Protocol for Evaluation of Greenford High School's speaking and listening intervention

Note: This protocol excludes aspects of the evaluation that are the sole responsibility of Greenford High School and are not requirements of the EEF or NFER.

Intervention

The intervention will consist of sequential delivery of Vocabulary Enrichment Intervention Programme (VE) and Narrative Intervention Programme (NIP) created by Victoria Joffe, an academic at City University London, using funding from the Nuffield Foundation. The intervention will be delivered by teaching assistants.

VE has two aims: to teach children new words, and to encourage them to use these words in speaking and writing. It seeks to achieve these aims by cultivating children's enthusiasm for words, and teaching them specific strategies for learning and recalling new terms. Children are taught to recognise the structure of words (prefixes, suffixes, roots), are given a range of cueing techniques to aid retrieval, and are shown how to understand and learn new terms independently, so they can continue to learn after the intervention has finished. A trial of a similar intervention in the US indicated an effect size of ~0.5 standard deviations on reading achievement. The trial participants seem to have been non-native speakers and the study was not perfect (only 17 classrooms were randomised and the experimental groups experienced differential attrition) but it is encouraging nonetheless.

NIP is a practical language programme that focuses on enhancing the understanding and expression of stories through identifying different types of narratives, facilitating storytelling and developing speaking and listening skills.

http://www.nuffieldfoundation.org/enhancing-language-and-communication-secondary-schools-elciss

Research Plan

Research Questions

The primary research question is: what is the impact of the speaking and listening intervention on reading ability?

The secondary research question is: are any improvements in attainment moderated by any of the following:

- prior attainment in reading
- gender
- whether a pupil receives the pupil premium
- what school they attend.

Such interactions may not be causal.

Design

The project will be structured as a randomised controlled trial, with assignment carried out at the level of the individual pupil.

Greenford High plus two further secondary schools in Ealing will take part in the intervention. Across the three schools, at least 240 pupils will be selected to participate based on information from literacy assessments conducted by each school in July 2013. Two teaching assistants in each school will deliver the intervention. When not delivering the intervention, they will work in another year of the school to avoid contamination.

The trial will include two experimental groups: the first will receive the speaking and listening intervention; the second will act as a waitlist control group (they will ultimately receive the intervention in Year 8). Children in the treatment group will begin the programme in Sept 2013; the autumn term of Year 7. All children will be tested directly before and after intervention for reading ability. After baseline testing, pupils will be randomised into the two groups in each school. Baseline testing will occur in September 2013 with follow-up in April 2014.

The trial will be designed, conducted and reported to CONSORT standards (http://www.consort-statement.org/consort-statement/).

Inclusion Criteria

Year 7 pupils that were below National Curriculum level 4 in English and/or below level 4 in reading at the end of Key Stage 2, or pupils that are deemed to be 'vulnerable' Level 4 English achievers, as indicated by either SATs results or a test administered in July 2013[1].

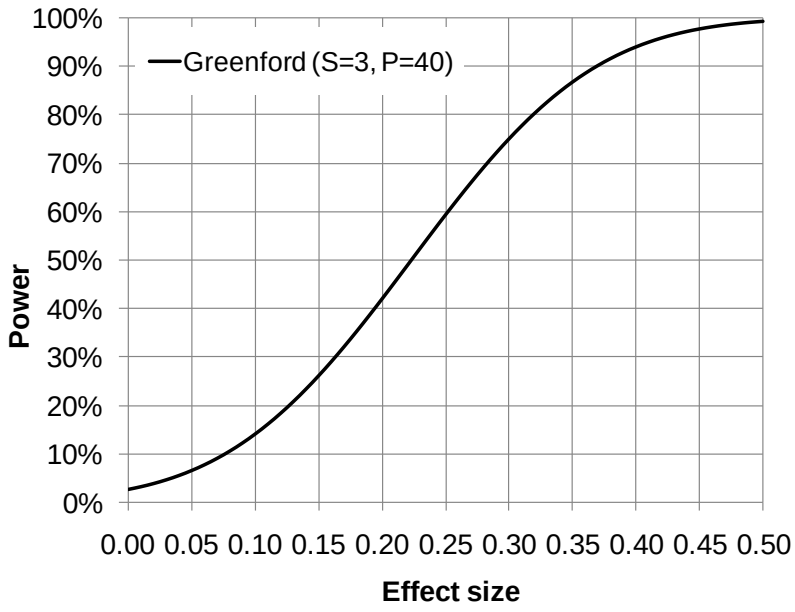
Randomisation methods

Randomisation will be carried out by a statistician at NFER. Simple randomisation of pupils into two experimental groups of the same size will be carried out within each school.

Outcome Measures

The digital version of the New Group Reading Test (NGRT; GL Assessment) will be used to measure reading ability. The NGRT has two subscales – ability and comprehension, which can be combined into a composite reading score. The composite score will be used as the primary outcome. The two subscales will be used as secondary outcomes.

Sample size calculations



S = Number of participating schools
P = Number of participating pupils per intervention group per school

Randomisation will be conducted at a pupil level, and furthermore we will be controlling for variation in baseline scores. Intra-class correlation (rho) is therefore likely to have a minimal impact

[1] This test will determine reading age; not National Curriculum level. If a child is selected on the basis of this test alone, confirmation of the child's level and whether or not they should be included in the trial will be available at baseline testing stage.

on the effective sample size; we have conservatively assumed a value of rho=0.02 for the purposes of our calculations. The chart illustrates that the sample sizes will be sufficient to detect effect sizes at least of the order 0.3.

Analysis

The primary outcome will be reading ability as assessed by the digital New Group Reading Test. Sub-group analysis on the primary outcome will be carried out on the following groups only:

- prior attainment
- gender
- whether a pupil receives the pupil premium
- what school they attend.

