

[National Tutoring Programme]
Prioritising Tutoring Relationships to Improve Pupil Attendance
Nimble Trials Protocol and Statistical Analysis Plan

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PROJECT TITLE	Prioritising Tutoring Relationships to Improve Pupil Attendance
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TRIAL DESIGN	A 2-arm clustered RCT with randomisation at tutor level
PUPIL AGE RANGE AND KEY STAGE	10-16 / KS2-4
NUMBER OF TUTORS	~1.5k
NUMBER OF PUPILS	~2.7k
PRIMARY OUTCOME MEASURE AND SOURCE	Average pupil attendance rate in tutoring sessions
SECONDARY OUTCOME MEASURE AND SOURCE	N/A

Protocol version history

VERSION	DATE	REASON FOR REVISION
1.1 [<i>latest</i>]		
1.0 [<i>original</i>]	10 Feb 2021	N/A

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1. Study rationale and background

Research purpose: To test whether a light-touch intervention that seeks to improve the relational self-efficacy of tutors will increase their pupils' attendance at tutoring sessions.

There is some evidence to suggest that a tutor's level of relational self-efficacy affects the teacher-pupil relationship. 'Relational self-efficacy' refers to a tutor's belief about their abilities to form, maintain and repair relationships with students.¹

- Research in the US has suggested that teachers with higher relational self-efficacy also have more positive relationships with students (as assessed by teachers and students).²
- There is preliminary evidence that teachers' relational self-efficacy can be boosted. In two doctoral studies (one in the field and one online), teachers' levels of relational self-efficacy were raised after completing the three activities below:
 - **Self-mastery:** Teachers reflected on a time they connected with a student.
 - **Vicarious experience:** Teachers read short testimonials from other teachers on building positive relationships.
 - **Saying is believing:** Teachers created their own strategy for strengthening relationships with students. In the field study, teachers were reminded of their strategy 4-5 weeks into the trial. The author believes this element to be most important for the intervention's overall efficacy.

Impact evaluation: A 2-arm clustered randomised controlled trial, randomised at the **tutor** level.

- Implementation and Process Evaluation:
 - Compliance and reach data from tutoring partners, to understand what the uptake of the intervention is
 - Number of completed and partially completed tutor survey responses
 - Usage metrics from the intervention website, to get insights on how the materials were used
 - Average time to complete online activity (tutor)
 - Case studies based on interviews with partners and tutors
 - An interview with a tutoring provider staff member
 - Four interviews with tutors

2. Intervention and implementation

See **Table 1** for a description of the intervention being evaluated, using the TIDier framework.

Tutors in the control condition will follow their business-as-usual approach to tutoring. Tutors from all Tutoring Providers complete an initial training in order to complete sessions. This training covers important topics such as child safeguarding and lesson planning but may also discuss the importance of establishing positive relationships with pupils.

¹ Robinson, C.D.(2020). I Believe I Can Connect: Exploring Teachers' Relational Self-Efficacy and Teacher-Student Relationships. Doctoral dissertation, Harvard University, Graduate School of Arts & Sciences.

² ibid.

The intervention will be delivered in five stages explained as follows.

1. BIT completes randomisation in batches and sends tutoring partners the list of tutors (anonymised to BIT) to which to send the materials (T) and to which they should not send anything (C). (See Section 3.3 Randomisation for more details).
2. Tutoring providers share the intervention by email (and 2 x reminders to do it, both in the week after sending the intervention) with tutors in the treatment group.
3. Tutors decide whether to use the intervention materials, i.e. to complete online activity. They are not required, but are strongly encouraged, to do so. Completion data will be collected as part of the IPE.
4. Tutors that decide to use the intervention materials are sent their answers to Part 3 by email (the relationship-building strategy they plan to try out with their pupils) immediately after completing the intervention.
5. Tutors that decide to use the intervention materials are also sent a follow-up email 2 weeks later that: (1) reminds them of the relationship-building strategy they developed in the initial intervention, and (b) reminds them of the relationship-building strategy from another tutor they indicated they would be most likely to try out. Tutors will also be invited to complete a short survey to indicate whether they have tried out their strategy yet. If they have not, they will have the option to specify the date of their next tutoring session and receive an email reminder the day before.

