

An Analysis of the Components of Dialogic Reading

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Introduction

- Shared book reading is an important activity parents can engage in with their children, and there are techniques for making the experience more conversational, and therefore more accessible, for the child. Dialogic Reading (Whitehurst, Falco, et al., 1988) is an effective, research-based intervention that teaches techniques for making shared book reading more conversational (National Research Council, 2001; Kaderavek & Justice, 2002).
- In all of the research on the effectiveness of Dialogic Reading, it remains unclear how the components interact, and which components are responsible for the intervention's effectiveness.
- Whitehurst, Falco, et al. (1988) indicated that the original intervention included more than one type of effective behavior in order to maximize the chances that the intervention would have an impact.
- The purpose of the present study was to investigate the effectiveness of Dialogic Reading's component parts. Specifically, evocative techniques and feedback techniques were investigated, as both techniques have an evidence base that supports their effectiveness. However, no single experiment has directly compared the two components.
- In addition, because children tend to show gains in receptive vocabulary before they show gain in expressive vocabulary (Sénéchal, 1997), and repeated exposure to novel words is associated with greater gains (Robbins & Ehri, 1994), there were also research questions related to these areas.

Hypotheses

- H1: An interaction effect was predicted such that the presence of evocative techniques would lead to greater gains in novel vocabulary than would the presence of feedback techniques, due to the nature of the evocative techniques eliciting utterances from the children and potentially offering them more opportunities to verbalize the novel words.
- H2&3: Although unconventional, main effects were predicted for both the evocative techniques and feedback techniques, such that the presence of each technique would be associated with greater scores on the novel vocabulary assessment.
- H4: Because children tend to show gains in receptive vocabulary before they show gains in expressive vocabulary, it was predicted that children would receive higher scores on the receptive tests of novel vocabulary than they did on the expressive tests.
- H5: In addition, because increased exposure to novel vocabulary increases the likelihood of the child acquiring that vocabulary, it was predicted that children's scores on the novel vocabulary assessment would be better at Time 2 in both the receptive and expressive conditions.

Methods

- Forty-one two- to four-year-old children ($M = 38.51$ months, 20 male, 21 female) were recruited from six child care centers in a large Midwestern city. No specific ethnicity data was collected, but the sample was largely Caucasian.
- Each child was read one book per week for four weeks, in the style of their assigned condition.
- Children were randomly assigned to one of four conditions:
 - Control group: Received no specific technique.
 - Evocative: Experimenter asked open-ended and "wh-" questions
 - Feedback: Experimenter provided recasts and expansions of child's utterances
 - Evocative-Feedback: Experimenter used both techniques.
- Children were read four separate books, and each book contained the same 11 foreign object labels. Children's acquisition of the foreign object labels was assessed at the end of each session.
- In the first session, the Expressive One-Word Picture Vocabulary Test (Brownell, 2000) was used to assess children's expressive vocabulary level at the beginning of the study. These scores were used as a covariate to control for the children's initial vocabulary skill ($M = 37.41$).
- For the first two sessions, children were randomly assigned to receive either a receptive test of novel vocabulary acquisition or an expressive test of novel vocabulary acquisition. For the last two sessions, the children received the form of the vocabulary test they did not receive in the first two sessions.

