Foundations
What Works Centre for Children & Families

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Intervention website: https://www.teachneli.org/

GUIDEBOOK INTERVENTION INFORMATION SHEET

Nuffield Early Language Intervention (30 weeks)

Please note that in the 'Intervention summary' table below, 'child age', 'level of need', and 'race and ethnicities' information is **as evaluated in studies**. Information in other fields describes the intervention as **offered/supported by the intervention provider**.

Intervention summary	
Description	The Nuffield Early Language Intervention (NELI) (30 weeks) is a schools-based intervention for children aged 3 to 6 years with poor language skills. It is delivered by trained teaching assistants to children for a period of 30 weeks, with the aim of improving children's vocabulary, narrative skills, listening, and independent speaking.
Evidence rating	3+
Cost rating	2
Child outcomes	• Enhancing school achievement and employment - Improved speech, language and communication - Improved literacy.
Child age (population characteristic)	3 to 6 years
Level of need (population characteristic)	Targeted Indicated

Intervention summary	
Race and ethnicities (population characteristic)	White British
Type (model characteristic)	• Individual • Group.
Setting (model characteristic)	• Children's centre or early years setting • Primary school.
Workforce (model characteristic)	Trained teaching assistant
UK available?	Yes
UK tested?	Yes

Model description

The Nuffield Early Language Intervention (NELI) (30 weeks) is a schools-based intervention for children aged 3 to 6 years with poor language skills. It is delivered by trained teaching assistants to children for a period of 30 weeks, with the aim of improving children's vocabulary, narrative skills, listening, and independent speaking. It can be delivered in preschool or reception class.

A trained teaching assistant delivers sessions for 30 weeks. The first 10 weeks take place when the children are in nursery, comprising three 20-minute sessions delivered to groups of two to four children each week. It is followed by 20 weeks of sessions at school, comprising three 30-minute group sessions (to groups of three to five children) and two 15-minute individual sessions each week.

Children develop their vocabulary and language skills within a structured framework that follows established principles for teaching listening, vocabulary and narrative. In the final 10 weeks, activities promoting phonological awareness and letter-sound knowledge are introduced. Narrative work gives children the opportunity to practise taught vocabulary in connected speech and introduces them to key story elements and the sequencing of events while encouraging expressive language and grammatical competence.

Target population

Age of child	3 to 6 years
Target population	Children starting school with poor language skills

Please note that the information in this section on target population is as **offered/supported by the intervention provider**.

Theory of change

Why		Who	How	What		
Science-based assumption	**Science-based assumption**	**Science-based assumption**	**Intervention**	**Short-term outcomes**	**Medium-term outcomes**	**Long-term outcomes**
Delays in early language development, including reduced vocabulary and expressive language skills, can persist throughout school and negatively impact academic achievement.	Early language development is an important part of children's ability to learn at school, including learning to read, and contributes to social and emotional development.	Children with poor language are less able to engage in learning at school and may experience psycho-social difficulties.	The mixture of small group and individual sessions focus on improving children's vocabulary, developing narrative skills, encouraging active listening, and building confidence in independent speaking.	• Improved child receptive and expressive language • Improved reading.	• Increased learning at school • Reduced social and emotional difficulties.	Increased child school achievement.

Implementation requirements

Who is eligible?	Children starting school with poor language skills.
How is it delivered?	NELI (30 weeks) is delivered in 130 sessions by a trained teaching assistant, first in nursery, comprising three 20-minute sessions delivered to groups of two to four children each week for 10 weeks, and then at school three 30-minute group sessions and two 15-minute individual sessions each week to groups of three to five children.
What happens during the intervention?	• The mixture of small group and individual sessions focus on improving children's vocabulary, developing narrative skills, encouraging active listening, and building confidence in independent speaking. • In the second half of the intervention, activities promoting phonological awareness and letter-sound knowledge are introduced. • Children develop their vocabulary and language skills within a structured framework that follows established principles for teaching listening, vocabulary, and narrative. • Narrative work gives children the opportunity to practise taught vocabulary in connected speech and introduces them to key story elements and the sequencing of events while encouraging expressive language and grammatical competence.
Who can deliver it?	The practitioner who delivers this intervention is a trained teaching assistant.
What are the training requirements?	The practitioners have two days of intervention training. Booster training of practitioners is not required.
How are practitioners supervised?	Practitioner supervision is not required.
What are the systems for maintaining fidelity?	Intervention fidelity is maintained through the following processes: • Training manual • Other printed material • Face-to-face training.
Is there a licensing requirement?	No

Implementation requirements (Cont.)

