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# Measuring Phonemic Awareness without Speech Responses: Investigating the Validity of a New Assessment

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#### Aim

Phonological awareness is one of the best predictors of reading achievement. Unfortunately, most assessments of phonological awareness require spoken responses (e.g., Comprehensive Test of Phonological Processing [CTOPP]) and cannot be used reliably with children who have complex communication needs (CCN). These assessments also have verbal instructions that may be difficult to understand by individuals with poor comprehension. We created a new assessment, the Dynamic Assessment of Phonemic Awareness via the Alphabetic Principle (DAPA-AP), as an alternative. DAPA-AP is computerized, has simple verbal instructions, does not require speech responses, has a dynamic component that teaches the task, and provides feedback on every trial. Previous work with the DAPA-AP has established its reliability and validity in speaking adults who have intellectual disability and limited reading skills (Barker, Bridges, & Saunders, 2014). The goal of this presentation is to describe pilot data on the validity of the DAPA-AP with speaking preschool and school-aged children.

#### Method

The DAPA-AP was administered to 33 preschool and school-aged children (ages 3.6 to 9.8; M = 5.4 years). Five children had mild developmental or learning disabilities (ages 4.6 to 9.8; M = 8.0 years). The remaining participants had typical development (ages 3.6 to 8.2; M = 4.9 years). Inclusion criteria for the study were sufficient speech and language skills to respond to standard phonological awareness assessments and decoding skills below the 2<sup>nd</sup> grade level as indicated by the Woodcock Reading Mastery Tests – 3<sup>rd</sup> edition (WRMT-III). In addition to the DAPA-AP, they received an experimenter-created test of letter-sound knowledge, as well as sound matching, elision, blending words, and rapid letter naming from the CTOPP, 2<sup>nd</sup> edition (CTOPP-2; used to establish concurrent validity), and the word identification and word attack from the WRMT-III (used to establish convergent validity). The DAPA-AP consists of 4 subtests, onset, rime, coda, and vowel. Each subtest evaluates a person's ability to judge the difference between minimal pairs of spoken words when those words differ at the targeted positions (e.g., discriminating the spoken "mat" and "sat" by touching the printed mat or sat on a touchscreen). Maximum score per subtest is 3. Participants indicate responses by touching one of two printed CVC words on the screen that correspond with the words of the spoken minimal pair. Participants received preinstruction designed to ensure they could visually discriminate the printed CVC syllables used in the DAPA-AP. Subtests were not administered unless a participant successfully completed this pre-training and a score of 0 was given for the subtest.

## Results

Preliminary results generally replicate the findings from our previous work with adults. All of the subtests of the DAPA-AP, onset, rime, coda, and vowel, were significantly correlated with one another, rs = .63 to .78, ps < .01. In addition, a total composite score for the DAPA-AP was significantly correlated with each of the onset, rime, coda, and vowel subtests, rs = .87 to .93, ps < .01. Analyses were conducted with this total score, as it was an accurate representation of overall performance on the DAPA-AP. Pearson correlations with 95% bootstrapped confidence intervals were calculated between the DAPA-AP total score and the standard measures. The DAPA-AP total score was significantly and positively correlated with scores on elision, blending, sound matching, letter-sound knowledge, WID, and WA, rs = .65, .58, .65, .58, .61, & .44, respectively, according to traditional p-values and bootstrapped 95% confidence intervals that did not contain 0. The DAPA total score was *not* significantly associated with rapid letter naming, r = -.11, p = .63. These relationships were reexamined with the children with developmental disabilities excluded. All of the relationships were slightly stronger, with the exception of rapid letter naming, which became significant and very strong, r = -.82, p < .01.

## Conclusion

These preliminary results replicate and extend our previous findings with adults who had mild to moderate intellectual disability. Specifically, DAPA-AP may be a valid assessment of phonological awareness in children, as well as adults. As a result, the DAPA-AP may serve to fill the need for phonological awareness assessment of children who have complex communication needs, intellectual disabilities, or otherwise have difficulty taking assessments that require spoken responses. Future research and implications will be discussed.

# References

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Declaration of Interest Statement: The authors disclose they have no financial or other interest in objects or entities mentioned in this paper.