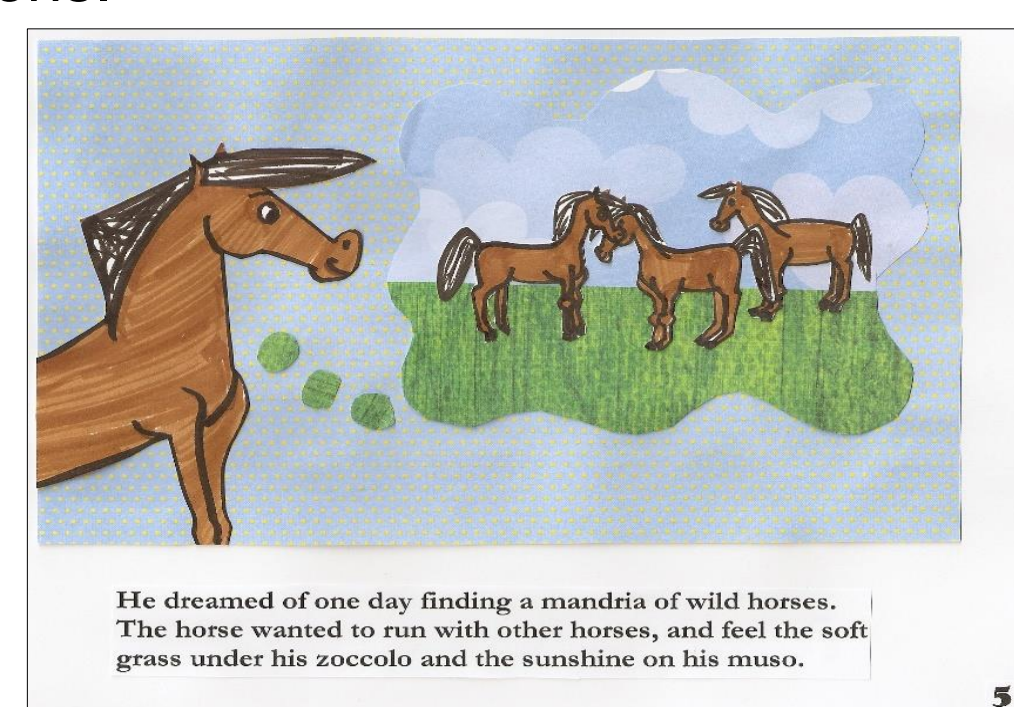


Figure 1. Example page from one of the story books. All pages had large brightly colored illustrations, and text was kept as minimal as possible.

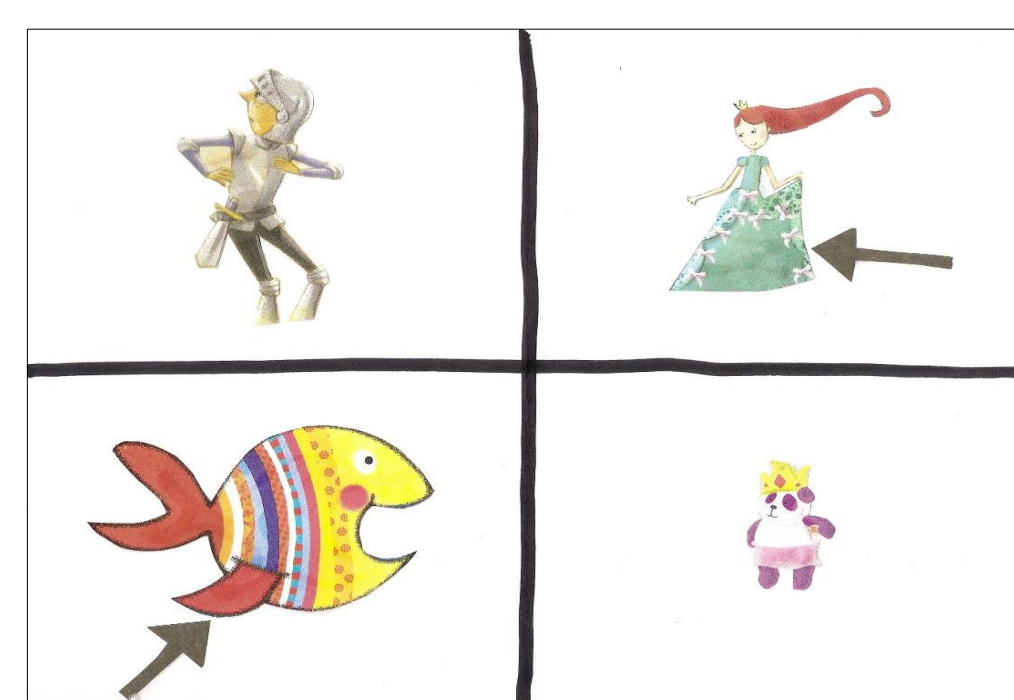


Figure 2. Example test card for the novel vocabulary assessment. Each card contained four pictures, three that had foreign language referents, and one that did not. For the receptive test, children were asked to point to the picture matching the novel word. For the expressive test, children were asked to verbally identify the image to which the experimenter pointed.