***Contact details**	Contact person: Professor Charles Hulme Organisation: University of Oxford Email address: info@oxedandassessment.com Website: https://www.teachneli.org *Please note that this information may not be up to date. In this case, please visit the listed intervention website for up to date contact details.

Evidence summary

NELI (30 weeks)'s most rigorous evidence comes from one RCT conducted in the UK consistent with Foundations' Level 3 evidence strength threshold. An additional RCT conducted in the UK was consistent with Level 2 evidence strength threshold. The studies observed improvements in oral language ability, narrative skills and phoneme awareness in the NELI (30 weeks) children, compared to a control group straight after the intervention and after 6 months; and an improvement in reading comprehension at 6-month follow-up.

NELI (30 weeks) can be described as evidence-based: it has evidence from at least one rigorously conducted RCT or QED demonstrating a statistically significant positive impact on at least one child outcome, as well as at least one more RCT or QED.

Child outcomes			
Outcome	**Improvement index**	**Interpretation**	**Study**
Improved oral language post-intervention	+12	Increase in oral language ability (measured using a composite of vocabulary, grammar, and listening scales) This means we would expect the average participant in the comparison group who did not receive the intervention (i.e. someone for whom 50% of their peers have better outcomes and 50% have worse outcomes), to improve to the point where they would have better outcomes than 62% and worse outcomes than 38% of their peers, if they had received the intervention.	1

Improved oral language at 6-month follow-up	+12	Increase in oral language ability (measured using a composite of vocabulary, grammar, and listening scales) This means we would expect the average participant in the comparison group who did not receive the intervention (i.e. someone for whom 50% of their peers have better outcomes and 50% have worse outcomes), to improve to the point where they would have better outcomes than 62% and worse outcomes than 38% of their peers, if they had received the intervention.	1
Improved taught vocabulary post-intervention	+13	0.76-point improvement on the picture naming task This means we would expect the average participant in the comparison group who did not receive the intervention (i.e. someone for whom 50% of their peers have better outcomes and 50% have worse outcomes), to improve to the point where they would have better outcomes than 63% and worse outcomes than 37% of their peers, if they had received the intervention.	1
Improved taught vocabulary at 6-month follow-up	+30	0.68-point improvement on the picture naming task This means we would expect the average participant in the comparison group who did not receive the intervention (i.e. someone for whom 50% of their peers have better outcomes and 50% have worse outcomes), to improve to the point where they would have better outcomes than 80% and worse outcomes than 20% of their peers, if they had received the intervention.	1
Improved taught vocabulary post-intervention	+12	2.41-point improvement on the definition asking task	1

		This means we would expect the average participant in the comparison group who did not receive the intervention (i.e. someone for whom 50% of their peers have better outcomes and 50% have worse outcomes), to improve to the point where they would have better outcomes than 62% and worse outcomes than 38% of their peers, if they had received the intervention.	
Improved taught vocabulary at 6-month follow-up	+21	1.39-point improvement on the definition asking task This means we would expect the average participant in the comparison group who did not receive the intervention (i.e. someone for whom 50% of their peers have better outcomes and 50% have worse outcomes), to improve to the point where they would have better outcomes than 71% and worse outcomes than 29% of their peers, if they had received the intervention.	1

Search and review

	Number of studies
Identified in search	3
Studies reviewed	2
Meeting the L2 threshold	1
Meeting the L3 threshold	1
Contributing to the L4 threshold	0
Ineligible	1

