

Print Awareness Skills of Children with Hearing Loss

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THE MANY STRANDS THAT ARE WOVEN INTO SKILLED READING

LANGUAGE COMPREHENSION

BACKGROUND KNOWLEDGE
(facts, concepts, etc.)

VOCABULARY
(breadth, precision, links, etc.)

LANGUAGE STRUCTURES
(syntax, semantics, etc.)

VERBAL REASONING
(inference, metaphor, etc.)

LITERACY KNOWLEDGE
(print concepts, genres, etc.)

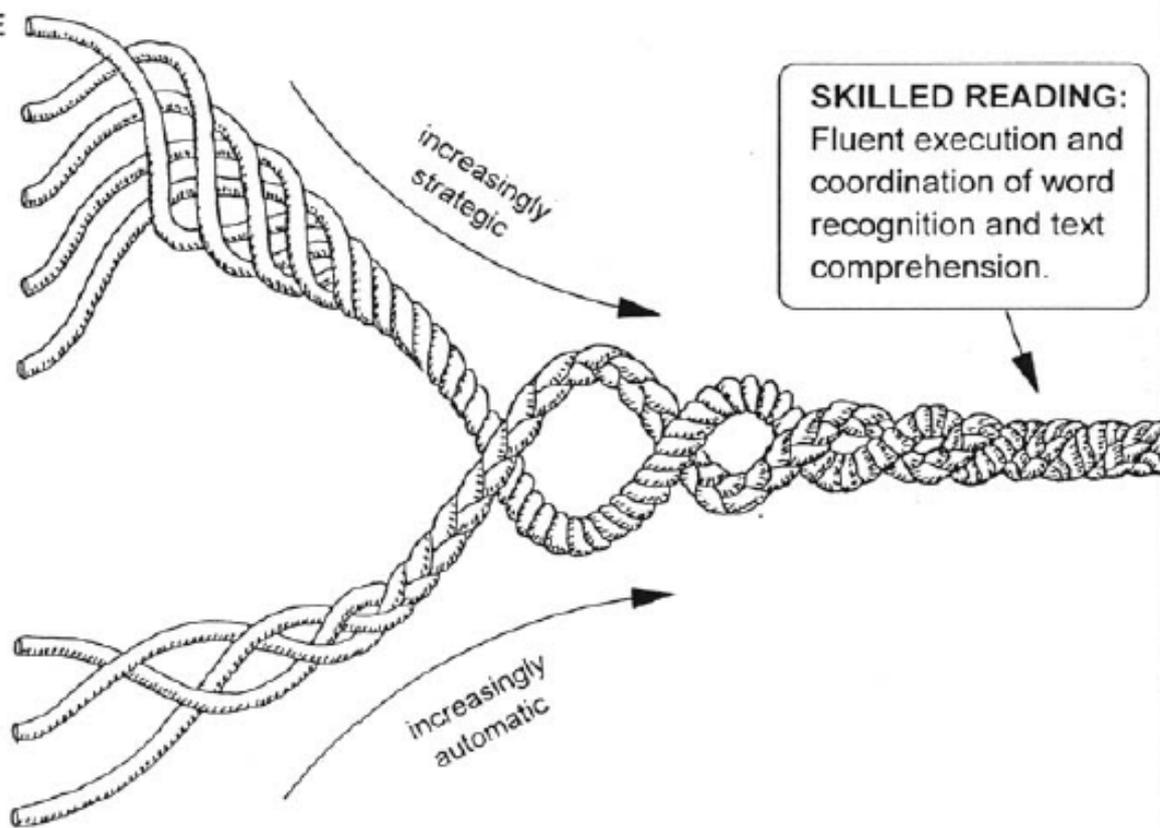
WORD RECOGNITION

PHONOLOGICAL AWARENESS
(syllables, phonemes, etc.)

DECODING (alphabetic principle,
spelling-sound correspondences)

~~SIGHT RECOGNITION~~
(of familiar words)

Automatic recognition



SKILLED READING:
Fluent execution and
coordination of word
recognition and text
comprehension.

