

LITERACY SPEAKS!®

Literacy Speaks! is a hierarchical, orthography-based system that allows a speech-language pathologist (SLP) or reading specialist to address an individual's need. The system targets:

- ✓ alphabetic letter recognition,
- ✓ sound-letter correspondence,
- ✓ incorporation of target sounds into words,
- ✓ exposure to sight words (30),
- ✓ combination of target and sight words into phrases/sentences,
- ✓ target and sight words in books, and
- ✓ carryover of sound and literacy skills.



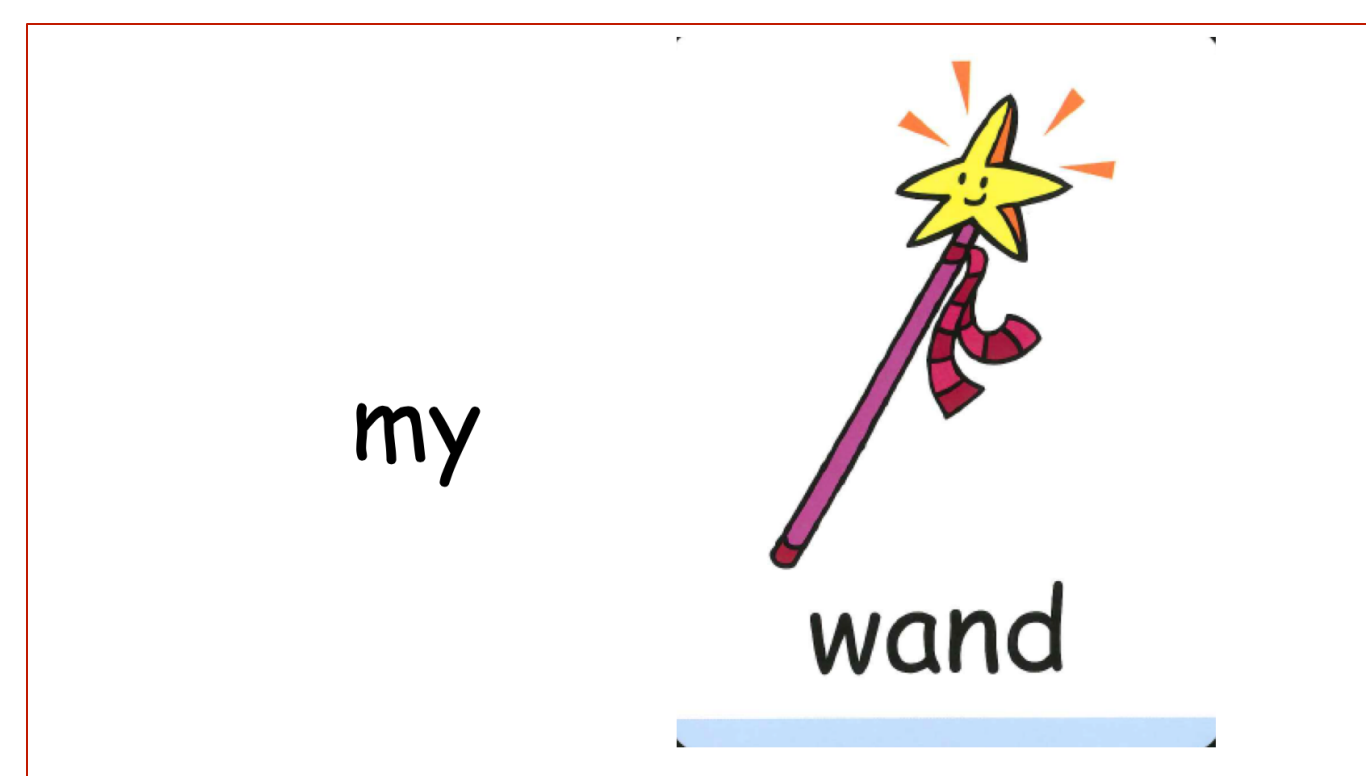
The Complete Kit:
Literacy Speaks!®

PROJECT INNOVATION

Research has shown that children with autism respond to the use of technology in learning.

