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A randomised controlled trial comparing the efficacy of pre-school language interventions - Building Early Sentences Therapy and an Adapted Derbyshire Language Scheme

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Introduction

Building Early Sentences Therapy (BEST) and the Derbyshire Language Scheme (DLS) are effective in improving children's use and/or understanding of simple sentences (1, 2). BEST is based on 'usage-based' theory. (3) The underlying hypothesis being that the systematic manipulation of the nature and quantity of language a child hears, promotes abstract, flexible knowledge and use of a range of sentence structures, hence accelerating future language learning (4). DLS incrementally increases the information carrying words children are asked to understand and produce. Comparisons of effective interventions enable informed choices to be made regarding which work best for a given child, context, or family preference. Furthermore, comparing interventions delivered with the same dosage, delivery context, and treatment fidelity tests whether it is the specific learning mechanisms exploited by the interventions which promote change.

Aims

to determine whether

- BEST and an adapted DLS (A-DLS) which follows the principles of traditional DLS but delivers the program more rapidly, differ in their efficacy,
- BEST and A-DLS differ in the degree to which benefits generalise to broader language and communication skills,
- BEST accelerates progress after intervention as predicted by usage-based theory.

Methods

Design: Twenty schools were independently randomised to receive BEST or A-DLS. Measures were collected at baseline, outcome, and follow-up.

Participants: Children aged 3;06–4;06, identified by teachers as monolingual English speakers, and not meeting age-related expectations in their language development, were assessed and included if

they: Scored \leq 16th centile on the New Reynell Developmental Language Scales (NRDLS) (5) comprehension and/or production subscales and had no sensorineural hearing impairment, severe visual impairment or learning disability.

Interventions were delivered twice weekly in preschool settings in ~15-minute group sessions for eight weeks by qualified Speech and Language Therapist researchers, trained to deliver both interventions with high fidelity. BEST and A-DLS were manualised and delivered with standardised resources and treatment fidelity checked.

Measures were completed blind to intervention arm. Primary outcomes were comprehension and production subscales of the NRDLS. Secondary outcomes measured targeted structures (BEST picture description, an adapted DLS rapid screening test) and teacher reported functional communication (FOCUS: functional communication in Children under Six (6)).

Data analysis: ANCOVAs comparing intervention groups on each measure, at outcome and follow-up, while covarying the respective baseline value.

Results and Conclusions

One-hundred-and-two children participated. Primary outcome: There were no differences in NRDLS comprehension or production standard scores at outcome but children receiving BEST had higher comprehension and production standard scores at follow-up. Secondary outcomes: No group differences. Both interventions were associated with large clinically meaningful changes on the FOCUS.

Contribution to new knowledge BEST brings gains in non-targeted language structures for both production and comprehension. Significant changes in standard scores post-intervention suggest BEST can accelerate progress in comprehension.

implications for practice and/or policy service: both interventions bring clinically meaningful changes. BEST is more effective than A-DLS in the service delivery model used in the LIVELY study.

brief description of any service-user engagement/involvement in the study: PPI with parents, SLTs and educators was completed prior to and during the study.

Outcomes

An understanding of

- usage-based linguistic theory and its application to interventions
- the evidence supporting the efficacy of the DLS and BEST
- the relative efficacy of BEST and an adapted DLS which follows DLS principles, incrementally increasing the information carrying words the child uses and understands, but which delivers the programme more rapidly
- the hypothesised mechanisms through which BEST accelerates progress post-intervention.