(Scarborough, 1999)

Emergent Literacy Skills

- Phonological Awareness
- Oral Language
- Print Awareness and Print Knowledge



Later Reading Success

Print Awareness vs. Print Knowledge

Awareness:

- Print concepts
 - Handling books, turning pages, reading left to right, representations of word boundaries
- Environmental print
 - Recognizing that print/ symbols convey meaning (e.g., recognizing McDonalds or Target signs)

Knowledge:

- Letter names
- Letter Sounds

(Pullen & Justice, 2003)

Print Awareness

- Typically developing children as young as 8 months can develop knowledge of print conventions (Chaney, 1992; Snow, Burns, & Griffin, 1998)
- Print awareness skills of “at-risk” children are malleable (Justice & Ezell, 2002; Justice, Kaderavek, Fan, Sofka, & Hunt, 2009)

Measures of Print Awareness

- Preschool Word and Print Awareness Assessment (PWPA; Justice & Ezell, 2001)
- Phonological Awareness Literacy Screening-Preschool (PALS-PreK; Invernizzi, Sullivan, Meier, & Swank, 2004)
- Test of Preschool Early Literacy (TOPEL; Lonigan, Wagner, & Torgeson, 2007)

PWPA

Part 1: Print Concepts

1. Hand book to the child with the back cover facing upward.

Say: Show me the front of the book.

6. Say: Show me where one of the ducks is talking.

PWPA

Part 2: Words in Print

1. Say: Show me just one word on this page.

6. Say: Show me the very last word on this page.

PALS-PreK

2. Points to each of the three words in the title.

6. Left to right directionality.

TOPEL

Which one can you read?

The

8652

4720



TOPEL

ITEM SET B

- | | | | | | |
|------------------------------------|---|---|---|---|-----------|
| 13. Which one is "M"? | B | Z | M | P | 13. _____ |
| 14. Which one is "b"? | f | b | x | z | 14. _____ |
| 15. Which one is "I"? | A | Q | I | V | 15. _____ |
| 16. Which one is "D"? | D | B | C | T | 16. _____ |
| 17. Which one is "r"? | s | a | y | r | 17. _____ |
| 18. Which one is "h"? | h | g | k | c | 18. _____ |
| 19. Which one makes the /b/ sound? | M | A | B | D | 19. _____ |
| 20. Which one makes the /n/ sound? | Y | P | N | K | 20. _____ |
| 21. Which one makes the /t/ sound? | W | Z | S | T | 21. _____ |
| 22. Which one makes the /f/ sound? | W | F | I | O | 22. _____ |

Item Set B Raw Score

Children with Hearing Loss?

Emergent Literacy Skills

- Phonological awareness: Poorer than children with typical hearing (Kyle & Harris, 2011)
- Oral language: Poorer than children with typical hearing (Connor, Craig, Raudenbush, Heavner, & Zwolan, 2006)
- Print awareness: Undefined?



Later Reading Success??

Print Knowledge Skills

- No significant differences found between groups on the TOPEL (Ambrose, Fey, & Eisenberg, in press)
 - Weighted heavily towards letter knowledge
- Similar letter-sound identification gains for children with hearing loss and those expected of children with normal hearing across a year (Easterbrooks et al., 2008)
 - Not compared with actual typical hearing group
- Children with hearing loss outperformed children with normal hearing on letter name knowledge at age 5 but lagged behind on letter sound knowledge (Kyle & Harris, 2011)

Questions

- Can print awareness exist and be measured in a child with low oral language knowledge?
- Is the print awareness knowledge of preschool children with hearing loss age-appropriate?
- Does print awareness knowledge of children with hearing loss in non-English-speaking homes differ from children with hearing loss in English speaking homes?

Participant	Home Language	Chronological Age	Hearing Loss	Devices	Age Aided	Hearing Age	Type of Intervention
1	English	42	Severe to Profound	CI, HA	24	18	AO
2	English	44	Profound	CI	28	16	AV
3	English	52	Mild to Moderate	HA	44	8	AO
4	English	52	Severe to Profound	CI	30	22	AO
5	English	55	Profound	CI	6	49	AV
6	English	55	Severe to Profound	CI, HA	35	20	AO
7	English	58	Moderate	HA	4	54	AV
8	English	67	Moderate-Severe	HA	22	45	AV
9	English	82	Moderate	HA	5	77	AO
10	Spanish	39	Moderate-Severe	HA	6	33	AV
11	Spanish	54	Moderate-Severe	HA	6	48	AV
12	Spanish	54	Profound	CI	3	51	AV
13	Spanish	59	Profound	CI	12	47	AV
14	Spanish	63	Severe to Profound	CI	9	54	AV
15	Spanish	65	Profound	CI	33	32	AO
16	Spanish	68	Profound	CI	6	62	AV
17	Spanish	70	Severe to Profound	CI	5	65	AV
18	Spanish	73	Mild to Moderate	HA	13	60	AO
19	Spanish	76	Mild to Profound	CI, HA	24	52	AO

