanish, oral language, or reading. None had ever been enrolled in a bilingual program. All were at grade level in reading according to their reading book series, and/or achievement test scores. This group of third graders received only English language versions of the passages.

There was a total of 48 fourth grade students. They were divided into bilingual readers ($n = 32$, mean age 10.3 years) and monolingual English readers ($n = 16$, mean age 10.4). The bilingual students had been enrolled in a bilingual program for a minimum of three years and met the following criteria:

1. Were at grade level on the Spanish CTBS (1978) reading section and/or fourth grade Spanish reading series, with a minimum of second grade reading level in English, or
2. Were at grade level on the English CTBS (1977) in reading, and/or were reading fourth grade English language texts, with a minimum of second grade reading levels in Spanish.

The monolingual English group had been classified as FEP upon entrance to school. Both Anglos and Chicanos comprised this group. The only formal reading instruction for this group had been in English. These students were either at grade level on their reading achievement test scores or were using fourth grade level reading books.

Materials and Design

Materials consisted of two versions (a formal and an informal style) in two languages (Spanish and English) of the same four informational passages on vanishing animals: the aye-aye, the chinchilla, the quetzal, and the vicuña. The passages were modified for comparability across the four topics and were subsequently translated to Spanish. Each passage began with a general statement of the endangered animal and was followed by a more detailed description of that animal. The information in each passage was organized into six short paragraphs in all versions of the passages. Each contained information about the problems of extinction, origin of name, habitat, physical description, and diet. Each passage contained six categories of information and 27-28 facts.

The formal version of the set of passages presented information without any direct reference to the reader. No contractions were used. In contrast, the informal version of the set of passages included the "involvement" dimension (Rubin, 1980) and made many direct references to the young reader, utilized contractions, and included humor and personification, thus reflecting more of an informal oral language style. The informal version was developed by taking the formal version in toto and embedding four types of informal mechanisms:

1. Deliberate attempts to involve the reader by addressing him or her in the second person, "you"; e.g., "Can you imagine . . .," and "If you were a . . .".
2. Use of humor/personification of animals; e.g., "Chinchillas don't use coats."
3. Comparison of the reader's attributes or characteristics with the animal's attributes or characteristics; e.g., "You work and play during the day; chinchillas sleep during the day."
4. Use of contractions; e.g., "can't," "you're."

There were five informal mechanisms distributed throughout each of the informal passages. As a result, the informal versions were slightly longer than the formal versions. The two versions, however, contained

the same number of informational units or facts. Table 1 shows the formal and informal version of the aye-aye passages. For each topic, a reproduction of the photograph of the vanishing animal was prepared.

Latin-square counterbalancing procedures were used to generate four topic orders and four condition orders (language x version) for the students in the bilingual program. These students read four different texts: Spanish, formal; Spanish, informal; English, formal; and English, informal. The monolingual English groups read two formal English and two informal English.

The design, excluding the factors introduced by counterbalancing procedures, was a mixed design with repeated measures for both the bilingual and the monolingual samples. For the bilingual sample, there was one between-subject factor (grade) and two within-subject factors: language of input (Spanish or English) and version (formal or informal). For the monolingual sample, grade (3rd or 4th) was the between-subjects factor, and version the within factor.

Procedure and Tasks

Subjects were tested individually. They were shown a picture of the animal and were asked whether they had ever seen or knew anything about that animal. If they reported yes, they were asked to tell about it. Not one subject was able to provide any accurate information on any of the four topics. The students were then asked to read the passage and afterwards to tell everything that they could recall. In contrast to requiring an input/output language match which is the common practice in the testing of bilinguals, in this study students were permitted to respond in the language of their choice, regardless of the language of the text, consistent with the methodology followed by Goldman et al. (1984).

Comprehension questions were asked immediately following the conclusion of the recall for the passage. Questions were asked orally and in the language the child used during recall, or in both languages, the goal being to ensure that the child understood the question.

