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The effect of the Nuffield Early Language Intervention programme on young children's oral language competence

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09/06/2023

Recruitment status
No longer recruiting

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15/06/2023

Overall study status
Completed

Last Edited
15/06/2023

Condition category
Mental and Behavioural Disorders

[ ] Prospectively registered
[ ] Protocol
[ ] Statistical analysis plan
[ ] Results
[ ] Individual participant data
[ ] Record updated in last year

Plain English summary of protocol

Background and study aims
Early language competence is a major predictor of children's academic achievement. Multiple studies have shown for example that young children's language skills are predictive of their future reading ability. In addition, language competence contributes to social functioning. It has been demonstrated for example that children with poor language abilities are more likely to be rejected by peers. Children's language competence should therefore be supported from an early age. Tutoring is one of the most effective manners to support early language competence. In Great Britain, it is implemented at a large scale by using the Nuffield Early Language Intervention (NELI) programme. The NELI programme is a 20-week tutoring programme developed for young children with poor language competence and is specifically directed at improving their vocabulary and oral communicative skills. Outcomes of a recent, large-scale study showed that the improvement in oral language competence was significantly stronger for children who participated in the NELI programme than for children who did not. As the Dutch educational context is comparable to the British context, one might expect that the NELI programme will also have a positive effect on the oral language competence of Dutch children. However, the effect of the NELI programme has not yet been investigated within the Dutch context. In the present study, the effect of the NELI programme is therefore investigated in Dutch early childhood classrooms. Based on previous research it is expected that the NELI programme will positively affect children's oral language competence (hypothesis 1). In addition, it is expected that this effect is stronger with high levels of interaction quality during tutoring (hypothesis 2) and with high levels of oral language competence prior to the start of the intervention (hypothesis 3).

Who can participate?
Dutch children with the lowest scores on a language screening test (i.e. the Language Screen App), enrolled in Year 1 or 2 of primary school and aged 4 to 7 years old

What does the study involve?
The current study is a randomized controlled trial with pre- and post-measurements. Participating classes are randomly assigned to the intervention- or control condition.

Randomisation is performed at the class level (within schools) and the study is conducted in two phases. During phase 1 (Sept – Jan) children in condition 1 participate in the NELI programme (intervention condition) whereas children in condition 2 follow the usual educational programme (control condition). During phase 2 (Feb – June), children in condition 2 participate in the NELI programme whereas children in condition 3 follow the usual programme (control condition). Children's oral language competence is measured prior to (t1) and after (t2) the intervention. Multiple standardized and validated language tests will be individually administrated to measure children's oral language competence. The total duration of the test administration is approximately 20 minutes per time.

Participants and programme
In each participating class, six children will be selected for participation in the study. Children who are assigned to the intervention condition will participate in the NELI programme, which is directed at improving children's oral language competence. For 20 weeks, children will participate in daily tutoring: twice per week in individual tutoring (15 minutes per session) and three times a week in tutoring in small groups (30 minutes per session). The tutor sessions follow a fixed structure and in each session, children are taught new words within a certain theme (e.g. the grocery store). The sessions are implemented during school times and guided by a tutor (trained teaching assistant). Prior to the start of the intervention, tutors participate in intensive training.

What are the possible benefits and risks of participating?
Children who participate in the study and are assigned to the intervention condition benefit from the study because they will participate in tutoring and are thereby provided with extra opportunities to practice their language skills in a safe environment (one-on-one with their tutor and in small groups). Tutoring is known to be highly effective in promoting children's language development. Improved language skills enable children, in turn, to better participate in classroom activities and engage successfully with peers. Children who are assigned to the control group will participate in the NELI programme after the study is finished. Consequently, they can also benefit from tutoring.

Receiving extra tutoring outside the classroom can have a stigmatizing effect and children might experience the extra tutoring as something they are required to participate in (obligatory). However, receiving extra support outside the classroom is very common in Dutch primary schools, so the risk of stigma is expected to be small. In addition, the tutoring is specifically aimed at children aged 4 to 6 and is very child-friendly. Hence, it is expected that children will not experience tutoring as something they have to do, but will actually enjoy it and have fun together.

Where is the study run from?
Vrije Universiteit Amsterdam (the Netherlands)

When is the study starting and how long is it expected to run for?
September 2022 to July 2024

Who is funding the study?
The Dutch national funding agency for educational research (NRO; WILT3770) (the Netherlands)

Who is the main contact?
Dr Femke van der Wilt, f.m.vander.wilt@vu.nl (the Netherlands)

Contact information

Type(s)
Principal investigator

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Additional identifiers

Protocol serial number
WILT3770

Study information

Scientific Title
The effect of the Nuffield Early Language Intervention programme on young children's oral language competence

Study objectives
In the present research, the effectiveness of the Nuffield Early Language Intervention (NELI) programme in a Dutch educational context will be assessed using a randomized controlled trial. NELI is a 20-week tutoring programme for young children aged 4-6 who are enrolled in the first two years of primary education. NELI was originally developed by researchers at Oxford University and its effectivity was shown in various large-scale trials. NELI was translated into Dutch and adapted to the Dutch educational context. The present research aims to investigate the effect of NELI on the oral language skills of young children in the Netherlands. Based on prior research on the effectiveness of NELI in Great Britain, the study team hypothesize that NELI will have a positive effect on the oral language skills of children. Moreover, is it expected that the effect will be stronger when the interaction between tutor and child is of high quality (compared to low) and when children have a high level of language ability at premeasurement (compared to low).