Print Awareness Measures

- PWPA
- PALS-PreK
- TOPEL (10 participants)

Print awareness of children with low levels of language knowledge

Participant	Age	Devices	Hearing Age	ROWPVT	EOWPVT
1	42	CI, HA	24	3	1
5	55	CI	49	6	12
15	65	CI	32	3	4
Average	--	--	--	37.64	32.05

Print awareness of children with low levels of language knowledge

Participant	PALS PreK Print Awareness	PWPA: Print Concepts English	PWPA: Words in Print English	PWPA: Print Concepts Spanish	PWPA: Words in Print Spanish
1	2	8	4		
5	4	4	0		
15	6	7	0	6	0
Average	3.77	7.33	4.16	8.2	1.8

Print awareness of children with low levels of language knowledge

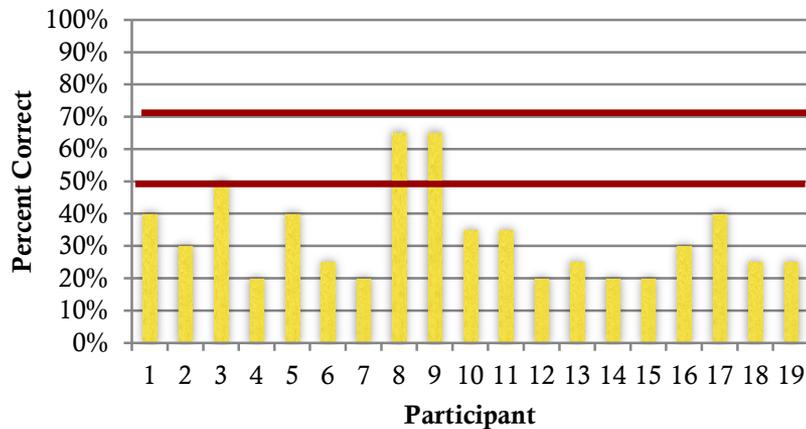
Participant	Home Hours of Reading Per Week	Teach Letter Names/ Sounds	Point to Environmental Print
1	10	Very frequently	Daily
5	1	Very frequently	Occasionally
15	15	Occasionally	Occasionally
Average	2.7	Very frequently**	Daily**

Can print awareness exist
and be measured in a child
with low oral language
knowledge?

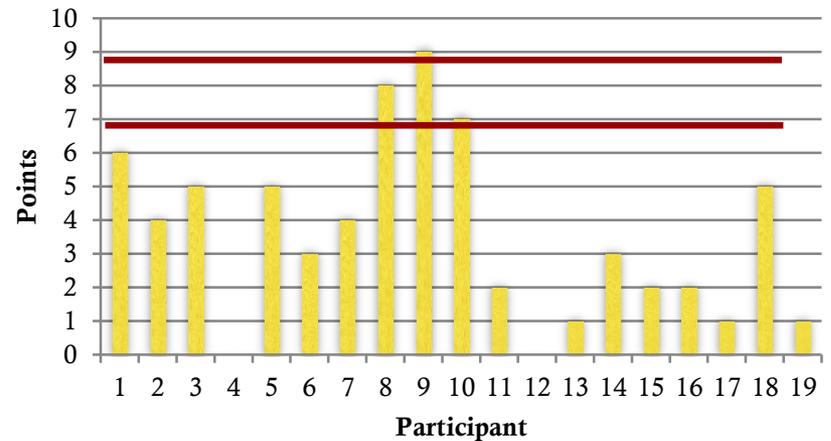
Yes!