Approximately 2 weeks after completion of the reading task, a listening task was administered to the third grade bilingual program participants (both Spanish readers and English readers). The Spanish readers from the bilingual classroom were asked to listen to the two English passages which they had attempted to read earlier. These were presented via audiotapes. Conversely, the English readers from the same bilingual classroom were asked to listen to the two Spanish passages that they had attempted to read earlier. The rationale for this "add-on"

Table 1. Formal and Informal Aye-Aye Texts

Formal voice:

THE AYE-AYE

There is an animal that some people believe brings bad luck. It is in great danger of being destroyed. That animal is the aye-aye.

The aye-aye is a strange animal about the size of a cat. It belongs to the same family as the monkey. Sometimes the aye-aye makes a noise that sounds like "aye-aye." That is how it was named.

The aye-aye lives in trees on a large island off the coast of Africa. It can be found alone among the trees in the forest.

The aye-aye looks like a raccoon. It has a wide bushy tail and very strong teeth. The aye-aye has strange-looking hands. The middle finger on each hand is much longer and thinner than the other fingers.

The aye-aye is nocturnal. It sleeps during the day, and comes out at night. Then it jumps from branch to branch looking for food. With its teeth, it makes tiny holes in tree trunks. Then it reaches in and pulls out little caterpillars that it eats. To drink, it dips one long finger into water and it pulls the finger sideways through its mouth!

The aye-ayes are almost extinct because almost all the forests where they live have been cut down. Many people also try to kill aye-ayes when they see them because they believe that aye-ayes bring bad luck. So the aye-aye is in bad trouble. There are only about 50 little aye-ayes left in the whole world. The aye-ayes may not be able to survive much longer.

Informal voice:

THE AYE-AYE

Can you imagine how it would be if 8 to 10 year-olds were considered bad luck? You would always be in danger. There's an animal that some people believe brings bad luck. It's in great danger of being destroyed. That animal is the aye-aye.

The aye-aye is a strange animal about the size of a cat. It belongs to the same family as the monkey. Sometimes the aye-aye makes a noise that sounds like "aye-aye." That's how it was named.

You're lucky you don't have to live alone. You live in a house with your family. The aye-aye lives in trees on a large island off the coast of Africa. It can be found alone among the trees in the forest.

The aye-aye looks like a raccoon. It has a wide bushy tail and very strong teeth. The aye-aye has strange-looking hands. The middle finger on each hand is much longer and thinner than the other fingers.

You work or play during the day, and sleep at night. The aye-aye does the opposite. It is nocturnal. It sleeps during the day, and comes out at night. Then it jumps from branch to branch looking for food. With its teeth, it makes tiny holes in tree trunks. Then it reaches in and pulls out little caterpillars that it eats. To drink, it doesn't need a glass like you. The aye-aye dips one long finger into water and pulls the finger sideways through its mouth!

The aye-ayes are almost extinct because nearly all the forests where they live have been cut down. Many people also try to kill aye-ayes when they see them because they believe that aye-ayes bring bad luck. So the aye-aye is in bad trouble. How sad it must be for the aye-aye! There are only about 50 little aye-ayes left in the whole world. The aye-ayes may not be able to survive much longer.

activity was to find out the degree to which these students could understand oral presentation of content-area material after 3 years of ESL instruction. The findings from this task are important because the kind of information contained in these passages is similar to content area material which might be presented in a traditional English-only class. Thus, for those students who did not appear to learn from independent reading of content-area texts in English, their ability to listen and learn from the same text was investigated.

The recall protocols and responses to comprehension questions were scored for the number of presented facts that were mentioned. The total number of facts in the formal and informal versions of each text topic was the same, although not each topic had the same number of facts. The texts on the aye-aye topic contained 27 facts, and the chinchilla, vicuña, and quetzal topics each contained 28 facts. Proportion of facts recalled was the measure used in the analyses. This was determined by comparing the number of facts recalled to the total number of possible facts that could have been given for a text topic, i.e., 27 or 28. Thus, if a student recalled 20 out of 27, his or her score was .74.

Results and Discussion

There are two striking results that emerge from a comparison of the recall performance among these five groups:

1. The proportion of facts recalled by each group in its first language is equivalent for all groups within grade levels.
2. The lower performance in English recall among the third grade bilinguals appears to be temporary, and levels off by the fourth grade for those who continue in the bilingual instructional program.

