Children's Knowledge of Environmental Print

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Children spend a large portion of their time in the home environment where they engage in many activities. Teachers hope that these learning experiences will reinforce the concepts, skills and values that constitute the school curriculum. The greater the correspondence between environmental learnings and school activities, the more likely that transfer will take place. Children's contact with words in the environment builds a foundation for literacy because "all meanings that are attached to the words that we use in language are obtained through experience" (Ross and Roe, 1990, p. 6). But the question, *Do teachers use children's environmental experiences to enhance instructional activities?* is one that should be asked.

The environment contributes greatly to the educational and socialization process. Smith (1992), for example, stated that "four-year-olds learn about 20 new words a day" (p. 434), and children learn these words when they are involved in daily activities. Vacca, Vacca and Gove (1991) asked the question "When aren't children confronted with written language in some form in their immediate environment?" (p. 65) to show the ever-presence of environmental print. The daily routines of preschool children build an experiential foundation for future learning activities. Although

many of these activities are incidental in nature, these experiences are neither trivial nor unimportant. Parents can play a vital role in enhancing this learning by using positive reinforcement and, more specifically, by providing planned or contrived activities. As Mason (1980) stated, "Children who are guided by parents to attend to letters, signs and labels, and are given opportunities to read, spell and print words, learn some of the essential rudiments of reading even before going to kindergarten" (p. 203).

Parents are not constrained to wait for literacy to develop because they can take their children to print-rich places (e.g., zoos, airports or shopping centers). With their parents, children regularly visit grocery stores, variety stores, hardware stores, and fast-food restaurants. Most of these businesses are rich sources of print and offer children many chances for literacy experiences. In addition to the previously named private establishments, Tinker (1971) recommended libraries, fire stations, police stations and natural history museums as being good places for children to visit. The public print usually names products, shopping specials or commercial enterprises. Even cereal boxes contribute to the introduction of reading because "the sides of these boxes now display cartoons, riddles and jokes which must be read to be understood" (Tinker and McCullough, 1975, p. 405). The environment is a cornucopia of words and children can easily find print "in books, supermarkets, department stores, fast-food restaurants and on television, signs and a variety of printed materials from TV Guide to labels on household products" (Vacca, Vacca and Gove, 1991, p. 65).

The importance of children's knowing environmental words prior to entering school should not be overlooked; as Mason (1980) observed, "It is entirely possible that children

entering school who are able to read words from cereal boxes, restroom doors, store fronts and traffic signs have an important advantage over other children in learning words and reading stories" (p. 206). Children's future reading performance, more than likely, can be enhanced by parental use of environmental print for educational purposes. Reading has been recognized as the key that unlocks the door to learning; hence, every opportunity should be taken to develop this skill. As Brown and Briggs (1991a) stated, "Children should be encouraged to participate in environmental literacy activities because these experiences are indispensable to language development" (p. 152).

In a normal and natural way in their environment, children are taught the importance of reading. By listening and talking to others in school and outside of school, "children come to expect language to be used in certain ways and for certain purposes" (Piazza and Tomlinson, 1985, p. 151). Milner (1951) suggested that teachers provide "extensive opportunities [for the child] to leaf through, explore and ask questions about briefly-captioned picture books depicting objects and situations close to the child's experience" (pp. 111-112). In school, children see their classmates, teachers and children in other classrooms reading books, magazines, newspapers, and other printed materials. Consequently, "by observing... others interacting with print, children learn that reading and writing have functional environmental uses" (Brown and Briggs, 1987, p. 278).

The environmental vocabulary
Many children enter school with a number of words in their sight word vocabulary. A sight word is "a word memorized or recognized as a whole, rather than by its parts blended together to form the whole" (Good, 1973, p. 650). The sight word vocabulary, accordingly, is composed of

words which the child recognizes immediately in reading. There is a vocabulary that children develop as a natural consequence of interacting with print in the home, neighborhood, and community — the environmental vocabulary. Children acquire this vocabulary naturally as they encounter printed words during daily activities. These words become part of the speaking and the recognition vocabularies as children hear the words spoken, see the words in print, and connect or associate the two. Children develop meaning for these words as a result of having sensory contact with things in their environment; such as eating candy, ice cream and fresh fruit; drinking cold drinks; visiting museums, fire stations and shopping centers. Indeed, these activities would reinforce the children's knowledge of environmental print because children quickly associate products and places with printed words.

Adults and children mutually share contact with environmental print. Because of the individualization of these experiences, the environmental vocabulary, in any case, would have an idiosyncratic nature because children develop this vocabulary as they interact with rather specific print. Logically, then, this vocabulary would vary from child to child, but some of the same words would be found in the environmental vocabularies of many children. The number of environmental words that children learn would be determined by the size and clarity of the print, the precociousness of the children, the familial structure and level of verbal interaction, the frequency of contact with print, the social and emotional consequences related to the print, the positive or negative reinforcement received when the printed words are seen, and the literacy experiences provided by teachers. The purpose of the present study was to determine the type and number of words that were in the environmental vocabularies of a selected group of second-grade students.