Literacy Speaks!® materials were presented on an iPad running PowerPoint:

Phrase example:
Initial /w/



CHARACTERISTICS OF Q4

- ✓ 13-year-old boy
- ✓ Autism diagnosis
- ✓ Academic placement: Autism Classroom
- ✓ Receives services addressing speech, language, and pragmatics during school year
- ✓ Hyperlexia
- ✓ Hearing within functional limits

PRE-TESTING

Comprehensive Test of Phonological Processing (CTOPP) Ⓞ

- “very poor” phonological awareness,
- “poor” phonological memory,
- “very poor” rapid naming

Gray Oral Reading Tests (GORT-4) Ⓞ “very poor”

Single Word Intelligibility Test Ⓞ 35%

Northern Speech Services, per author Keli Richmond, provided a complete *Literacy Speaks!*® kit to Dr. Raupp for completion of this project.

Beyond this, neither Ms. Perkowski nor Dr. Raupp have any disclosures or conflicts of interest.

PRE-TESTING

Clinical Evaluation of Language Fundamentals (CELF-5) Ⓞ “severe lang. disorder”
Screening Test for Developmental Apraxia of Speech (STDAS-2) Ⓞ *could not complete*
Clinical Assessment of Articulation & Phonology (CAAP-2) Ⓞ

active patterns: cluster reduction, syllable reduction, fronting, deaffrication, stopping, epenthesis, postvocalic devoicing
numerous substitutions/omissions:

INITIAL POSITION

/k h/ → /t/
/g n z tʃ dʒ ʃ ð θ/ → /d/
/f v/ → /b/

FINAL POSITION

/b f/ → /p/
/t k g l n s æ ŋ/ → /ʃ/
/d tʃ θ ð/ → /t/
/z θ ð dʒ/ → /ʒ/
/v/ → /b/
/g/ → ∅

Testing Summary:

- ✓ Precocious reading ability
- ✓ Impaired reading comprehension
- ✓ Skips lines of text when reading
- ✓ Poor speech intelligibility
- ✓ Multiple active phonological patterns
- ✓ Limited sound inventory

INTERVENTION FOCUS

Sessions with Q4 focused on:

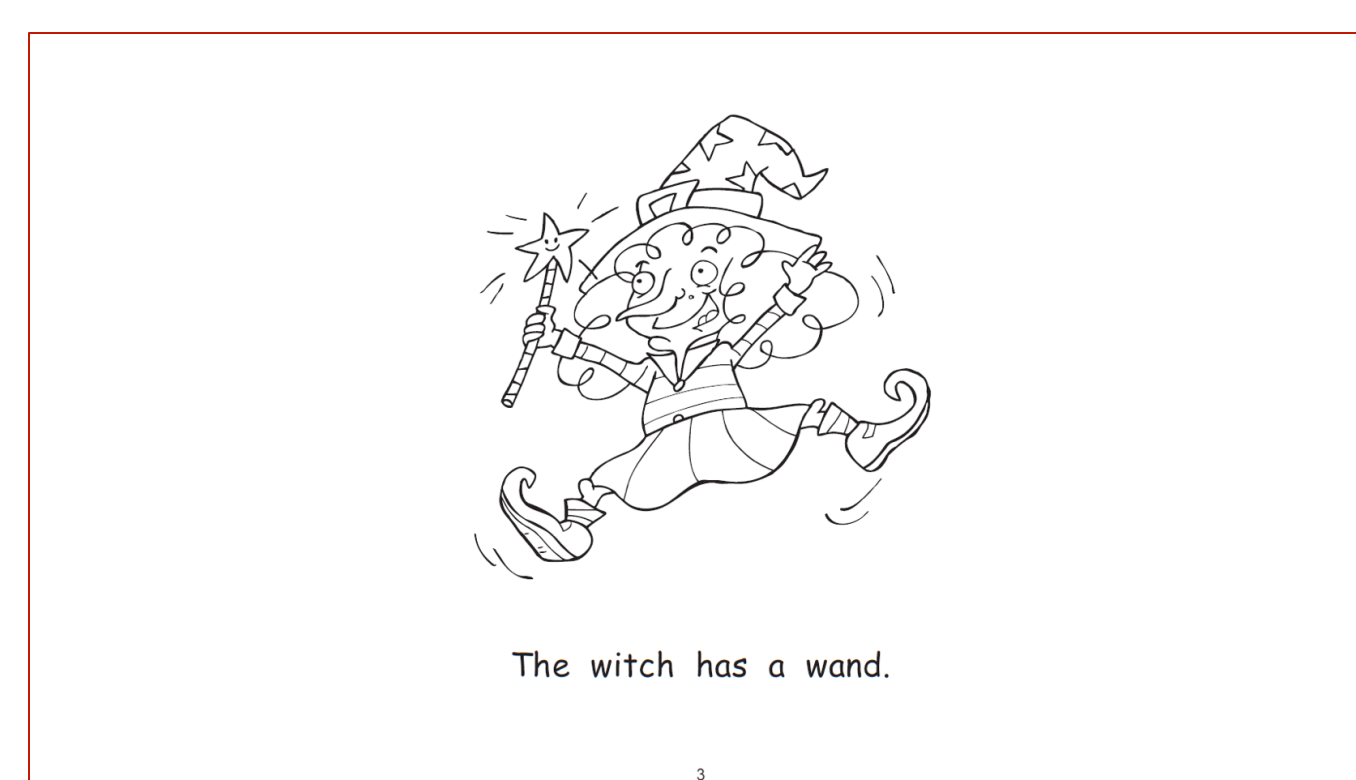
- Increasing vocabulary
- Improving comprehension
- Intelligible and accurate productions of initial phonemes