Free Recall Measure. Analyses of variance were conducted on the proportion of facts recalled from each informational passage. Results of this study on comprehension of content area passages indicated that mode of presentation for content area materials, as defined by formal and informal voice, did not facilitate recall. There were no main effects on either amount or quality of recall due to version (formal or informal) of the passages.

With respect to effects due to input language, among the bilingual third graders there was a significant interaction of language and group, $F(1, 22) = 17.53, p < .01$. Means for the interaction are given in Table 2. After reading, the third grade bilingual Spanish readers recalled more

facts when the input language was Spanish (Mean = .17) than when the input language was English (Mean = .06). Since the primary task involved reading skills, the outcome was not surprising, given that this group had not yet transferred to English reading. The inverse pattern held for the third grade transition group, who were English readers. They recalled more after English input (Mean = .22) than after Spanish input (Mean = .11).

The data indicate a relationship between having had formal reading instruction in a language and the ability to get new information through reading a text in that instructed language. This relationship is totally consistent with LaBerge and Samuel's (1974) claim that the capacity to process codes (i.e., decode words) is critical to proficient reading. In the case of these two groups, it appears that decoding skills in L2 (i.e., English for the third grade bilingual group, Spanish for the third grade transition group) have not become sufficiently automatized and require relatively constant monitoring. There is, thus, little capacity for the processing of new information. This is then reflected in lower levels of information acquisition in during L2 reading.

The fourth grade bilinguals, whose data are also shown in Table 2, recalled exactly the same amount of information after Spanish input as after English input, Mean = .23. Thus, performance after English input was no longer different from that after Spanish input once students had had two-thirds of a year of English reading instruction. The greatest portion of the instruction focused on breaking the orthographic code and learning to read in English, i.e., on learning decoding.

For the third and fourth grade English monolingual students, grade was significant, $F(1, 30) = 4.25, p < .05$, whereas version was not. Fourth graders recalled more (Mean = .28) than third graders (Mean = .21).

A comparison of the fourth grade English monolinguals and fourth grade bilinguals revealed that mean recall for both groups after English

reading was equivalent, $t(46) = 1.28, p > .05$. Among the third grade groups, a comparison of performance in each group's primary language also indicated that the recall of third grade bilinguals after Spanish reading (Mean = .17) was equivalent to the recall of the English monolinguals after English input (Mean = .21). These results indicate that performance levels for the languages in which children were receiving instruction were equivalent among the third grade groups. An implication of these results is that reading instruction in L1 does not retard literacy skills in L2, and that those learning the skills in L1 are learning them at a pace similar to the pace of the L1 English learners.

Comprehension Questions. Part two of the reading-to-learn task in this study was recall of facts as measured by probe questions. The rationale for this activity was to ascertain whether failures to recall more of the presented information were due to high language production requirements in the recall task or "lack of acquisition" of the information. A general belief is that probe questions assist the individual in recalling information, because they provide a specific direction for the memory search often required during retrieval.

The data from the recall task and the probe task were submitted to analyses of variance. The results indicated that, contrary to expectation, the mean proportions of facts given in the probe task were no different than those in recall. In fact, the pattern of results from the probe task replicated that of the recall task. The relevant data are given in Table 2.

In general, group performance indicated similar quantities of information were remembered under the two tasks. For example, in the fourth grade bilinguals, the mean proportion of facts recalled was .23, for both Spanish and English input; in the probe task, the mean after Spanish input was .24, and, after English, it was .22. Furthermore, the same conclusion applies to individuals: students who performed well in the recall task also performed well in the probe task. A series of Pearson product moment correlations were conducted, and strong positive correlations between the two tasks in each language were obtained in each group. Figure 1 shows the relationship between the two tasks for the fourth grade bilinguals after English (a) input and after Spanish (b) input. For the other groups, the correlations ranged from $r = .63$ to $.93, p = < .01$. For the most part, students did not provide any additional information beyond what they had given in the free recall, suggesting that, when a student has little or no prior knowledge of a topic, probe questions do not provide any particular advantage over free recall.

