

## **Children with Literate Language Deficits: Dynamic Assessment of Morphological Skills**

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### **Background:**

Resources are limited for older students with phonological processing deficits who struggle with decoding and spelling. The Report of the National Reading Panel (NRP, 2000) identified phonemic awareness and phonics to be critical areas necessary for success in reading. Individuals with language-learning disorders often have deficits in these areas. Normal readers use both orthographic as well as phonological information to decode an unknown word, whereas poor readers relied more on the use orthographic information (Foorman & Liberman, 1989; Carney & Martin, 2003). Closely related to phonological awareness, morphological awareness is crucial to success in both reading and spelling. An underlying weakness in phonological awareness may contribute to the difficulty that poor readers have with morphological relationships (Ruben, Patterson, & Kantor, 1991). Carlisle (1987) found that learning disabled students relied on whole word and grapheme-phoneme correspondence to spell words rather than considering the morphological structure. Tunmer (1991) proposed one of the best measures of phoneme segmentation, which falls under the broader lesson of phonemic awareness, is the use of nondigraph nonwords. The use of nonwords in reading tasks forces students to apply their phonological awareness skills in order to sound out the word, rather than relying on lexical memory.

### **Method:**

**Participant:** This was a single subject case study involving a female college student (23;6), who was diagnosed with dyslexia and receiving treatment at the Northern Illinois University Speech-Language-Hearing Clinic. She demonstrated marked difficulty in the areas of phonological awareness and decoding skills, causing her to have difficulty with phonemic segmentation, and understanding the alphabetic principle (i.e., sound-letter association) to decode print. Initially, she implemented limited strategies to overcome her difficulty to recognize isolated words (i.e., memorizing words by sight).

### **Measures:**

*Comprehensive Test of Phonological Processing (CTOPP): Elision, Blending Words, Memory for Digits, and Nonword Repetition* subtests-to assess phonological awareness and phonological memory

*Woodcock Reading Mastery Tests-Revised (WRMT-R): Word Identification and Word Attack* subtests-to assess different aspects of decoding ability: identify isolated words and apply phonic and structural analysis skills in order to pronounce words with which she may be unfamiliar.

### **Procedure:**

The client was enrolled in a 50-minute therapy session once weekly for 20 sessions. Nonsense words were created and used in a readily available phonological/phonemic awareness and phonics program, *Reading Reflex*, (McGuinness & McGuinness 1998) in order to improve decoding and spellings skills while limiting lexical support. The nonsense words used in this study were randomly created without regard to neighborhood density or phonotactic probability.

*Beginning of Treatment:*

- Introduced letters and corresponding sounds
- Completed *3-Sound Word Building* and phonemic awareness tasks using nonsense words
  - *Reading Reflex* words included: cat, mop, cop, bug, rig, wet, mutt, bell
  - Nonsense words used included: **cas, mof, fom, gid, wen, mub, bezz**
- Completed *3-Sound Directed Reading* and *Spelling* tasks using nonsense words
- Completed *Sound Word Building* and phonemic awareness of adjacent consonants using nonsense words
  - *Reading Reflex* words included: twig, elk, amp, desk, tent, bulb, glass
  - Nonsense words used included: **trig, alk, emp, tant, bilb, gless**

*Middle of Treatment:*

- Taught all sounds in the *Advanced Code* (i.e. sounds can be represented by more than one symbol such as “sh” )
- Completed *Mapping and Sorting*, *Word Analysis* and *Spelling* tasks using nonsense words
  - *Reading Reflex* words included: note, cow, girl, leap, tray, bruise, graph
  - Nonsense words used included: **pote, fow, birl, cleap, wray, druise, braph**
- Completed weekly decoding and spelling reviews of learned sounds
- Introduced 6 Different Syllable Shapes using nonsense words
  - **lo, lig, gumble, foy, kote, gar**

*End of Treatment:*

- Completed *Reading and Mapping Multisyllabic Words with Visual Stops* with 2-3 syllable nonsense words
  - *Reading Reflex* words included:
    - 2- syllable: funn – y, pea – nut, litt – le
    - 3- syllable: un – ea – sy, cel – e – brate, me – chan – ic
  - Nonsense words used included:
    - 2- syllable: **frunn – y, plea – nute, plitt – le**
    - 3- syllable: **un – plea – sy, chel – e – brade, me – chan – id**
- Completed *Reading and Mapping Multisyllabic Words without Visual Stops* with 2-3 syllable nonsense words
  - *Reading Reflex* words included:
    - 2- syllable: gopher, jumble, lobster
    - 3- syllable: centigrade, calculate, recommend
  - Nonsense words used included:
    - 2- syllable: **glopher, jundle, floabster**
    - 3- syllable: **centigrade, palcubrate, recomeck**
- Defined and segmented prefixes and suffixes using nonsense words
  - Nonsense words used included: **unshelt, enthroop, disprell, fremptly, frowful, quadeness**
- Completed weekly decoding and spelling reviews of 2-4 syllable nonsense words
  - **ghimble, fountaim, krassident, magnipert, houskildade, abbermaddle**

## Results:

Test	Pre-Test SS (PR)	Post-Test SS(PR)
<b>CTOPP:</b>		
• Elision	10 (50)	10 (50)
• Blending Words	5 (5)*	14 (91)
• Memory for Digits	7 (16)	10 (50)
• Nonword Repetition	4 (2)*	7 (16)
-Phonological Awareness Composite	85 (16)	112 (79)
-Phonological Memory Composite	73 (3)*	91 (27)
<b>WRMT-R:</b>		
• Word Identification	78 (7)*	99 (48)
• Word Attack	84 (15)*	105 (64)
- Basic Skills Composite	76 (5)*	102 (56)

\* Below the average range

## Conclusion:

Use of nonsense words integrated with a phonological/phonemic awareness/phonics program was effective for this case. Nonsense words significantly eliminated the client's ability to read words using visual memory strategies; forcing her to develop a firm knowledge and understanding of sounds and how they are combined. Once the skill of segmenting words developed, client improved her ability to decode and encode complex words. Additionally, instruction of morphological structures, such as prefixes and suffixes, aided her ability to decode and encode, as well as increased her word knowledge. Both of these skills carried over into reading tasks, using real, technical terms, in which client decreased the number of miscues over the course of the treatment. *Reading Reflex* was an easy-to-use phonological program, breaking down the steps to teaching reading and spelling in a logical order. Future research should continue to investigate the use of nonsense words in clinical treatment, by researching their effectiveness in younger students.

*"You have changed my life."*

(Client)

## References:

- Carlisle, J. 1987. The use of morphological knowledge in spelling derived forms by learning-disabled and normal students. *Annals of Dyslexia* 37:90-108.
- Carney, A. & Martin, F. (2003). Regularisation of nonwords in dyslexia: contributions of visual orthographic and phonological onsets. *Journal of Research in Reading*, 26, 151.
- Foorman, B.R. and Liberman, D. (1989). Visual and phonological processing of words: A comparison of good and poor readers. *Journal of Learning Disabilities* 22(6). 349-355.
- National Reading Panel (2000). Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction. (NIH Pub NO. 00-4769).
- Rubin, H, Patterson, P.A., & Kantor, M. (1991). Morphologic development and writing ability in children and adults. *Language, Speech, and Hearing in the Schools*, 22, 228-235.
- Tunmer (1991) Phonological Awareness and Literacy Acquisition. In Rieben & Perfetti (Eds.), *Learning to read: Basic research and its implications*, 105-119. Cambridge, MA: The MIT Press.