



NSW Speech Pathology Evidence Based Practice Interest Group

Critically Appraised Paper (CAP)

CLINICAL BOTTOM LINE: In preschoolers with phonological impairment of unknown origin, working on stimulability plus speech perception of target sounds prior to treatment of phonological processes, leads to greater improvement in target sounds than a treatment approach that only targets speech sound production.

Clinical Question [patient/problem, intervention, (comparison), outcome]: In children with a phonological impairment of unknown origin, are intervention gains more widespread and efficient if stimutable or non-stimutable phonemes are targeted during phonologically based intervention?

Search Terms:

Search Systems: Article suggested by academic specialising in paediatric speech sound disorders

Citation: Rvachew, S, Rafaat, S & Martin, M (1999) Stimulability, Speech Perception Skills and the treatment of phonological disorders. *American Journal of Speech-Language Pathology*, 8 p.33-43

Design: Two different treatments are compared using an ABA design: assessment, intervention, assessment. Descriptive data only is supplied.

Participants. Study 1: 10 children mean age 4.6 years. Study 2: 13 children mean age 4.7 years. All children with diagnosed with moderate or severe phonological impairment using GFTA. Receptive and expressive language WNL (except morpho-syntactic abilities related to phonological constraints). Oral motor structures and function, and hearing WNL.

Experimental Group: Study 1: Children were allocated to one of 4 treatment groups (each containing 2-4 children), and seen once weekly for 9 weeks. A modified cycles approach was used, where sounds were targeted for 3 sessions. Treatment included auditory bombardment, story time, drawing pictures practise, drill production activities, and review of progress with parents. Study 2: same as above with a total of 9 once weekly sessions, however, the first 3 group sessions were substituted with 3 individual sessions to practise stimulability and speech perception training using eh SAILS (Speech Assessment & Interactive Learning System). These 3 individual, weekly sessions lasted 20 minutes. Following this, the children received the remaining 6 sessions as part of a group containing 3-4 children, and were treated using a modified cycles approach.

Control Group: Nil

Results: For children in study 1, gains in production were most likely to occur if the child was stimutable and had good speech perception for a given sound prior to treatment. No progress was observed for any sounds that were nonstimulable at the beginning of treatment. The children in study 2 made reasonable gains in production of most sounds, even when those sounds were nonstimulable or were associated with poor speech perception before treatment. This study supports other research showing that stimulability and speech perception are independent variables, and that pre-treatment stimulability is a predictor of treatment success for children receiving intervention for phonological impairment.

Comments on Design: "both studies involve small samples of children and phonemes", "experimental investigation of the modified cycles approach was not undertaken", "both studies are purely descriptive" (p.40)

Level of Evidence (NH&MRC): IV

Appraised By: EBP Paediatric Speech Group

Date: 9/6/05