Relationship Between L1 and L2. At the subject level, this study was also concerned with the relationship between the individual student's ability to learn in his or her first language and second language. The question of interest was the extent to which performance levels in the

Table 2. Mean Proportion of Facts from Recall Task and Probe Task

Group	Recall Task Input Language		Probe Task Input Language	
	Span.	Eng.	Span.	Eng.
Third gr. Bilingual	.17	.06	.19	.08
Third gr. Transition	.11	.22	.10	.21
Third gr. Monolingual	—	.21	—	.24
Fourth gr. Bilingual	.23	.23	.24	.22
Fourth gr. Monolingual	—	.28	—	.28

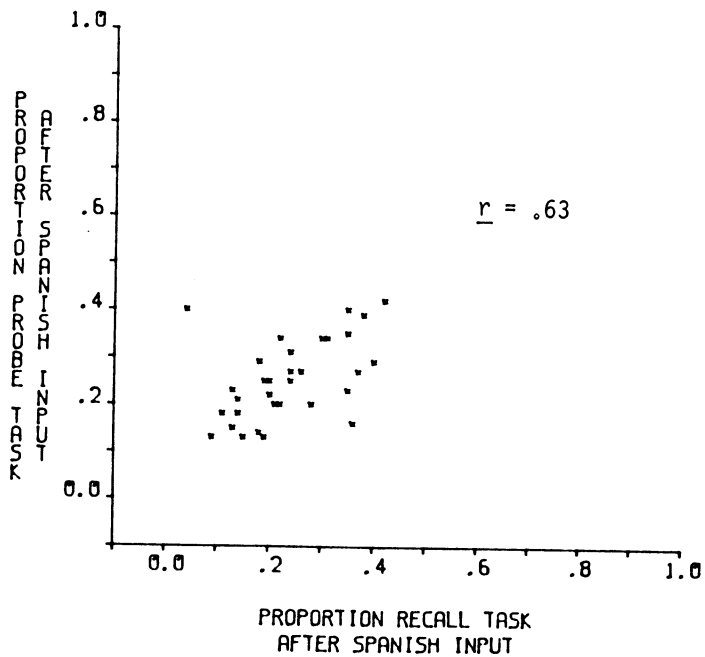
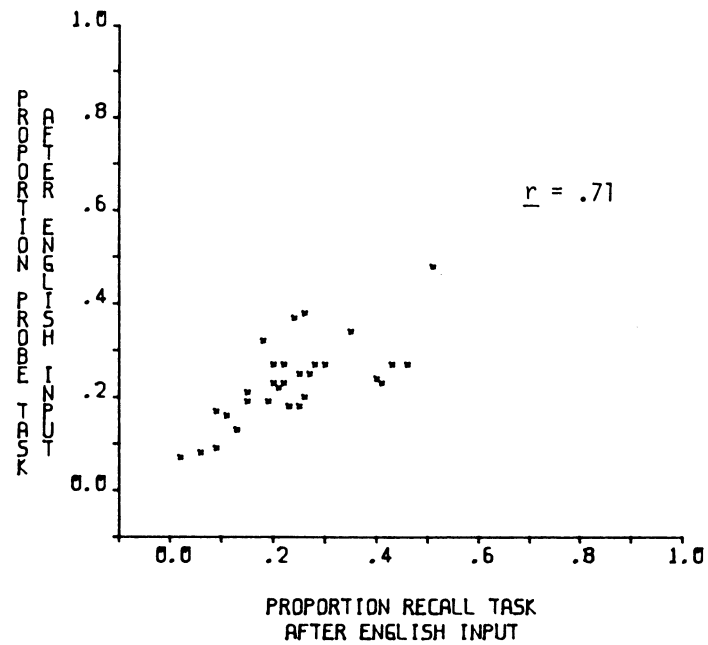


Figure 1. Relationship between recall and probe tasks after English (a) and Spanish (b) input for fourth grade bilinguals.

primary language could predict performance levels in the second language. The relationship is expected to increase in a positive direction as the child improves his or her reading skills. Thus, a positive correlation would indicate that students who performed well in Spanish reading would also perform well in English reading, and that those who would not perform well in Spanish would not perform well in English.

