Protocol for Evaluation of Perry Beeches one-to-one coaching

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

Intervention

Perry Beeches Academy (PB1) have recently piloted a one-to-one coaching initiative in their school and found it to be successful. This initiative was based on work observed in charter schools in Boston, US. The system uses recent graduates employed by the school. Participants receive five sessions each fortnight.

The intervention will consist of delivery of one-to-one coaching in literacy.

Research Plan

Research Questions

The primary research question is: what is the impact of the one-to-one coaching intervention on attainment in reading and writing?

The secondary research question is: are improvements in attainment moderated by having English as an additional language (EAL) or ethnicity? 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.

PB1 plus three further secondary schools will take part in the intervention: Perry Beeches 2 (The Free School), Hove Park in Brighton, and City of Leeds School. A total of 384 students across all the schools have been selected to participate based on Key Stage 2 national curriculum test results in literacy.

The trial will include two experimental groups: the first will receive the one-to-one coaching intervention for a full academic year 2013-14; the second will act as a waitlist control, receiving one-to-one coaching in 2014-15. Children in group 1 will begin the programme in Sept 2013; the autumn term of Year 7. Pre-testing will occur before pupils are randomised to avoid knowledge of the intervention affecting the pre-test results. After pre-testing, pupils will be randomised into the two groups within each school.
Baseline testing will occur in September 2013 with follow-up in July 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 4c in English and/or below level 4c in reading or writing at the end of Key Stage 2.

**Randomisation methods**

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

**Outcome Measures**

The paper Short Form version of the Progress in English Test (PiE; GL Assessment) will be used to measure reading and writing ability at baseline. The paper Long Form version of PiE will be used to measure reading and writing ability at follow-up. This latter version also contains open response comprehension questions and writing tasks.

**Sample size calculations**

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
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 and writing ability as assessed by the Long Form of PiE. Sub-group analysis on the primary outcome will be carried out on the following groups only: EAL and ethnicity.

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 tutor logs will be used to determine the extent of each pupil’s involvement with the interventions. We will incorporate into the analysis a measure based on the number of sessions delivered, 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\(^1\).

**Process evaluation**

At the outset of the project, the process evaluation researchers will discuss the design of instruments with PB1.

NFER will obtain and analyse the training and guidance documents. Researchers will undertake an observation visit to each school during the training – this will be a one day observation (x4). Session

\(^1\) 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.
observations and interviews with the graduate tutors will also be carried out in the Spring Term – one per school, lasting one day – maximum two. 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. The evidence from these document analyses, observations and interviews will directly contribute to the scalability evaluation.

The ‘tutor 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 tutors delivering the intervention. These analyses will provide an indication of how accessible and usable the new methods are for schools.

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 Russell Bond, deputy head PB1, and Liam Nolan, exec head PB1 and 2. 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:

Russell Bond and Liam Nolan – Recruitment and retention of schools, recruitment of tutors, training and delivery of intervention, supply of list of eligible pupils for randomisation, administration of tests (graduate tutors shall not be involved in test administration).

Ben Styles – trial design, randomisation and analysis.

Becky Clarkson – process evaluation observations and interviews.

**Data protection statement**

NFER’s data protection policy is available at:

**Timeline**

**Jan-Feb 2013**
- Meeting with partner organisations, write and register protocol

**March 2013**
- Schools know which pupils they will get. Schools begin to identify eligible pupils.

**May 2013:**
- TA can be used to further identify eligible pupils
- RB and LN to collate info and send to NFER

**July 2013**
- KS2 results to further identify ... (no-one above a 4c to be included)
- RB and LN to collate info and send to NFER
- NFER to advise / discuss with schools re eligible pupils

**July / August 2013**
- Training during summer holiday
- 4 observations – 1 in each school. 1 day per obs

**September 2013**
- baseline testing of all the children put forward for the intervention (digital so results available immediately)
- randomisation into two groups
- intervention commences

**Feb/March 2014**
- 4 intervention observations – 1 in each school; likely 1 day per obs

**July 2014**
- Post-testing

**Aug 2014**
- Marking

**Sept 2014**
- Analysis

**Oct 2014**
- Reporting

**Nov 2014**
- Final report to EEF
### Risks

<table>
<thead>
<tr>
<th>Risk</th>
<th>Likelihood</th>
<th>Impact</th>
<th>Countermeasures and contingencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>School, tutor or pupil attrition</td>
<td>moderate</td>
<td>moderate</td>
<td>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.</td>
</tr>
<tr>
<td>Interventions are not implemented well</td>
<td>low</td>
<td>moderate</td>
<td>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.</td>
</tr>
<tr>
<td>Control pupils exposed to elements of the interventions</td>
<td>moderate</td>
<td>moderate</td>
<td>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.</td>
</tr>
<tr>
<td>Delays in training of tutors and commencing interventions</td>
<td>moderate</td>
<td>low</td>
<td>Agree a clear timetable with project teams up front&lt;br&gt;Revise timetable for pre and post testing periods</td>
</tr>
<tr>
<td>Failure in recruiting pupils/schools</td>
<td>low</td>
<td>high</td>
<td>Timescale could be revised</td>
</tr>
<tr>
<td>Poor completion of logs by tutors</td>
<td>moderate</td>
<td>moderate</td>
<td>Set clear expectations at the start of the study what is required from participating TAs/schools&lt;br&gt;Clear, simple design, and pre-population of logs with pupil names ensure log is straightforward to complete.</td>
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<tr>
<td>Researchers lost to project due to sickness or absence</td>
<td>moderate</td>
<td>low</td>
<td>NFER has a large research department with numerous researchers experienced in evaluation who could be redeployed.&lt;br&gt;Senior staff can stand in if necessary.</td>
</tr>
<tr>
<td>Project teams do not follow correct trial protocols</td>
<td>moderate</td>
<td>high</td>
<td>Meetings with project teams at start of project.&lt;br&gt;Provision of clear guidance describing protocols for distribution to all schools.</td>
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