Results

- The data were analyzed using a repeated measures ANCOVA, with two between subjects effects (evocative techniques and feedback techniques) and two within subjects effects (type of vocabulary assessment and time). The covariate was the child's raw score on the EWOPVT. Missing values were substantial (~11% of the data points), and were replaced using mean replacement.
- See table below for correlations.
- The covariate was a significant predictor of novel vocabulary acquisition, $b = .02$, $F(1, 36) = 6.27$, $p = .02$, controlling for the other predictors.
- Only one hypothesis was supported by the research findings: the scores on the novel vocabulary assessment were higher in the receptive conditions than they were in the expressive conditions ($F(1, 36) = 109.74$, $p < .001$) controlling for both age and EOWPVT, indicating that children were better able to convey what novel words they acquired when they were asked to point to the correct image compared to when they were asked to verbalize the novel word.
- All other findings were non-significant.

Variable	1	2	3	4	5
1. Age	-				
2. EOWPVT raw score	.63**	-			
Expressive Vocab					
3. Time 1	.27*	.32*	-		
4. Time 2	.09	.17	-.05	-	
Receptive Vocab					
5. Time 1	-.28*	.10	.22	.14	-
6. Time 2	.01	.31*	-.02	.26*	.31*

Note. * $p < .10$. ** $p < .05$. *** $p < .0001$.

Condition	Time Point				
	Expressive T1	Expressive T2	Receptive T1	Receptive T2	
Control	0.87	1.14	1.99	1.85	1.46
Evocative	0.92	1.01	2.18	2.18	1.33
Feedback	0.85	0.88	1.77	1.82	1.57
EvoFeed	1.12	0.91	2.22	1.70	1.49
	.94	.99	2.04	1.89	
	Mean T1 = 1.49	Mean Exp = .96	Mean Recept = 1.96	Mean T2 = 1.44	

Discussion

- The significantly higher scores on the receptive test of novel vocabulary suggest that children were learning the novel words, even if they were not able to express them.
- Children with higher scores on the EOWPVT may simply be quicker to express novel words, even if they are not necessarily quicker to assign those words to the appropriate object or action.
- Limitations:
 - Some novel words referred to objects for which children might already have labels, or to parts of objects.
 - The lack of main effects for the feedback and evocative techniques suggests there are flaws in the design which could be remedied by increasing the number of reading sessions, decreasing the number of novel words, testing for all of the novel words after each reading session, or by pointing to the objects while reading the novel labels.

Discussion

- Limitations continued:
 - The large number of missing data points, lack of demographic information, and small cell sizes are also limitations of this study.

Connections between Research, Practice, and Policy

- What is the primary information that resulted from this investigation? What are the key take-away points?
 - Novel vocabulary acquisition was higher on the test of receptive vocabulary after controlling for both age and beginning expressive vocabulary skill, suggesting that children were learning the words even if they could not express them. The use of receptive tests of vocabulary alongside expressive tests might give insight into where particular children are struggling – for example, if they are learning the words but are unable to express them versus not learning the words at all.
- How can this information be applied to informing or advancing early childhood practices and/or policies?
 - Dialogic Reading can be used with 2 through 5 year olds. While it is logical to use receptive tests of vocabulary with beginning talkers, it is not as intuitive to use them for more experienced talkers. Using both receptive and expressive tests of vocabulary when assessing the impact of Dialogic Reading can help to pinpoint where progress is not being made and what areas could be addressed to help children further advance.
- What additional research is needed? What is a next step?
 - Additional research can look at comparing receptive and expressive tests of vocabulary over time, throughout the course of an intervention. While children in this study showed greater gains in receptive vocabulary, it is likely that those gains would level off and gains in expressive vocabulary would increase at a later time point.
 - In addition, a study looking at the additive effects of the evocative and feedback techniques could give insight into how Dialogic Reading works to increase vocabulary.

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