Print Awareness of Children with Hearing Loss

PWPA: Print Concepts



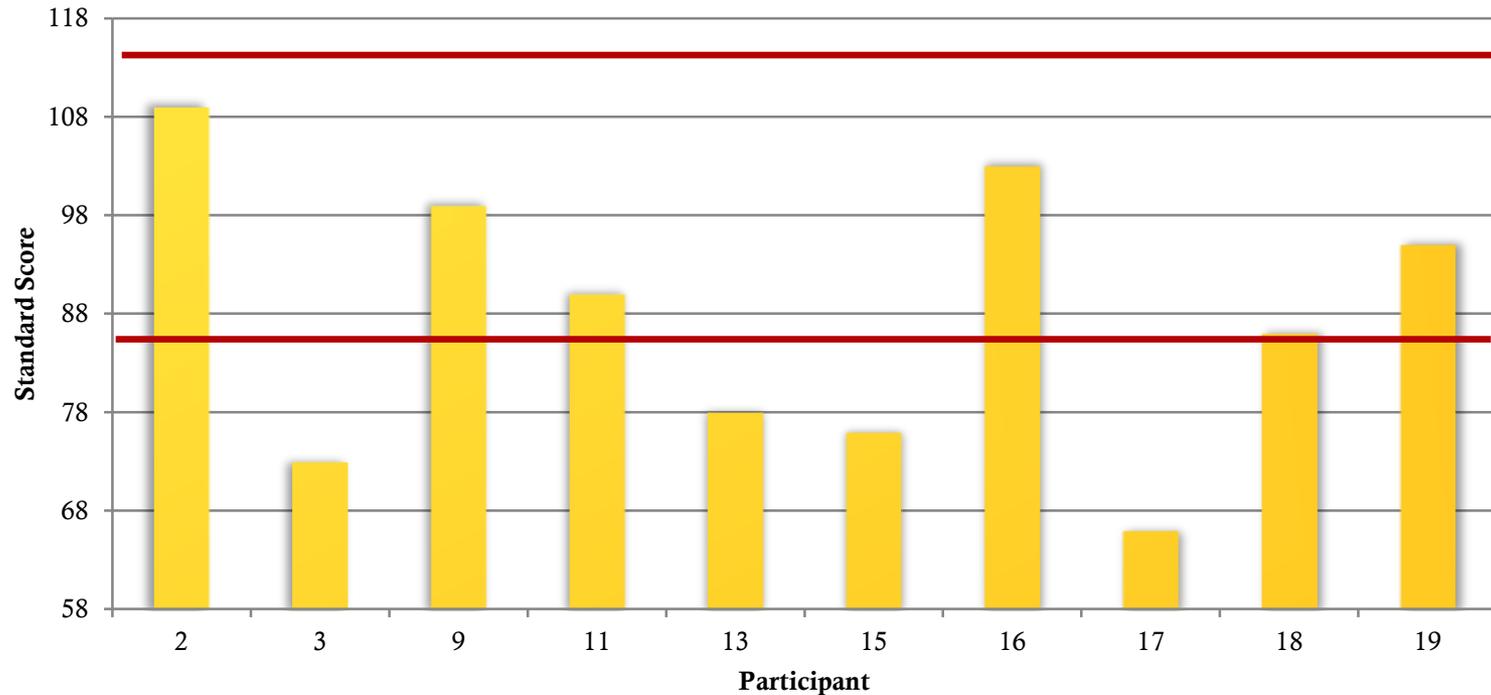
PALS-PreK



Measure	Number below	Number within	Number above
PWPA: PC	16	3	0
PALS-PreK	16	3	0

Print Knowledge of Children with Hearing Loss

TOPEL



Is the print awareness
performance of
preschool children with
hearing loss age-
appropriate?

No

Print Awareness Knowledge of Children with Hearing Loss who are Bilingual

Monolingual versus Bilingual Children

Two-tailed t-test:

PWPA Print Concepts

$$t = -.36, p = .72$$

PWPA Words in Print

$$t = .52, p = .61$$

PALS-PreK Print Awareness

$$t = .63, p = .54$$

Spanish versus English Knowledge

Paired sample, two-tailed t-test:

PWPA Print Concepts

$$t = -.77, p = .45$$

PWPA Words in Print

$$t = .97, p = .35$$

Does print awareness knowledge
of children with hearing loss in
non-English-speaking homes
differ from children in English-
speaking homes?

Maybe...

Moving forward: what can we do for children with hearing loss?

Home Literacy Practices

- Spend time reading!
- To encourage reading practices at home, consider:
 - Parent beliefs about reading (whose job is it?)
 - Home literacy environment
 - Joint reading experiences
- Maximize the auditory environment during home literacy interactions

For a review see DesJardin & Ambrose, 2010

Parent Beliefs

- A parent's beliefs about reading (whose job is it?, what can be gained?) are related to the quality of the literacy environment (Clingenpeel & Pianta, 2007)
- “Parents as partners” techniques:
 - Provide information about the relationship between reading and early literacy skills
 - Consider the needs of the parent during the day (what time is available to spend reading?)