The secondary outcomes will be the two NGRT subscales: reading ability and comprehension.

We will undertake basic descriptive analysis of baseline test data to provide a check that the randomisation process has been carried out successfully. Whilst we would not expect treatment and control groups to exhibit identical characteristics, we will carry out statistical tests to verify that any small differences that do arise are consistent with what one might expect assuming an unbiased randomisation.

We will then undertake our main analysis combining baseline and follow-up data. The definitive analysis will be 'intention to treat', reflecting the reality of how interventions are delivered in practice and avoiding attrition bias. We will use multi-level models to enable us to combine results across schools whilst accounting for clustering, and will include baseline data as a covariate in each of our models. We will test hypotheses relating the impact of the interventions on pupils of differing abilities through the inclusion of interaction terms in the modelling.

The main analysis will be followed by an 'on-treatment' analysis where data from the teacher logs will be used to determine the extent of each pupil's involvement with the interventions. We will also incorporate school-level variables into the analysis based on the questions addressing the extent to which teachers feel they maintained fidelity to the interventions, and any perceived contamination of the control groups of pupils. This analysis would enable us to estimate a 'pure intervention effect' (net of any fidelity issues, contamination, or non-completion). However, note that this analysis may be biased due to self-selection to differing levels of exposure[2].

[2] For example pupil motivation may be positively related to both levels of exposure to the intervention (through better attendance) and the amount of progress made between baseline and follow-up testing.

Process evaluation

At the outset of the project, the process evaluation researchers will discuss with the designer of each intervention the design of instruments.

Researchers will obtain and analyse the training and guidance documents and attend both the VE and NIP training sessions. Researchers will also observe two intervention sessions; one VE and one NIP. The evidence from these document analyses and observations will inform the schedule for the later interviews and will directly contribute to the scalability evaluation.

The 'teacher log', which is proposed as a fidelity check for the interventions, will also contribute to the process evaluation. The record of whether and how the programme activities took place will give information on their practicability and manageability. The questions will provide data on the confidence and engagement of the TAs delivering the intervention. These analyses will provide an indication of how accessible and usable the new methods are for schools.

At the end of each intervention, researchers will gather more in-depth information on these matters by means of telephone interviews with all six teaching assistants. The telephone interviews will follow a semi-structured interview schedule, reflecting the distinctive features of each intervention. We will look to gain a deeper understanding of the perceptions of the intervention's impact and any barriers that may exist for its wider rollout. Views would also be sought into the effectiveness of the training and guidance materials and whether any improvements to these processes and documents would make a wider rollout more likely to succeed.

Our report on the findings of the process evaluation will draw on these findings and make recommendations to ensure the sustainability and replicability of successful interventions when they are scaled up.

Personnel

The project will be led by Mia Pye, assistant head, and Andrea Hetherington, Literacy leader, from Greenford High School. The impact evaluation will be led by Dr Ben Styles at NFER. The process evaluation will be led by Becky Clarkson at NFER. Camilla Nevill will have overview of the evaluation at EEF and Emily Yeomans will oversee the grant.

Roles and responsibilities

Each person will carry out their duties with the assistance of teams at their respective institutions:

Mia Pye – Recruitment and retention of schools, training and delivery of intervention, supply of list of eligible pupils for randomisation, administration of tests (tests should not be administered by the TAs who delivered the intervention) , recruitment of TAs.

Ben Styles – trial design, randomisation and analysis.

Becky Clarkson – process evaluation telephone interviews and visits.

Data protection statement

NFER's data protection policy is available at:

http://www.nfer.ac.uk/nfer/about-nfer/code-of-practice/nfercop.pdf

Timeline

Jan-Feb 2013: meeting with partner organisations, write and register protocol

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June 2013: training sessions

July 2013: schools identify participating pupils

w/b 9th Sept 2013: baseline testing

Sept 2013 –March 2014: Implementation of intervention programmes

w/b 31st March (or after Easter) 2014: Post-testing and interviews

June 2014: Analysis and interim results to EEF

July 2014: Report writing

Sept 2014: Final report to EEF

Risks

Risk	Assessment	Countermeasures and contingencies
School, TA or pupil attrition	**Likelihood:** moderate **Impact:** moderate	Clear information / initial meeting with schools explaining the principles of the trial and expectations. Both 'intention to treat' and 'on-treatment' analysis will be used. Attrition will be monitored and reported according to CONSORT guidelines.
Interventions are not implemented well	**Likelihood:** low **Impact:** moderate	Clear information / initial meeting with schools explaining the principles of the trial and expectations. Both 'intention to treat' and 'on-treatment' analysis will be used. Process evaluation will monitor this.
Control pupils exposed to elements of the interventions	**Likelihood:** moderate **Impact:** moderate	Clear information / initial meeting with schools explaining the principles of the trial and expectations. Both 'intention to treat' and 'on-treatment' analysis will be used.
Delays in training of TAs and commencing interventions	**Likelihood:** moderate **Impact:** low	Agree a clear timetable with project teams up front Revise timetable for pre and post testing periods
Failure in recruiting pupils/schools	**Likelihood:** low **Impact:** high	Timescale could be revised
Poor completion of logs by TAs	**Likelihood:** moderate **Impact:** moderate	Set clear expectations at the start of the study what is required from participating TAs/schools Clear, simple design, and pre-population of logs with pupil names ensure log is straightforward to complete.
Researchers lost to project due to sickness or absence	**Likelihood:** moderate **Impact:** low	NFER has a large research department with numerous researchers experienced in evaluation who could be redeployed. Senior staff can stand in if necessary.
Project teams do not follow correct trial protocols	**Likelihood:** moderate **Impact:** high	Meetings with project teams at start of project. Provision of clear guidance describing protocols for distribution to all schools.