# The Effects of Expressiveness on Language Comprehension in Children with SLI

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## Introduction
### Prosody and Comprehension

- Researchers are actively searching to understand to what degree prosodic features, such as intonation, enhance the understanding of general language (Hirschberg, 2002).
- Mira and Schwanenflugel (2013) discovered that changes in expressiveness, mainly pitch variation, affected typically developing pre-kindergarten children's abilities to comprehend storybooks.
- Narrative story grammar is highly predictive of children's later academic success in school.

## Introduction
### Specific Language Impairment

- Children with language disorders make up approximately 7% of the school-aged population (Leonard 1998).
- Children with specific language impairment acquire language at a slower rate in the absence of additional cognitive deficits, hearing loss, or neurological damage (Leonard, 1998).
- Individuals with SLI face difficulties in completing tasks requiring both expressive and receptive language, including the comprehension of language, due to slower development of language compared to typically developing peers.

## Purpose

- This study aimed to further the research conducted by Mira and Schwanenflugel (2013) by expanding the population from only 4-5 year old typically developing pre-kindergarten children to children of the same age with specific language impairment.
- The main purpose of this study was to investigate if comprehension abilities could be improved for children with SLI through presenting material in a highly expressive manner.

## Methods

- Two participants were used for this study. Participant A was a 4 year old male and Participant B was a 4 year, 8 month old male. Both were being seen in the VSU clinic for language impairment.
- Materials:
  - The two stories used for the study were *Forget-Me-Not* (Broad, 2009) and *The Magic Rabbit* (Cate, 2009).
  - Two versions of each story, one expressive and one inexpressive, were recorded using the Pratt Software.

## Methods:
### Experimental Procedure

- Procedure:
  - Single ~15 minute session
  - Audio recordings were placed on CD-ROMs and played on a MacBook computer approximately 1 foot away from the client.
  - The child's clinician sat next to them and turned the storybook pages for the child while the story audio played.

## Methods:
### Experimental Procedure

- Participant A was presented with the expressive audio of the *Forget-Me-Not* story followed by the inexpressive audio of *The Magic Rabbit*.
- Participant B was presented with the expressive audio of *The Magic Rabbit* followed by the inexpressive audio of the *Forget-Me-Not* story.
- Following each story, the participants answered 8 cued recall questions that related to the story's plotline and the child's ability to infer information about the story.
- Cued recall scores were rated on a 3 point scale; 0 for incorrect, 1 for partially correct answers, and 2 for correct responses. Recordings of the child's responses were used for scoring following the session. An overall total score was collected by the researcher.

## Results

- Participant A scored a total of 2 points on the expressive *Forget-Me-Not* story and 0 points on the inexpressive *The Magic Rabbit* story.
- Participant B scored 6 points total on the expressive *The Magic Rabbit* story and 3 points on the inexpressive *Forget-Me-Not* story.
- The mean expressive value was 4 and the mean inexpressive value was 1.5.

## Results

| Participants | Expressive Score | Inexpressive Score |
|---|---|---|
| Participant A | 2 | 0 |
| Participant B | 6 | 3 |
| Mean Values | 4 | 1.5 |

Table 1. Participant scores on recall questions following storybook audio.

## Discussion

- This study sought to further the research conducted by Mira and Schwanenflugel (2013), which demonstrated that changes in the level of pitch and intonation during storybooks read to children between the ages of 4 and 5 increased their comprehension of the story.
- This study aimed to answer the experimental question: *What is the effect of expressiveness on the comprehension of narratives for children with specific language impairment?*
- Participant A and Participant B scored higher when they were presented with the expressive storybook versions and scored lower following the inexpressive storybooks.

## Discussion

- Evidence found in this study indicates that storybooks read with greater expressive pitch variation results in higher comprehension levels for children with specific language impairment.
- Therefore, the findings of this study support the hypothesis: "Expressiveness of storybooks will increase comprehension for pre-kindergarten children with specific language impairment".

## Limitations

- Data was only collected using two participants; a larger population sample expanded across the entire age range could yield more accurate results.
- Additional software measuring the mean pitch levels of the recordings would also help in making the results more reliable.

## Recommendations

- Future research should aim to collect a larger data sample across the entire 4:0-5:11 age range. It should also use a software program to measure mean pitch levels of the recordings.
- Lastly, future research should use more developmentally appropriate books for these children rather than age appropriate stories.

## References


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