Home Literacy Environment

- General literacy activities
 - Going to the library
 - Observing others read
- Child-led activities
 - Writing activities (“making a shopping list”)
 - Practice typing on a keyboard
- Parent-led activities
 - Literacy games (teaching letters, initial sound matching)
 - Point out/ teach familiar signs/ logos

Joint Reading

- Parent focus within a reading experience varies greatly between families (Kassow, 2006)
- Parents of children with hearing loss display varying ability to support their child's comprehension during reading (DesJardin, 2009)
- “Parents as partners” techniques
 - Demonstrate and guide use of language-prompting strategies and print referencing

Home Literacy for BLL children

- Children who develop early literacy skills in their home language are likely to transfer some skills to their second language (Restrepo & Gray, 2007)
- Be culturally sensitive!
- Provide resources when possible
 - www.readinga-z.com
 - www.starfall.com
 - Local library resources

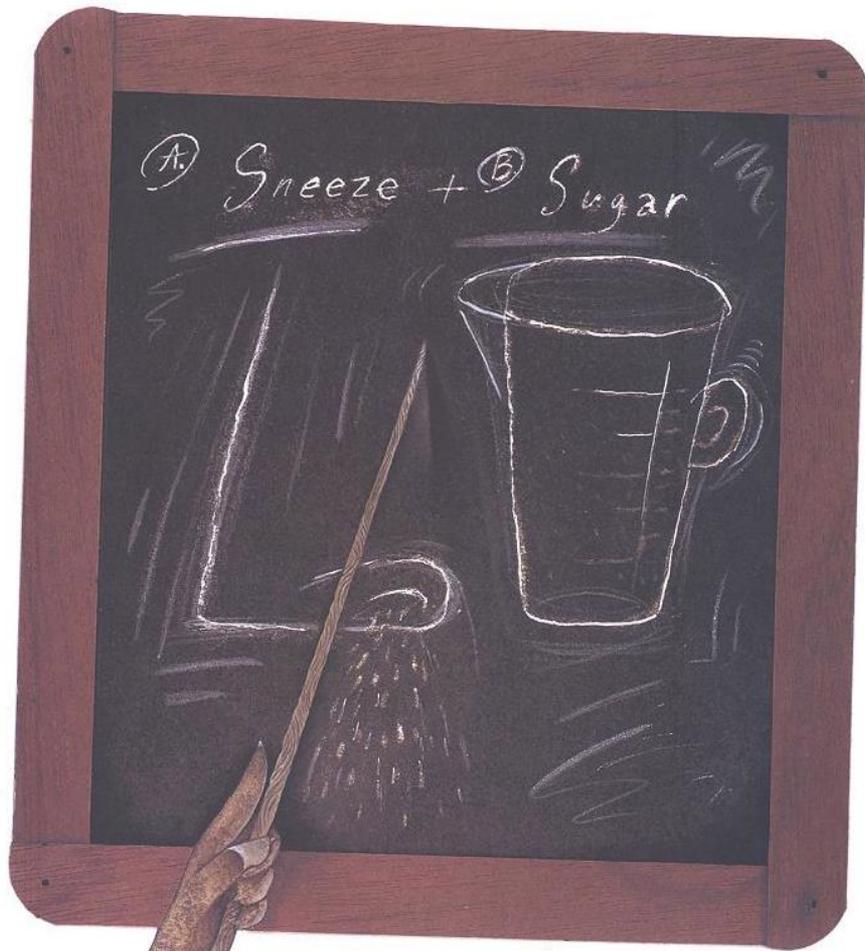
Print Referencing

Table 1. References to print.

<i>Cue</i>	<i>Examples</i>
Nonverbal references	
Pointing to print	Adult points to narrative print or print embedded in illustrations.
Tracking print	Adult tracks the print while reading the narrative text.
Verbal references	
Questions about print	Do you know this letter? What do you think this says?
Comments about print	That's an A. This says "Get out!"
Requests about print	Show me where the O is. Help me read these words.

Justice & Ezell, 2004

Activity



But like I was saying,
the whole Big Bad Wolf thing is all wrong.
The real story is about a sneeze and a cup of sugar.