Correlations were computed between recall performance after Spanish input and after English input for the bilingual groups. Figure 2 shows the scatterplot for the fourth grade bilinguals. There is a significant positive correlation, $r = .62$, $df = 30$, $p < .001$. This suggests that skills involved in the acquisition of new information in Spanish may be transferred to the acquisition of new information in English. For the Spanish-only and English-only third grade readers in the bilingual program, relationships between L1 and L2 performance were nonsignificant. This was undoubtedly due to extremely low levels of performance in L2 by these groups, neither of whom had had decoding instruction in L2.

Reading Task versus Listening Task. Two separate analyses of variance were conducted comparing the reading and listening task for the third grade bilingual and third grade transition groups. Results of these indicated that task was significant. For the third grade bilingual Spanish readers, performance after listening to English texts (Mean = .16) was significantly higher than after reading English (Mean = .06), F

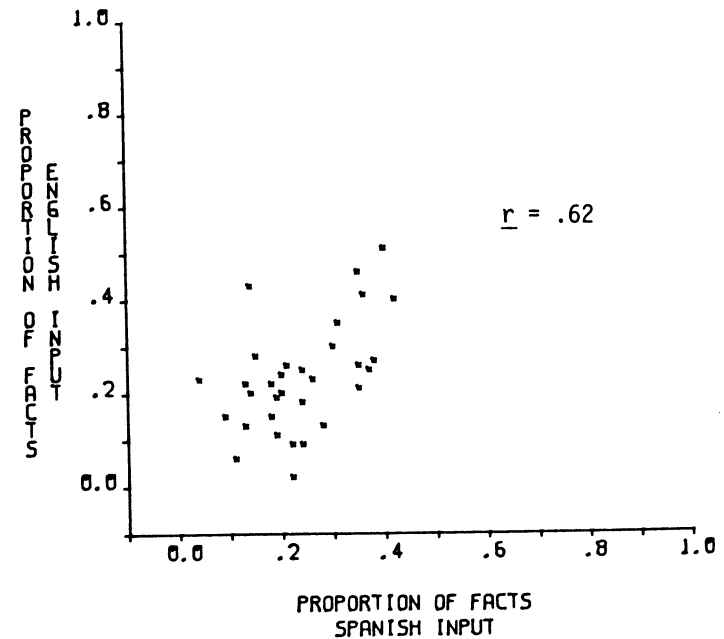


Figure 2. Relationship between proportion of information recalled after Spanish and after English input for the fourth grade bilinguals.

(1.15) = 15.96, $p < .001$. The third grade English readers also performed better after listening to Spanish texts (mean = .18) than after reading them (Mean = .11), $F(1,7) = 10.20$, $p < .02$.

The data from the listening task is somewhat problematic to interpret because it is a re-presentation of the passages. However, the data demonstrate that, although there are constraints on L2 reading skills, receptive skills are present and enable these students to comprehend content in L2 through a listening mode.

Information Categories. In addition to the quantity of facts recalled, an examination of the quality of recall was conducted. This was done to determine whether the types of information items recalled by students were similar or different. Table 3 shows the breakdown of the aye-aye formal text into the various information categories contained in that text. The results from this analysis indicated that information about (E) diet (Mean = .37), (A) problems of extinction (Mean = .35), and (F) unusual characteristics (Mean = .23) ranked among the top three types of statements recalled by all groups, both bilingual and monolingual. Information relating to physical description (B), habitat (D), and origin of name (C) ranked fourth, fifth, and sixth in order of recall.

The ranking of Category A statements is not surprising, given the organization of the texts. Recall for this category by all groups is consistent with Meyer's (1975, 1979) studies of top-level structure which indicate that students' recall is influenced by passage organization. Since elaboration of the problems of extinction appeared twice in the texts, and the average number of facts for Category A was 5, the results may indicate a facilitative effect of primary/recency factors, and/or redundancy in the recall patterns.