Table 1. Intervention description

INTERVENTION NAME	Prioritising Tutoring Relationships to Improve Pupil Attendance
WHY (THEORY/RATIONALE)	Relational self-efficacy refers to a tutors' belief about their abilities to form, maintain and repair relationships with students. Recent doctoral studies in the US have suggested that (1) teachers with higher relational self-efficacy also have more positive relationships with students, and (2) teachers' relational self-efficacy can be developed through interventions ³ .
WHO (RECIPIENTS)	Only tutors will participate in the intervention.
WHAT (MATERIALS)	<p>A web-based activity that seeks to improve tutors' relational self-efficacy, accompanied by:</p> <ul style="list-style-type: none"> ● An email immediately after completing the activity outlining the personalised relationship-building strategy the tutor has developed ● A follow-up email 2 weeks later reminding the tutor of (a) their personalised relationship-building strategy, and (b) the relationship-building strategy from another tutor that they indicated they would be most likely to use. <p>See Appendix A for an illustrative design of intervention materials.</p>

³ Robinson, C.D.(2020). I Believe I Can Connect: Exploring Teachers' Relational Self-Efficacy and Teacher-Student Relationships. Doctoral dissertation, Harvard University, Graduate School of Arts & Sciences.

WHAT (PROCEDURES)	In the short (20 minute) online activity, tutors will work through the following three parts: <ol style="list-style-type: none"> 1. Reflecting on a moment they connected with someone else 2. Learning about common relationship-building strategies used by other tutors 3. Developing their own, personal relationship-building strategy
WHO (PROVIDER)	BIT will provide the intervention materials to tutoring providers, who will share them with tutors.
HOW (DELIVERY MODE)	For the tutoring partners in this trial, the intervention will be communicated to tutors through their existing communication channels.
WHERE (LOCATION)	The intervention will be completed independently by tutors at a time and place of their choosing.
WHEN & HOW MUCH (DOSAGE)	The intervention will be delivered once, at the start of the trial period, ideally before tutors start tutoring. Tutors will then be provided with a reminder of their strategy 2 weeks after completing the activity.
TAILORING (ADAPTATION)	All tutors will complete the same initial activity. Given the nature of the intervention, the follow-up emails will be personalised to each tutor based on their answers to the initial intervention.

3. Impact evaluation

3.1 Research questions

- **RQ1:** The primary research question is to investigate whether inviting tutors to complete an online activity that seeks to improve relational self-efficacy **increases their pupils' attendance** at tutoring sessions.
- **RQ2:** The secondary research question is to investigate whether inviting tutors to complete an online activity that seeks to improve relational self-efficacy **increases their pupils' attendance** at tutoring sessions among **pupils who belong to the Premium Pupil (PP) group**.

3.2 Design, participants and outcome measures

- Describe the study participants and set out any inclusion and/or exclusion criteria.⁴ This should define which pupils, year groups, and schools take part in the intervention.
- Present the number of planned treatment units included in the study and how they will be recruited.
- Please add additional rows if you have more than one secondary outcome.
- Clearly define each outcome and how it will be measured, including source datasets.

⁴ Please specify whether a pre-test availability and/or score will be used as an eligibility criterion.

- If utilising survey measures, clarify the number of items / sub-scales, type of variable, and range. Psychometric properties should be detailed in table or in text below.⁵
- When using NPD data, clearly specify the variables to be used.
- For trials with more than one follow-up point (e.g., delayed post-test), specify which time point constitutes the primary outcome.

Table 2: Trial design and outcomes

Trial design, including number of arms		Two-arm, cluster randomised trial
Participants	inclusion criteria	Tutors and pupils at participating tutoring providers
	exclusion criteria	Pupils that have started their first tutoring session before or on Feb 1st, 2021
	target number	1.4k tutors; 2.7k pupils
Unit of randomisation		Tutor
Stratification variables (if applicable)		Stratify by tutoring provider (a. Action Tutoring, b. CoachBright, c. The Access Project) for each batch of data
Primary outcome	variable	Pupil attendance rate for tutoring sessions, expressed as a proportion of sessions scheduled.
	measure (instrument, scale, source)	The proportion (expressed as a percentage) of tutoring sessions attended by each pupil out of those purchased by their school. This information is provided to NFER ⁶ by the individual tutoring providers. ⁷
	direct measure or proxy?	Direct measure
	time of collection	End of trial (Friday 23 rd July)

⁵ If instrument is not publicly available, please provide in appendix. If instrument is commercial and cannot be published, please specify.