DESCRIPTION OF SESSIONS

Intervention consisted of twelve 30-minute sessions over three weeks (4x/week). Each session picked up where the previous one left off.

Procedure for each phoneme (focus on word-initial due to tendency to add frication at word's end):

- *Sound/letter in isolation:*
 - Show printed representation of the letters. Once > 50% on this (or subsequent levels) when probed, move to next level.
- *Target sounds in words:*
 - Locate target letter in text shown, phonological awareness skills (i.e., segmentation, blending).
 - Introduce picture that represents target word (*drawing of wand*) to ensure participant's knowledge of the written word (*wand*) coincides with its phonological conception.
- *Target word in phrases:*
 - Introduce sight words (e.g., want, my, see), practice (e.g., **see + wand**).
- *Target word in sentences:*
 - Add sight words (or other words learned in different cycle) and punctuation.
- *Target word in short ebooks:*
 - Multiple readings promote fluent reading.
 - Comprehension questions read aloud and shown with visual support. Originally had 2 answer choices for concrete questions about a single page of the story. By end of intervention, had 4 answer choices for more abstract questions about entire story.



POST-TESTING

Targeted informal testing of areas of need was completed using the iPad (i.e., adding visual support) found:

- ✓ **READING** – GORT-4 passages
 - ✓ Skipped neither words nor lines of text.
 - ✓ Comprehension scores of 40% and 60% on two reading passages.
 - ✓ Comprehension and fluency improved.
- ✓ **SINGLE WORD INTELLIGIBILITY** – 23%
 - ✓ Decrease from pre-testing possibly due to the presence of a yet unspecified apraxia.
 - ✓ More comprehensible with known context.
- ✓ **MOTOR/ORAL TASKS** – completed variety of tasks
 - ✓ See below for sample tasks.
 - ✓ 20% of tasks difficult to complete.
 - ✓ Possible oral or ideomotor apraxia.
- ✓ **LANGUAGE** – CELF-5 subtests
 - ✓ Understanding relationships among items (88%)
 - ✓ Following directions (60%)
 - ✓ Sentence repetition – could not complete
 - ✓ Adding visual support would move Q4 into a less severe category of language disorder.

Show me how you wave your hand.



Say:
Puppy puppy puppy.



OUTCOMES

By the end of the experimental period, Q4 was:

- ✓ Answering concrete and abstract comprehension questions by selecting from among a group of 4 possible options.
- ✓ Using new vocabulary words (e.g., iris, shed) as soon as he learned them.
- ✓ Allowing researchers to attempt sound elicitation (i.e., /g f v/).

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