Neither a large number of statements, nor structure, account for the top ranking of information about diet. There was an average of 1.5 of these types of statements across the four texts, as compared to an average of 7 statements for unusual characteristics, for example. The results are not so easily explained, since it is difficult to determine young children's reasons for finding the subject of diet particularly noteworthy. One can only surmise that it might be related to the fact that eating is one of children's central activities.

In general, third and fourth graders, bilingual and monolingual students, appear to have behaved similarly with respect to the types of information items that were best recalled across texts and in both languages. While the fourth graders generally recalled more facts, third graders recalled the same types of information categories. There were no differences in the rank ordering of categories within grades, between grades, or between tasks.

Conclusions and Implications

As stated earlier, there were no significant differences in levels of recall for the formal or informal style of the texts, either between or within grade levels. Two explanations are plausible for this outcome. One is related to the method of developing the informal version (i.e., the informal version included the formal version in toto and embedded five informal mechanisms), the other to the interactional setting provided by the experimenter. Mosenthal & Na (1980) argue that the task organizers, and the interaction between them and the students, may be the most important factor influencing reading comprehension. There are strong indications that, in this study, the experimenter's role as situation organizer may have overridden the formal/informal text manipulations. The experimenter had collected other data at the same school site the previous year, and was acquainted with many of the children who had participated in the study. Being bilingual, familiar with the school, and well acquainted with the children's socio-economic, cultural, and linguistic background, she may have provided a unique social interaction with the students which may have had a greater influence on their recall performance than did the form of linguistic expression of the texts.

Once in the testing room, the bilingual students, in particular, were reluctant to participate, fearing that the situation might call for "un examen" (a test) in which they would not perform well, or which would require a grade. To allay their insecurities, the experimenter created a highly personalized interaction between herself and the subjects, encouraging them and assuring them that it was okay not to know everything. The experimenter used phrases such as: "No te preocupes, yo te ayudo" ("Don't worry, I'll help you"), "Ándale, dime poquito más. Yo sé que sabes más" (Come on, tell me a bit more. I know you know more"), etc. Outside of the testing situation, and while waiting for the next subjects, the experimenter often chatted with the students during recess, lunch, or after school.

The results of the study, with respect to the influence of the formal/informal version, then, must be interpreted in the context of the interactional setting and the rapport that developed between the experimenter and the students. There were many instances when the bilingual students expressed their lack of confidence with English and the encouragement from the experimenter seemed to make a difference in their efforts. These findings are believed to have significant implications for classroom practice, because they suggest that performance levels of the students with both Spanish and English input might have been much lower with a nonbilingual experimenter, who might have been less sen-

Table 3. Breakdown of Information Categories for Aye-Aye Text

Information Categories	THE AYE-AYE
A = problem of extinction	1. There is an animal
B = physical description	2. that some people believe brings bad luck.
C = origin of name	3. It is in great danger of being destroyed.
D = habitat	4. That animal is the aye-aye.
E = diet	5. The aye-aye is a strange animal
F = unusual characteristics	6. about the size of a cat.
	7. It belongs to the same family as the monkey.
	8. Sometimes the aye-aye makes a noise
	9. that sounds like "aye-aye."
	10. That is how it was named.
	11. The aye-aye lives in trees
	12. on a large island
	13. off the coast of Africa.
	14. It can be found alone
	15. among the trees in the forest.
	16. The aye-aye looks like a raccoon.
	17. It has a wide bushy tail
	18. and very strong teeth.
	19. The aye-aye has strange-looking hands.
	20. The middle finger on each hand is much longer
	21. and thinner than the other fingers.
	22. The aye-aye is nocturnal.
	23. It sleeps during the day,
	24. and comes out at night.
	25. Then it jumps from branch to branch
	26. looking for food.
	27. With its teeth, it makes tiny holes in tree trunks.
	28. Then it reaches in and pulls out little caterpillars
	29. that it eats.
	30. To drink, it dips one long finger into water
	31. and it pulls the finger sideways through its mouth!
	32. The aye-ayes are almost extinct
	33. because almost all the forests where they live
	34. have been cut down.
	35. Many people also try to kill aye-ayes
	36. when they see them
	37. because they believe that aye-ayes bring bad luck.
	38. So the aye-aye is in bad trouble.
	39. There are only about 50 little aye-ayes left in the whole world.
	40. The aye-ayes may not be able to survive much longer.

sitive to the verbal and nonverbal feelings of inadequacy which these second language learners expressed. Sensitivity to students, cultural congruence, and the informal social interaction created by the teacher is believed to be critical in the development of a learning environment which will be conducive to the academic success of bilingual students. Without that positive learning environment, bilingual students may continue to perform at less than satisfactory levels in academic tasks.