The findings of this study should alert teachers to the fact that children have an environmentally-developed vocabulary that could be utilized in planning literacy experiences.

The sample and the method

To determine what print children see, read and remember, a random sample of 46 second-grade children, 24 boys and 22 girls, was selected. Representing lower, middle and upper socioeconomic classes, the children came from a city of less than fifty thousand population. All the students attended the same elementary school, which was located in the most affluent section of the city; thus, many of the children were from the higher socioeconomic level. To determine which words compose the environmental vocabulary, the children were asked to write all the printed words that they remembered seeing in their environment. No attempt was made to assess word production by sex or ability. The children compiled their word lists during the spring semester of the second grade. The words were not just recognition words because the students had to recall and write each word without any visual or verbal stimulus. This would, after all, restrict the number of words but would ensure that only the best-known environmental words would be listed. The present research was different from other studies that have used environmental logos and other print to determine the sight word vocabularies or the discrimination abilities of preschool children (e.g., Goodall, 1984; Hiebert, 1981; Masonheimer, Drum and Ehri, 1984; Wepner, 1985).

The words that the children wrote were arbitrarily divided into nine groups. Most of the words were put into eight specific categories; "miscellaneous" was used to group those words that could not be classified otherwise. The divisions gave order and structure to the environmental

vocabulary and helped present a clearer picture of the words that the children were attracted to or, perhaps, merely the words which were most often seen and recalled.

Table 1
Environmental Vocabulary Production by Category

Category	Total # of Listings for Category	# of Different Items	% of Total Word Production
1. Stores	111	39	27.28%
2. Meat	59	17	14.50%
3. Vegetables	46	15	11.30%
4. Fruits	44	9	10.81%
5. Desserts	37	15	9.09%
6. Road signs	34	19	8.35%
7. Other grocery items	31	22	7.61%
8. Drinks	28	14	6.88%
9. Miscellaneous	17	8	4.18%
Grand Total	407	158	100.00%

Findings

The second-grade pupils observed, remembered and wrote more names of stores than the words in any other category of environmental print. The store names written by the children represented 27.28 percent of the total word production (see Table 1, Category 1), and this group had the greatest variability with 39 different listings. Possibly the large production for this category could be explained by the size of the store signs, the eye-catching colors and designs of the signs, and the frequency with which the signs were seen. The children ($n = 46$) listed one store — Safeway— more often than any other environmental word with 45 percent of the children writing this store name. Obviously, on many occasions, the children went shopping at this particular store, and each trip reinforced the children's word perception and understanding as the name of the store was

said and the sign was seen. The next most listed words in this category were *store*, *Piggly Wiggly*, and *Wal-Mart*, with a frequency of 11, 9 and 8 respectively (see Table 2).

The second largest category of environmental words was classified as "meat." The children wrote 59 words related to meat products, and this category represented 14.50 percent of the total word production. Twelve of the children wrote *fried chicken* and *eggs*, which were the most frequently appearing listings in the meat group (see Table 2). The children wrote the generic term *meat* as the third most frequently appearing word, followed by *ham*. Vegetables made up the third largest group of written words. The children wrote the names of 15 different vegetables, with *green beans* having the highest frequency with 13 listings. *Tomatoes*, *beans*, and *onion*, with a frequency of 6, 5 and 4, respectively, were the next most frequently listed vegetables. The children listed 46 vegetables and this category represented 11.30 percent of the total word production.

The children's fourth largest group of written words was fruits. This category made up 10.81 percent of the students' total word production ($n = 407$) and had the least variability among the eight designated classifications. The students ($n = 46$) listed a total of 44 words in this category, which had 9 different fruits. The most frequently appearing fruits were *apples*, *bananas*, *pineapple*, and *watermelon*, with a frequency of 13, 7, 6 and 5, respectively (see Table 2, Category 4). The children's fifth largest group of vocabulary words was desserts. This category had 37 words which represented 9.09 percent of the children's total word production. The children most often wrote *ice cream*, *cake*, *popsicle*, and *candy*, with a frequency of 9, 5, 5 and 4, respectively.