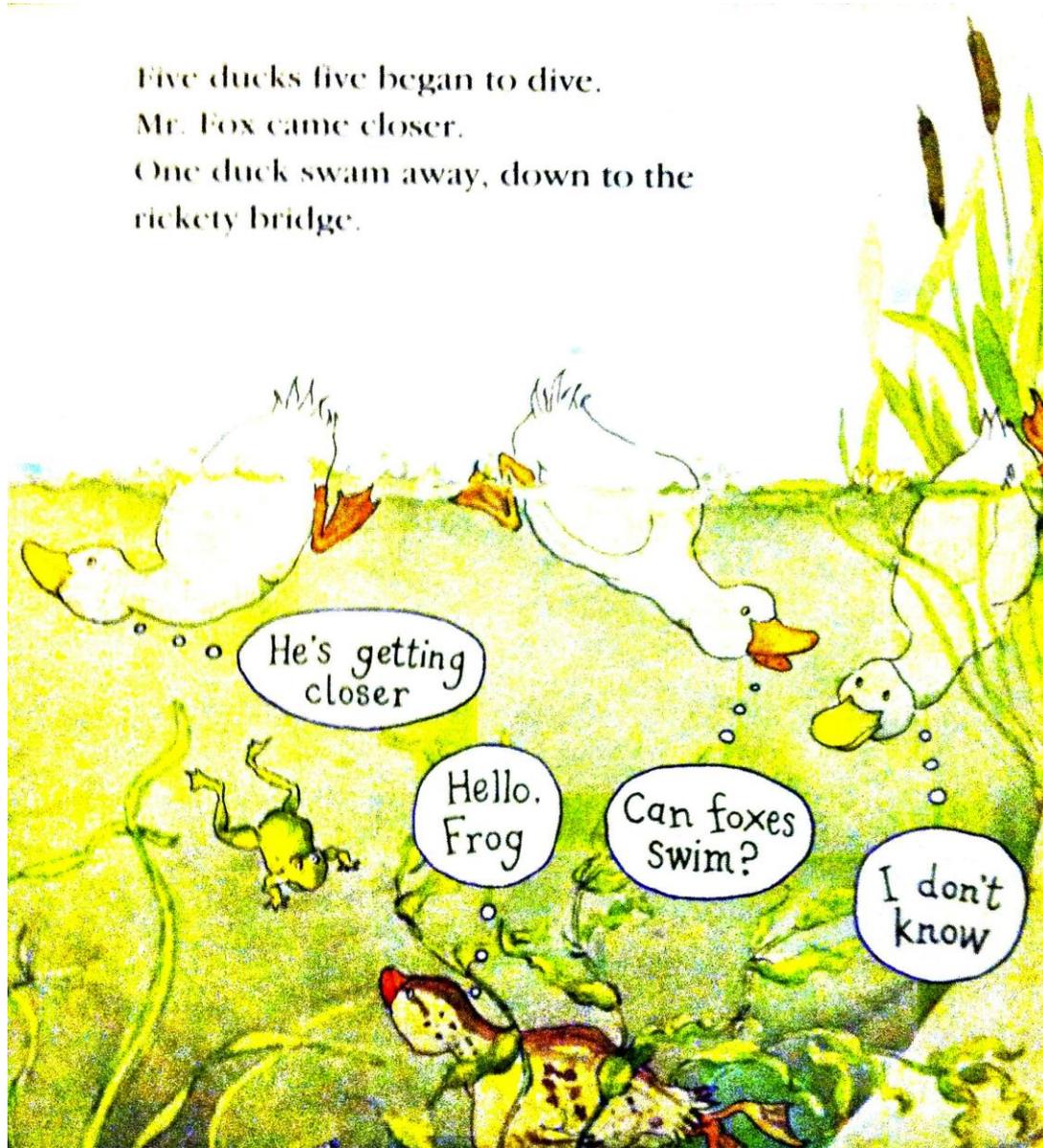


he news reporters found out
about the two pigs I had for dinner.
They figured a sick guy going to
borrow a cup of sugar didn't
sound very exciting.
So they jazzed up the story with all of that
"Huff and puff and blow your house down."
And they made me the Big Bad Wolf.



That's it.
The real story. I was framed.

Five ducks five began to dive.
Mr. Fox came closer.
One duck swam away, down to the
rickety bridge.



Thank you!

Child Language and Literacy Lab
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References available upon request:
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www.mc.vanderbilt.edu/language