⁶ We are currently finalising our relationship with NFER (the main evaluator of the NTP) for accessing this data. The alternative data provider may be the tutoring partners themselves, providing us the same data they provide to NFER.

⁷ BIT will liaise with the tutoring providers involved in this trial to ensure they understand the importance of accurate data collection. In addition, to the best of our understanding, tutoring providers must attend seminars held by NFER in which they are instructed on data collection. We believe that these strategies minimise the risk in accurate data collection (for example, tutoring partners rectifying the number of purchased sessions if a student drops out).

3.3 Randomisation

- BIT will conduct the randomisation. The tutoring partners will send BIT anonymised IDs of tutors in batches (every 2 weeks until April 15th).⁸ The randomisation code will be QAed by another researcher.
- For each batch, BIT will create new unique IDs for tutors (to avoid mixing up with Tutor IDs provided by NFER) and then send the outcome of the randomisation allocation to the tutoring partners.
- Tutoring partners will be responsible for sending the materials to the tutors.

- For each batch, researchers at BIT will use statistical software (R) to first stratify tutors at tutoring partner level, and then randomise at tutor level (i.e. all pupils paired with the same tutor will be allocated to the same condition, treatment or control). Each condition will have a roughly equal number of tutors ($\pm 1\%$). Batches will implicitly constitute another layer of strata. In terms of process being used, the researcher will:
 - For each batch from each tutoring partner: load the data into R
 - Set a new seed
 - Generate a random number from a uniform distribution (0-1). In this way, each tutor will be assigned a random number from 0 to 1.
 - Sort the tutors according to this random number from low to high
 - Assign the first N/2 tutors in the list to the treatment group and the remaining N/2 to the control group.
 - Whenever a batch contains an odd number of participants, we will allocate the Nth participant to the arm T/C that has fewest people in it so far (starting from the tutoring providers as ranked in alphabetical order Action Tutoring - Coach Bright - The Access Project). If that's a tie, we will generate a second random number from a uniform distribution (0-1) and allocate the participant to T if $\text{rand.num} < 0.5$, C otherwise

- Analysts at BIT will archive all randomisation-related data and code files as well as drafting documentation of the whole process. The primary analyst will not be blind to allocation. However, as part of the quality assurance process, another analyst will replicate the analysis while blinded to allocation.⁹ Results will also be quality assured by a senior member of the research team.

3.4 Sample size calculations

We conducted power calculations to estimate the **minimum detectable effect size** given the estimated sample size, desired significance level, and statistical power, see **Table 3b**. Our calculations indicate that this trial is sufficiently powered to detect the minimum effect size we expect to achieve (5 percentage points), among all eligible pupils as well as among pupils in the PP group, see **Table 3c**.

⁸ Tutoring Partners will send BIT the anonymised lists of tutors as they hire more tutors, not as tutors take on more students. Basically, once a tutor is enlisted with a provider, they are treated or not treated, and that remains constant across all the classes/groups they'll teach throughout the term. Appendix D provides more info about this process.

⁹ Our proposed solution is that the main researcher will

1- clean the data, compile the final dataset, run the analysis

2- save a v2 of the dataset in which they have replaced Treatment=0/1 with a non-revealing flag like Group=A/B

3- pass these data to a second researcher who will analyse the data independently following the same trial protocol, while being blinded to the original allocation.

- Given the evidence base for our intervention materials, the light-touch design of the intervention, and the baseline attendance rate (provided by the tutoring partners), we assessed that a 5 percentage point increase in pupil attendance rate would constitute a substantive effect size and confirmed with tutoring providers this would be considered a meaningful effect size.
- In January 2021, tutoring partners provided their latest estimates for the number of tutors and pupils they plan to reach this academic year. Specifically, we asked tutoring partners for an estimate of the number of pupils that they expected to have their first tutoring session on or after the 1st February 2021. The figures, outlined in the table below, provide us with our estimated sample size.

