NSW Speech Pathology Evidence Based Practice Interest Group

Critically Appraised Paper (CAP)

CLINICAL BOTTOM LINE: In children with phonological impairments speech perception + speech production + phonological awareness training (using SAILS) leads to greater gains in speech production and speech perception than speech production training only. Both groups made improvements in their phonological awareness skills, however there were no significant differences between the two groups. At the time the paper was reviewed, the SAILS program was only suitable for Western Canadian English speakers. In its current form, SAILS is not suitable for children with phonological impairment learning the Australian dialect of English.

Clinical Question [patient/problem, intervention, (comparison), outcome]: In children with phonological impairment does the Speech Assessment and Interactive Learning System (SAILS) plus speech production training compared with speech production training alone lead to better speech production outcomes?

Citation: Rvachew, S., Nowak, M., & Cloutier, G. (2004). Effect of Phonemic Perception Training on the Speech Production and Phonological awareness skills of children with expressive phonological delay. *American Journal of Speech-Language Pathology;* 13 (3), 250-263.

Design/Method: Randomised control trial

Participants: 34 preschoolers (41-59 months) with moderate or severe expressive phonological delays who were due to receive therapy during their prekindergarten year at Alberta Children's Hospital.
All children had average or above average receptive vocabulary skills, 67% had delayed expressive syntax, normal oro motor skills and hearing WNL (on screening). Pre treatment assessment offered first, then intervention and a post treatment assessment 6 months after the pre treatment assessment.

Experimental Group: Each child received a pre assessment (GFTA-II, PPVT-III, spontaneous speech sample, phonemic perception via SAILS computer program, phonological awareness using modified Bird PA test).
All children received speech therapy directed at their sound errors with number, duration and frequency of therapy sessions determined by their treating speech pathologist. However, no ear training or other auditory approaches were used.
10 SLP's provided therapy to the participants. They treated equal numbers of children from the experimental and control groups, ranging from 2-8 children treated. Each child received an average of 600 minutes of therapy in 12 sessions over 4 months.
The children were randomly selected into experimental and control groups. Each group had 17 children (5 girls and 12 boys).
The experimental group received 16 x 15 minute treatment sessions weekly after their regular therapy session using the SAILS program. A post treatment assessment was conducted 6 months post pre assessment.

Control Group: The control group received 16 x 15 minute treatment sessions weekly after their regular therapy using a computerized book with Blanks levels of questioning used by their parent according to a script. As per experimental group a post treatment assessment was conducted 6 months post pre assessment.

Results: The experimental group showed greater improvements in phonemic perception and speech production than the control group. Both groups made improvements in their phonological awareness skills, however there were no significant differences between the two groups.

Comments – Strengths/weaknesses of paper

- Random allocation and groups matched for sex, SES and therapy treatment type.
- Results replicated 3 previous studies showing that a phonemic perception intervention significantly improves the effectiveness of speech therapy that is directed at the remediation of speech production – adding to the evidence-based for including speech perception training based on SAILS in interventioin.
- A practical limitation of the study for SLPs working in Australia, is that they could not use the SAILS program. The SAILS program was designed for Western Canadian English speakers. Given the underlying premise about children learning to establish more robust acoustic-perception representations, a version of SAILS suitable for the Australian dialect would be needed to apply the clinical bottom line to everyday practice.

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Resource Package

Level of Evidence (NH&MRC): III (I)

Appraised By:
Clinical Group: Paediatric Speech Group

Date: 30/05/11

DISCLAIMER—THIS CAP WAS COMPLETED by PRACTISING SLPs. YOU ARE STRONGLY ENCOURAGE TO READ AND REVIEW THE ARTICLE FOR YOURSELF BEFORE MAKING ANY CLINICAL DECISIONS ASSOCIATED WITH THE CLINICAL QUESTION. ALSO —PLEASE NOTE THE DATE WHEN THIS CAP WAS COMPLETED. THE CLINICAL BOTTOMLINE MAY HAVE CHANGED IN LIGHT OF MORE RECENT RESEARCH.

Form based on Worrall & Bennett, Evidence based Practice: Barriers & Facilitators for Speech-Language Pathologists, *Journal of Medical Speech-Language Pathology* 2:9, xi – xvi **Updated February 2006**

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