Individual study summary: Study 1

Study 1	
Study design	RCT
Country	UK
Sample characteristics	394 children with an average age of 3.8 years, with low-average standardised language scores
Race, ethnicities, and nationalities	66% White-British
Population risk factors	• 28% of the sample were eligible for free school meals • 38% of the sample were at the 10th centile or lower in screening tests, meaning that a high proportion of the sample had clinically significant language difficulties, and 13% had special educational needs.
Timing	• Baseline • Post-intervention • 6-month follow-up.
Child outcomes	• Improved oral language • Improved taught vocabulary.
Other outcomes	None
Study Rating	3
Citation/s	**Study 1a:** Fricke, S., Burgoyne, K., Bowyer-Crane, C., Kyriacou, M., Zosimodou, A., Maxwell, L., Lervåg, A., Snowling, M. J. & Hulme, C. (2017) The efficacy of early language intervention in mainstream school settings: A randomized control trial. *Journal of Child Psychology and Psychiatry*. 58, 10, 1141–1151. **Study 1b:** Sibieta, L., Kotecha, M. & Skipp, A. (2016). *Nuffield Early Language Intervention: Evaluation report and executive summary*. Education Endowment Foundation.

Brief summary

Population characteristics

This study involved 394 children living in England (Greater London, Yorkshire, and Nottinghamshire) across 34 nurseries, with language difficulties. 51% of the sample were boys. Children in nurseries with the lowest scores on screening measures (CELF) were selected for further screening. Up to 12 children from each nursery were selected to take part, based on having the lowest scores on screening measures. The 30-week intervention only took place in nursery and reception class. Children on the nursery's special educational needs register and those learning English as an Additional Language were not screened for the study, although some were included in the study.

38% of the sample were at the 10th centile or lower in screening tests, meaning that a high proportion of the sample had clinically significant language difficulties. 28% of the sample tested at baseline were eligible for free school meals. 13% had special educational needs. 66% of the sample were White-British. 16% were learning English as an Additional Language.

Study design

394 children were randomly assigned to a NELI (20-week) group (N=133), a NELI (30-week) group (N=132) and a wait-list control group (N=129) by a minimisation procedure, whereby randomisation was iterated and the optimal distribution on control factors (age, gender, and language composite) was identified.

The wait-list control group received business-as-usual. By the point of the 6-month follow-up, some of the children in the wait-list control group had started to receive an alternative school-based speech and language intervention, though the nature and quality of such interventions varied widely. It was reported that the groups remained balanced on demographic characteristics and baseline scores.

Measurement

Assessments took place at baseline, post-intervention, and 6-month follow-up.

- **Researcher-led** assessments included the Clinical Evaluation of Language Fundamentals (CELF), the Renfrew Action Picture Test (APT), the British Picture Vocabulary Scale (BPVS), the York Assessment of Reading for Comprehension (YARC), and taught vocabulary picture naming test. All testers were blind to group allocation.

Study retention

Post-intervention

At post-intervention (study 1a), 93% (N=365) of the sample was retained, representing 90% (N=119) of the NELI (30 week) group and 91% (N=118) of the control group.

6-month follow-up

At 6-month follow-up (Study 1a), 84% (N=331) of the sample was retained, representing 82% (N=108) of the NELI (30-week) group and 83% (N=107) of the control group.

Results

Data-analytic strategy

For taught vocabulary outcomes, hierarchical linear models were used to assess differences between groups, with the baseline measure as a covariate, and with varying intercepts and fixed slopes across schools.

For oral language outcomes, latent variable modelling was used: the model captured variance in the pre-test, post-test, and delayed follow-up language scores in six latent variables (Language Pretest, Language Post-test, Language Delayed Follow-up, APT Pretest, APT Post-test, APT Delayed Follow-up). Similarly for early literacy outcomes, a latent variable model included variance captured by three latent variables (Literacy Pretest, Literacy Post-test, Literacy Delayed Follow-up). An intent-to-treat approach was used, and Full Information Maximum Likelihood estimators were used to handle missing data.

