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This study presents a critical review of research examining the long-term effectiveness of Integrated Phonological Awareness (IPA) approaches on literacy skills in children with Speech Sound Disorders (SSD). The critical review involves an evaluation of eight articles exploring the utility of IPA approaches in the areas of articulation, language and literacy. Children with Childhood Apraxia of Speech (CAS) were included in this review as a sub-population of children with SSD. Overall, the results of this review suggest that IPA intervention approaches have positive and accelerated long-term effects on literacy skills in children SSD, but remain to be inconclusive for children with CAS.

For the purpose of this review Speech Sound Disorder (SSD) is defined as an atypical articulation delay in the absence of diagnosed

word-decoding and word-recognition skills. Additionally, 10 out of 12 children who received the IPA intervention were reading at or above their age-expected level at follow-up.

Participants with SSD in this study were taken as a convenience sample from Gillon (2000); however, post-hoc analysis revealed no significant differences in measures between the two SSD groups prior to intervention. Participants also varied in their length of participation in the formal education system (6-12 months) and were not matched on this factor. Another limitation of this study involves the unmatched follow-up periods for the two groups of children with SSD (11-months) when compared to the group of typically developing children (seven months).

Despite these weaknesses, the study presents compelling evidence to suggest that IPA intervention contributes to significant and sustained growth in literacy skills

to typically developing children on these measures.

Intervention duration and content were described with ample detail making accurate replication possible. Participant inclusion criteria for this study were also well-defined, as was the individual participants' educational situations with regards to their exposure to early literacy promotion. Participants in the experimental and SSD

concerning measures of metaphonology, reading recognition and comprehension, and spelling will be discussed.

Participants' pre-intervention and post-intervention profiles were described in great detail. The authors also explored individual performance features for participants who stood out in the sample which allowed for a more thorough qualitative analysis of individual data. A control group was not employed, but standardized measures of the assessment constructs served as norm references. Appropriate constructs were used to assess measures, including metaphonology which, at the time of the study, had no commercially available test sufficient for the authors' range of tasks. Instead, the author created a battery which was described in sufficient detail and seemed appropriate to measure the constructs/activities they hoped to assess in the study.

It should be noted no statistical analyses followed the authors' descriptive presentation of the following outcome data: 10 out of 12 children demonstrated average or above average scores on reading recognition and comprehension, 7 out of 12 children demonstrated average or above average spelling performance.

Overall, this study provides somewhat suggestive evidence that an IPA intervention

approaches in promoting literacy skill development. The lack of evidence to support accelerated growth in literacy skills in this population suggests that children with CAS may require more intensive intervention in order to continue to develop skills at an age-appropriate rate.

It should also be noted that this field of research is dominated by a single author (Gillon, G.) who appears in six of the eight studies used in this review. Several of the studies were also co-current and involved the same participants, which furthers the

Hesketh, A., Adams, C., Nightingale, C., & Hall, R. (2000). Phonological awareness therapy and articulatory training approaches for children with phonological disorders: A comparative outcome study.

, 35, 337-354.

Kirk, C. and Gillon, T. (2007). Longitudinal Effects of Phonological Awareness Intervention on Morphological Awareness in Children with Speech Impairment. , , 3 , 342-352.

Lewis, B., Freebairn, H., Taylor, G. (2000). Follow-up of children with early expressive phonology disorders.