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 16/12/2022, Ethics committee of Vrije University Amsterdam (Faculty of Behavioral and Movement Sciences) (De Boelelaan 1085, Amsterdam, 1081 HV , Netherlands; None available; vcwe.fgb@vu.nl), ref: VCWE-2022-150R1

Primary study design
Interventional

Study design
Cluster randomized controlled trial with pre and post-measurements

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Language disorder

Interventions
This research is a study using a cluster randomized controlled trial design, which includes pre- and post-measurements. The main focus is to evaluate the effectiveness of The Nuffield Early Language Intervention (NELI) program, a 20-week intervention aimed at improving language competence in young children.

Approximately 40 primary schools in the Netherlands will be involved, with randomization occurring at the school level. Most participating schools will have three classes in the intervention group. Within each class, six children with the lowest language scores, identified using the Language Screen App, will be selected for participation in the study. Children in the intervention group will receive the NELI program, while children in the control group will continue with the regular school curriculum and not participate in NELI during the study. However, they will have the opportunity to participate in NELI in the following year after the study concludes.

The research will be conducted in two phases. Each class will be randomly assigned to one of three conditions. During phase 1, children in condition 1 will receive the 20-week NELI program (intervention condition), while children in condition 2 will follow the regular educational program (control condition). In phase 2, children in condition 2 will receive the NELI program (intervention condition), and children in condition 3 will follow the regular educational program (control condition). Trained research assistants will assess the children's oral language development before and after the intervention period. For children in condition 2, the post-measurement of phase 1 will also serve as the pre-measurement for phase 2. In cases where schools have 2 or 4 classes in the intervention, classes will be randomly assigned to either the intervention or control group. When 5 classes are involved, classes will be randomly clustered into groups of three and two.

The data analysis will involve multilevel modeling using the lavaan package in R to account for the hierarchical structure of the data. The primary outcome will be a language latent variable derived from individually administered language tests, including subtests such as CELF recalling sentences, CELF expressive vocabulary, Renfrew Action Picture test (information and grammar), and the MAIN test (narrative competence). The same language latent variable will be created for both pretest and posttest scores, with the pretest variable used as a covariate and the posttest variable as the outcome measure. The secondary outcome will be another language latent variable defined by loadings from the Language Screen App subtests.

Intervention Type
Behavioural

Primary outcome(s)
A language latent variable defined by loadings from the individually administered language tests: Clinical Evaluation of Language Fundamentals 5 (CELF) recalling sentences subtest, CELF expressive vocabulary subtest, Renfrew Action Picture test (information and grammar) and the MAIN test (narrative competence). The same language latent variable will be created for pretest and posttest scores. The pretest latent variable will be the covariate, and the posttest latent variable the outcome measure.

Key secondary outcome(s)

A language latent variable defined by loadings from the Language Screen App (expressive vocabulary, receptive vocabulary, sentence repetition, and listening comprehension) and videos of the tutoring sessions to assess the quality of the interaction between tutor and child at pretest and posttest.

Completion date
19/07/2024

Eligibility

Key inclusion criteria
1. Children enrolled in Year 1 or 2 of primary school during the intervention
2. Children with language weaknesses in comparison to their peers

Participant type(s)
Learner/student

Healthy volunteers allowed
No

Age group
Child

Lower age limit
4 Years

Upper age limit
7 Years

Sex
All

Key exclusion criteria
1. Severe visual impairment
2. Severe auditory impairment
3. Severe behavioral problems which prevent them from participating in small group activities
4. Speaking and understanding Dutch at the time of selection

Date of first enrolment
01/02/2023

Date of final enrolment
08/06/2023

Locations

Countries of recruitment
Netherlands

Study participating centre
Vrije Universiteit Amsterdam
Netherlands
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Sponsor information

Organisation
Vrije Universiteit Amsterdam

ROR
https://ror.org/008xxew50

Funder(s)

Funder type
Government

Funder Name
Nationaal Regieorgaan Onderwijsonderzoek

Alternative Name(s)
Netherlands Initiative for Educational Research, NRO

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
Netherlands

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study are/will be available upon request from Dr Femke van der Wilt, f.m.vander.wilt@vu.nl (the Netherlands).

Personal data will be stored as long as necessary for the conduction of the study and will be deleted as soon as possible. At the end of the study, the PI ensures that data that can identify individual participants are anonymized and/or destroyed. Following the guidelines of the Universities of the Netherlands, anonymised data will be stored for ten years (minimum) due to demands concerning controllability. Furthermore, the guidelines concerning archiving of the Faculty of Behavioural and Movement Sciences of the Vrije Universiteit Amsterdam will be followed, indicating that the data which is reported in scientific papers will be archived at DataVerse and Darkstor servers as soon as the paper is published.

IPD sharing plan summary

Available on request