Findings

At post-test and 6-month follow-up (Study 1a), the study observed significant positive findings for the NELI (30-week) group compared to the control group in oral language. The difference between the 20-week and 30-week version of NELI was not significant.

For early literacy, there was no difference between the NELI (30 week) and control groups at post-test or 6-month follow-up.

For taught vocabulary, there were improvements in the NELI 30-week group compared to the control group in nursery-expressive naming, nursery definitions, reception definitions, and reception-expressive naming at post-test and 6-month follow-up.

Study 1: Outcomes table

Outcome	Measure	Effect size	Statistical significance	Number of participants	Measurement time point
Child outcomes					
Oral language skills	Composite latent variable, including CELF, BPVS, APT and YARC listening comprehension (researcher-led assessment)	d = 0.30	Yes	223	Post-intervention and 6-month follow-up
Early literacy	Composite latent variable, including YARC (researcher-led assessment)	d = 0.13	No	223	Post-intervention and 6-month follow-up
Taught vocabulary	Nursery-expressive naming (researcher-led assessment)	d = 0.34	Yes	246	Post-intervention
Taught vocabulary	Nursery-expressive naming (researcher-led assessment)	d = 0.31	Yes	223	6-month follow-up
Taught vocabulary	Nursery-definitions (researcher-led assessment)	d = 0.84	Yes	246	Post-intervention
Taught vocabulary	Nursery-definitions (researcher-led assessment)	d = 0.54	Yes	223	6-month follow-up
Taught vocabulary	Reception-expressive naming (researcher-led assessment)	d = 1.07	Yes	246	Post-intervention

Outcome	Measure	Effect size	Statistical significance	Number of participants	Measurement time point
Taught vocabulary	Reception-expressive naming (researcher-led assessment)	d = 0.66	Yes	223	6-month follow-up
Taught vocabulary	Reception-definitions (researcher-led assessment)	d = 0.51	Yes	246	Post-intervention
Taught vocabulary	Reception-definitions (researcher-led assessment)	d = 0.47	Yes	223	6-month follow-up

Individual study summary: Study 2

Study 2	
Study design	RCT
Country	UK
Sample characteristics	180 children from 15 UK nursery schools with a mean age of 4 years and poor oral language skills
Race, ethnicities, and nationalities	Not reported
Population risk factors	None
Timing	• Baseline • Post-intervention • 6-month follow-up.
Child outcomes	• Improved oral language • Improved narrative skills • Improved phoneme awareness

Study 2	
	• Improved reading comprehension (6-month follow-up only).
Other outcomes	None
Study Rating	2
Citation	Fricke, S., Bowyer-Crane, C., Haley, A. J., Hulme, C. & Snowling, M. J. (2013) Efficacy of language intervention in the early years. *Journal of Child Psychology and Psychiatry*. 54 (3), 280–290.

Brief summary

Population characteristics

This study involved 180 children across 15 nursery schools in UK, with poor oral language skills. The intervention started in nursery school and continued in reception class.

In each nursery school, the 15 children with the lowest scores on screening were selected for further testing, involving individual language and literacy assessments. The 12 children with the lowest scores on a composite measure (including the CELF Preschool Recalling Sentences, Expressive Vocabulary, Sentence Structure and Word Structure subtests) were selected to take part in the trial.

Gender and ethnicity information was not reported.

Study design

90 participants were randomly assigned to NELI (30 week) and 90 participants were assigned to a wait-list control, where participants received business-as-usual and did not receive any additional teaching during the study period.

There were differences between groups on two measures at baseline: the Renfrew Action Picture Test grammar subtest, and sound isolation.

Measurement

Assessments took place at baseline, post-test, and 6-month follow-up. Mid-intervention progress monitoring also took place, but these timepoints are not reported in the study.

- **Researcher-led** assessments included the CELF Preschool, the Renfrew Action Picture Test, a listening comprehension tasks, a narrative task, the Expressive Picture Naming and Receptive Picture Selection, the Alliteration Matching task (Carroll & Snowling), the York Assessment of Reading Comprehension, a spelling task, and the Block Design subscale from the Wechsler Preschool and Primary Scale of Intelligence (WPPSI III UK). An additional reading comprehension test (YARC beginner passage) was administered at 6-month follow-up only.

