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Invented Spelling: An Intervention Strategy for Kindergarten Children



Parent and Teacher Report 2009

Report on a study testing whether encouraging and guiding children's early spelling in kindergarten would help them learn to read.

Research conducted by the
Cognitive Development Lab
at Carleton University

In the fall of 2007, we initiated an intervention study in six schools interested in our work on early spelling and reading. Only children for whom parents gave written consent participated. We are pleased to report the findings of our study. We report the findings around three goals.

Goal 1: Invented Spelling and Learning to Read

The main goal of our study was to test whether encouraging invented spelling would ease the entry into reading more so than enhancing kindergarten children's phoneme awareness.

What is invented spelling?

Before they can read, young children sometimes write the words they hear with their limited knowledge of letter names and letter sounds. For example, they may spell *rough* as *ruf*. We use the word *invented* to reflect that the spelling may not be correct in terms of grammar, but is correct in terms of the sounds in the word. Examples of children's invented spelling are given in the findings.

What is phoneme awareness?

Phoneme awareness refers to a child's understanding that spoken words are made up of smaller speech sounds. For example, the word *sun* has three speech sounds or phonemes, *s...u...n*. Children's phoneme awareness in kindergarten is one of the best predictors of reading success in grade 1. In fact, many kindergarten teachers foster phoneme awareness with a variety of activities.

Who were the children?

We screened 100 children and selected the children who were doing poorly in phoneme awareness. 30 girls and 36 boys participated in the intervention. All children were in senior-kindergarten classes from six elementary schools in Ottawa.



Goal 3: The Benefits of Shared Reading

Most children in the control group participated in a shared reading activity. This activity allowed us to assess whether reading books in a very interactive manner, called dialogic reading, would enhance children's storytelling skills and vocabulary.

What is dialogic reading?



Dialogic Reading is an interactive reading technique that encourages children to become an active participant in the storytelling. During shared reading, children are asked questions, prompted to discuss new vocabulary, and encouraged to predict what will happen next.

What did the children do?

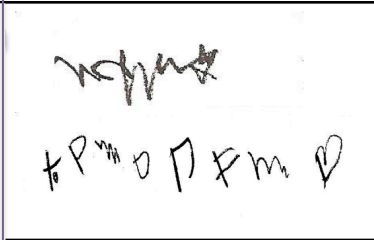
Children in this group were read storybooks in an interactive manner. When reading the storybooks with the children, the adult asked questions about the characters and the storyline. Each child was encouraged to participate. During each reading session, a single book was read, and over the course of the intervention, each of the 8 books was read twice.

What did we find?

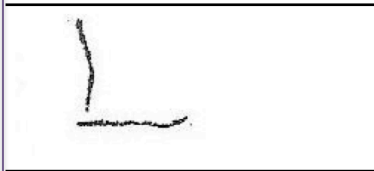
As expected, children in the dialogic reading group learned more story knowledge as compared to the children in the phoneme awareness group. That is, children learned to include more story elements and to present them in order, as well as to provide more details about characters. Children also learned new vocabulary from shared reading.

Therefore, encouraging children to discuss stories as well as new words during repeated readings of storybooks helps them learn oral language.

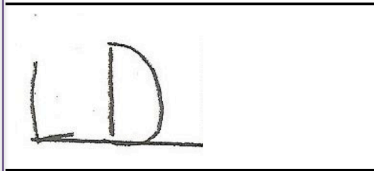
Examples of children's progress in invented spelling



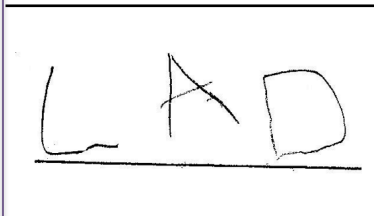
Two examples of children's early spelling attempts of the word *lady*. Note the use of scribbles and symbols with little resemblance to written letters or words.



Note the progression from the first examples. Here, the child included the correct first sound of the word *lady*.



A child's progress in spelling *lady*. The child correctly identified both the first sound and last sound of the word. In this example, the name of the letter D was used.



Compared to the previous examples, this is the most sophisticated spelling attempt. If you consider the names of letters, this attempt captured all the sounds of the word *lady*.

A note to parents and teachers

Some might be worried that encouraging invented spelling in kindergarten might make it more difficult for children to learn the correct spelling of words once in grade 1. We have not found this to be the case. Also note that in the guided instructions we used, children who reached the final phase of invented spelling were shown the correct spelling of words. For example, a child spelling *lady* as *lad* would be shown the correct spelling.

When did we see the children?

We first met with children in the fall of kindergarten for early assessments. We then conducted the intervention during the months of January, February, and March. We assessed children at the end of the intervention and again in November of grade 1.

What did the children do?