Table 2
Four Highest Frequency Environmental Words by Category

Category	Specific Environ-mental Words	# of Students Listing	% of Students Listing
1. Stores	Safeway	21	45
	Store	11	23
	Piggly Wiggly	9	19
	Wal-Mart	8	17
2. Meat	Fried chicken	12	26
	Eggs	12	26
	Meat	11	23
	Ham	6	13
3. Vegetables	Green beans	13	28
	Tomatoes	6	13
	Beans	5	10
	Onion	4	8
4. Fruits	Apples	13	28
	Bananas	7	15
	Pineapple	6	13
	Watermelon	5	10
5. Desserts	Ice cream	9	19
	Cake	5	10
	Popsicle	5	10
	Candy	4	8
6. Road signs	Stop	10	21
	School	5	10
	Yield	2	4
	Hospital	2	4
7. Other grocery items	Sugar	4	8
	Soap	3	6
	Bread	2	4
	Salt*	1	2
8. Drinks	Milk	9	19
	Cokes	6	13
	Tea	2	4
	Dr. Pepper*	1	2
9. Miscellaneous	Books	10	21
	Exxon*	1	2
	Mailbox*	1	2
	Shirt*	1	2

*These items were arbitrarily selected to represent the category.

The children wrote the words found on street or traffic signs as the sixth largest category of environmental print.

This group had a total production of 34 words with 19 different items. The children most often recalled seeing *stop*, *school*, *yield*, and *hospital* with a frequency of 10, 5, 2 and 2, respectively. The word *stop* probably had the highest frequency because this traffic sign is the most often used and, without doubt, the most observed in the neighborhoods where the children lived. The three remaining categories — "other grocery items," "drinks," and "miscellaneous" — had 18.67 percent of the total word production and were characterized by rather low frequency in specific word listings (see Table 2). The words in these three divisions were more individualized than the words in the other six groups and for this reason, the most idiosyncratic in nature.

Conclusions

Parents have prime responsibility for helping to develop children's literacy during the formative years. According to Bloom (1964), "in terms of intelligence measured at age 17, about 50 percent of the development takes place between conception and age 4" (p. 88). Many parents are keenly aware of the educational value of children's activities and, as a result, provide the best learning experiences, as well as extra encouragement and support, for their children. Parents, then, can make a positive contribution to literacy development. Furthermore, "parents who behave in a warm, democratic manner and provide their children with stimulating, educationally oriented activities, challenge their children to think, encourage independence, and reinforce their children, are preparing them very well for school" (Rubin, 1990, p. 17). Additionally, children can easily learn words "when they live in a clearly-labeled, sign-laden environment with helpful adults" (Mason, 1980, p. 221). Elementary teachers can easily build on this literacy foundation that was developed in the home environment.

Teachers should provide instruction based on the children's experiential background. Children should be encouraged to use their total repertoire of words in their written work, especially those familiar words that are regularly seen in the environment. Admittedly, the particular environmental words and the number of words that can be written will differ among children, but this variability should be considered an asset rather than a liability. Teachers can easily determine the specific words that make up the environmental vocabulary by asking the children to write the printed words that they remember seeing in the neighborhood and city as they travel to school, to grocery stores and to shopping centers.

To help develop the environmental vocabulary, classroom teachers can take their children for "walks around the school and neighborhood, with children searching for examples of environmental print" (Searfoss and Readence, 1989, p. 63). When returning to the classrooms, the children can be encouraged to use these newly-encountered words in their original written compositions detailing their rendition of the neighborhood excursion. Younger children can dictate their stories to their teachers who can make an experience chart; "the involvement of the teacher as a scribe could promote a united collaborative effort" (Brown and Briggs, 1991b, p. 336). On the other hand, older children can write their own stories with little, if any, assistance from their teachers. This activity should provide the children with a dynamic writing experience; or as Taylor, Blum and Logsdon (1986) stated, "Children learn best in a language- and print-rich environment, with many opportunities to observe, try out and practice literacy skills in genuine communication situations" (p. 147).

Children should and will continue learning words from abundantly-available print seen in the home and neighborhood; "these [words in print] include environmental words (on road signs, billboards, fast-food restaurants and so forth), family-oriented words (names of family members and their addresses), book-related words (titles of favorite books and repetitive words in some stories), and words of special significance (holidays and words associated with meaningful experiences)" (Ross and Roe, 1990, p. 185). This knowledge will accelerate the growth of the children's environmental vocabulary; and "the more words they [the children] know, the easier it is to recognize and learn other words, based not on sound correspondences but on syllabic and semantic resemblances" (Smith, 1992, p. 439). Educators should realize that "the quality of the child's school experience appears to be related to the school's recognition that it is not the sole educative force in a child's life" (Florio and Shultz, 1979, p. 234). The educational activities in the home, neighborhood, and community are of paramount importance in promoting the child's language growth. The elementary curriculum, therefore, should be adjusted to make optimal use of the child's environmental learning experiences. As Aldridge and Rust (1987, p. 326) succinctly stated, "Using an environmental print supplement to the reading program may be just what they [the young children] need!"

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