Others (see Boggs, 1972; Jordan & Tharp, 1979; Au & Jordan, 1981) have also found that the social context of a lesson is very important to minority language students. In their work with Hawaiian children, Au and Jordan (1981), for example, highlight the importance of this social context by stating that "A teacher who has not already established the proper interpersonal relationships between herself and the children would not be able to teach reading lessons . . . The children simply would not be responsive" (p. 146).

The performance levels of the bilingual groups indicate that, contrary to a general assumption held by many, dealing with two languages in elementary schools does not lead to lower levels of reading performance. On the contrary, beginning reading in the primary language appears to be more effective in the long run partly because it capitalizes on the cognitive and linguistic abilities of the children. In the bilingual classes, the scores for third grade Spanish readers were equivalent to the scores of the third graders who had transitioned to English reading. Additionally, the performance of the third grade English monolinguals who had never received bilingual instruction was also equivalent to the performance of the English reading group who were assigned to a bilingual class. Thus, when performance levels of these groups were compared in the language in which each group was receiving formal reading instruction, there were no significant differences.

The fourth grade bilingual group exhibited equivalent levels of recall after both English and Spanish input. Their performance after English passages was equivalent to that of the fourth grade English monolingual students. By fourth grade, it appears that Spanish and English skills level off for those who remain in the bilingual program, and that there is equal access to learn from text in either language. What this means is that instruction in two languages for bilinguals does not have a negative cognitive effect.

In most cases, the "catching-up" period for these fourth grade bilinguals occurred after less than 1 year of formal instruction in English reading. The period required for the two languages to level off and for bilinguals to reap the benefits of bilingual instruction is, at least in this case, consistent with Cummins' (1981) "threshold hypothesis." That hypothesis maintains that there may be a threshold level of linguistic

proficiency which bilinguals must attain in order to derive potential benefits of bilingualism and avoid any negative cognitive effects.

The data from the fourth grade bilinguals offer strong support for the current practice in bilingual programs of introducing literacy skills in the primary language. The performance of this group indicates that, once decoding skills have been sufficiently automatized in Spanish, and when ESL instruction is maintained, transfer from Spanish reading skills to English reading skills occurs within a relatively short time. Acquisition of literacy skills in English is not impaired, and the reading skills already available in Spanish are easily transferred to English. In addition, for language minority students exposure to two languages provides the potential for another positive and desirable by-product: the retention of primary language skills.

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Oral Reading Miscues of Hispanic Good and Learning Disabled Students: Implications for Second Language Reading

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Introduction

A major thrust in the testing of linguistically and culturally distinct students has been directed toward the identification and development of appropriate, bilingual, nonbiased assessment procedures which will accurately assess student competencies and potential for learning (Baca & Chinn, 1981; Bailey & Harbin, 1980; Duffy, Salvia, Tucker, & Ysseldyke, 1981). A common characteristic of these procedures has been a primary focus on the structural features of language rather than on the semantics and use of language (Holland, 1975; Rees, 1978; Reid & Hresko, 1981). In cases where an effort is made to give language assessment tests in both Spanish and English, instruments usually follow the pattern of those designed in English, focusing on the student's ability to use a "standard" language correctly. These factors serve to highlight student deficits rather than their strength in language use.

Few studies in the area of learning disabilities have focused specifically on Hispanic students (Bernal, 1983). Little is known about these students' characteristics using test instruments which focus on semantic information and reading strategies, and which view these strategies within the context of a first and second language learning interaction. Information is also lacking on the ways in which young primary Spanish readers transfer reading skills to English reading. If the difficulties encountered by second language readers beginning to develop reading skills in English are not understood, they may be perceived as reading disorders or learning disabilities.