Children were randomly placed into one of three groups; 1) Invented Spelling, 2) Phoneme Awareness, and 3) Shared Reading. They were seen in small groups for 8 different teaching sessions over 8 weeks. Each week, the same session was repeated once for a total of 16 sessions. All children were taught the name and sound of 14 letters with a fun group activity.

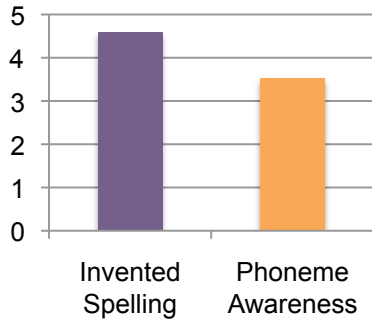
Invented spelling group. This is our main group of interest. Children in this group practiced invented spelling. After hearing a word, they were encouraged to print it as best they could. The instructor then gave individual feedback to guide the progress from a set of random letters, to spelling the first sound, then the final sound, and then the vowels in words. All explorations were encouraged with special attention to capturing the sounds in words with letters. During each session, children were asked to spell 5 words twice. Examples are *no*, *sun*, *rat*, *lady*.

Phoneme awareness group. This is our comparison group. Children were taught to divide spoken words into smaller parts. At first, children were asked to select pictures of words that started or ended with the same sound. After the first 5 sessions, children used a stamping marker to mark in a box each speech sound found in a word spoken by the instructor. For example, the word *cat* should receive three stamps. The instructor gave corrective feedback to each child. During each session, children worked on the same words as in the invented spelling group.

Shared reading group. This is our control group. Children in the shared reading group were read books for the duration of the study. The findings for this group are reported after those for the other two groups.

What did we find?

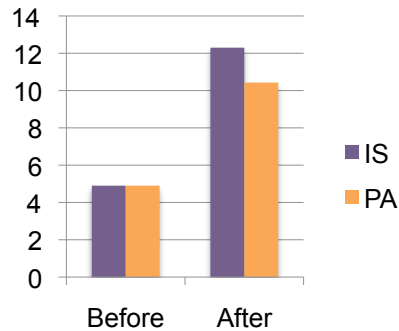
Learn-to-read task



After the intervention, children were taught to read 10 words such as *bee*, *baby*, *pie*, *peel*.

As expected, children in the **invented-spelling (IS)** group learned to read more words than children in the **phoneme-awareness (PA)** group.

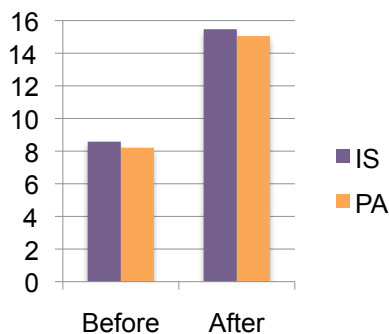
Invented spelling before and after the intervention



Children spelled 5 words such as *elephant* and *boot*, and we scored their invented spelling.

As expected, children in the **invented-spelling (IS)** group tended to make greater gains in spelling compared to the **phoneme-awareness (PA)** group.

Phoneme awareness before and after the intervention



Children were to match, delete, or blend speech sounds in spoken words. For example, say *fit* without /f/.

Children in the **invented-spelling (IS)** group and the **phoneme-awareness (PA)** group made similar gains in phoneme awareness.

Letter-sound knowledge before and after the intervention

All children were learning letters in their regular classroom and during the intervention. As a result, children in both groups made expected and similar gains in letter-sound knowledge.

So, what have we learned so far....

1. We found that both groups learned to read some words and made gains in spelling, phoneme awareness, and letter sound knowledge.
2. The **invented-spelling (IS)** group, however, performed significantly better than the **phoneme-awareness (PA)** group when asked to read and spell words after the intervention.
3. The **invented-spelling** group advantage in word learning is not due to better phoneme awareness or greater letter knowledge.
4. The positive effects of our short 8-week intervention, although significant statistically, were modest.

What does it mean?

The findings support our view that encouraging and guiding kindergarten children to explore letter-sound associations through invented spelling might facilitate reading acquisition.

Goal 2: Predicting Reading in Grade 1

We tested whether children's invented spelling in the spring of kindergarten would be a strong predictor of initial word reading and decoding measured in November of grade 1. For these analyses, we included the 52 children from the initial sample for whom we had kindergarten and grade 1 information.

The analyses for both reading and decoding were clear: Invented spelling in kindergarten was associated with better reading and decoding in grade 1 after controlling for alphabet knowledge, phoneme awareness, and early decoding abilities in kindergarten.

This finding is in accord with our view that invented spelling can be an important kindergarten literacy skill that facilitates the acquisition of reading in grade 1.