Study retention

Post-intervention

At post-intervention, 93% (N=167) of the sample were retained, representing 92% (N=83) of NELI participants, and 93% (N=84) of control group participants.

6-follow-up

At 6-month follow-up, 92% (N=165) of the sample were retained, representing 92% (N=83) of NELI participants, and 91% (N=82) of control group participants.

Results

Data-analytic strategy

Hierarchical linear models and structural equation models were used to assess the effects of NELI (30 week) compared to the control group, using Maximum Likelihood Missing Value estimators to allow for missing data, and robust (Huber-White) standard errors to allow for nesting of children within schools. Latent variable models were used to construct four constructs (Language, Narrative, Phoneme Awareness, and Literacy) from multiple measures.

Findings

The study observed statistically significant findings favouring the NELI (30 week) children, compared to the control group, at post-test and 6-month follow-up in taught vocabulary, language, narrative, and phoneme awareness.

Additionally, at 6-month follow-up there was an improvement in reading comprehension in NELI (30 week) children, compared to the control group.

Limitations

The conclusions that can be drawn from this study are limited by methodological issues: the groups are not equivalent at baseline.

Study 2: Outcomes table

Outcome	Measure	Effect size	Statistical significance	Number of participants	Measurement time point
Child outcomes					
Language	Composite score (researcher-led assessment)	d = 0.80	Yes	167	Post-intervention
Language	Composite score (researcher-led assessment)	d = 0.83	Yes	165	6-month follow-up
Narrative	Composite score (researcher-led assessment)	d = 0.39	Yes	167	Post-intervention
Narrative	Composite score (researcher-led assessment)	d = 0.30	Yes	165	6-month follow-up
Phoneme awareness	Composite score (researcher-led assessment)	d = 0.49	Yes	167	Post-intervention
Phoneme awareness	Composite score (researcher-led assessment)	d = 0.49	Yes	165	6-month follow-up
Literacy	Composite score (researcher-led assessment)	d = 0.31	No	167	Post-intervention
Literacy	Composite score (researcher-led assessment)	d = 0.14	No	165	6-month follow-up

Outcome	Measure	Effect size	Statistical significance	Number of participants	Measurement time point
Reading comprehension	YARC beginner passage (researcher-led assessment)	N/A	Yes	165	6-month follow-up
Taught vocabulary – nursery expressive	Picture naming (researcher-led assessment)	d = 0.27	No	167	Post-intervention
Taught vocabulary – nursery receptive	Picture selection (researcher-led assessment)	d = 0.25	No	167	Post-intervention
Taught vocabulary – reception definitions	Definitions task (researcher-led assessment)	d = 1.18	Yes	167	Post-intervention
Taught vocabulary – reception definitions	Definitions task (researcher-led assessment)	d = 1.08	Yes	165	6-month follow-up
Taught vocabulary – reception expressive	Picture naming (researcher-led assessment)	d = 0.83	Yes	167	Post-intervention
Taught vocabulary – reception expressive	Picture naming (researcher-led assessment)	d = 1.11	Yes	165	6-month follow-up

Outcome	Measure	Effect size	Statistical significance	Number of participants	Measurement time point
Intervention letter knowledge	Letter-sound test (researcher-led assessment)	d = 0.41	Yes	167	Post-test

Other studies

The following studies were identified for this intervention but did not count towards the intervention's overall evidence rating. An intervention receives the same rating as its most robust study or studies.

Haley, A., Hulme, C., Bowyer-Crane, C., Snowling, M. J. & Fricke, S. (2017) Oral language skills intervention in pre-school: A cautionary tale. *International Journal of Language & Communication Disorders*. 52, 71–79. **This reference refers to a randomised control trial, conducted in the UK.**

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Note on provider involvement: This provider has agreed to Foundations' terms of reference (or the Early Intervention Foundation's terms of reference), and the assessment has been conducted and published with the full cooperation of the intervention provider.