Table 3a: Estimates of Tutor-Pupil Ratio

Tutoring Partner Name	Number of tutors	Number of pupils	Tutor-pupil ratio
Action Tutoring	799	1588	1:2
The Access Project	178	178	1:1
CoachBright	450	930	1:2 / 1:3
TOTAL	1427	2696	1:2

- The ICC range (0.2~0.7)¹⁰ was not estimated by a model, but from observations from trials in similar contexts¹¹. Based on the literature, 0.2 is the value we deem more likely. Nevertheless, we provide power calculations for a wide range of values, to show that the trial is likely to be powered also in more extreme circumstances.
- We were informed by EEF that 47% of our sample is expected to belong to the premium pupil (PP) group. The percentage of PP pupils for each tutoring partner is presented in Appendix C.

Table 3b: Preliminary data and assumptions for MDES Calculation

	OVERALL	PP subgroup
Assumed control group attendance rate ¹²	74% (SD = 28%)	
Minimum meaningful effect size	5 percentage points (Cohen's h = 0.1)	

¹⁰ In EEF's [Smart Space trial protocol](#) and another [government project](#), the inter-cluster correlation was both assumed to be 0.15 (the unit of randomisation is school). A [report that summarises EEF's recent trials](#) also shows that ICC in the education context (with attainment as the outcome) ranges from 0.07 to 0.16. We think the ICC might be higher as the unit of randomisation in this trial is class, so we assumed the starting point of ICC to be 0.2, and we think the 0.7 is high enough to simulate the extreme situation.

¹¹ In EEF's Smart Space trial protocol and another government project, the inter-cluster correlation was both assumed to be 0.15 (the unit of randomisation is school). A report that summarises EEF's recent trials also shows that ICC in the education context (with attainment as the outcome) ranges from 0.07 to 0.16. We think the ICC might be higher as the unit of randomisation in this trial is class, so we assumed the starting point of ICC to be 0.2, and we think the 0.7 is high enough to simulate the extreme situation.

¹² Derived from tutoring attendance data from prior term from tutoring providers

Cluster details	Intracluster correlations (ICCs) [level: tutor]	0.2~0.7	
	Average cluster size	Average size is around 2 (1~3 depending on partner)	
Alpha		0.05	
Power		0.8	
% of pupils in the PP group		47%	
Number of all tutors	Intervention	713	713
	Control	713	713
	Total	1,426	1,426
Number of all pupils	Intervention	1,348	1,145
	Control	1,348	1,145
	Total	2,696	2,290
Software used for calculations		RStudio1.2 & R 3.6.0 Selective R packages: data.table,dplyr, plyr, psych, xlsx, gmodels, foreign, TREX(developed by BIT)	

Table 3b: MDES estimates

		OVERALL	PP subgroup (47%)
Intracluster correlations (ICCs)	ICC = 0.2	3.3%	4.8%
	ICC = 0.3	3.4%	5.0%
	ICC = 0.5	3.7%	5.3%
	ICC = 0.7	3.9%	5.6%

4. Impact analysis¹³

Research question	Sample	Dependent Variable	Independent variable	Control variable	Analytical method	Interpretation
RQ1	All pupils with suitable tutoring start date (no sooner than Feb 1st)	Tutoring attendance (expressed as percentage)	Treatment assignment, where treatment is clustered at the tutor-level and stratified at the tutoring partnership	<u>Pupils</u> ¹⁴ : whether PP; whether SEND; year group; main subject of tutoring <u>Tutors</u> : gender; experience; <u>Stratification vars</u> : tutoring partner* batch;	OLS linear regression	The intervention affects attendance rate by X percentage points.
RQ2	as above, but restricted to pupils that belong to the PP group			Same as for RQ1		

- Analysis will be Intention to Treat (ITT), meaning outcomes will be analysed on the basis of the groups that tutors and pupils were randomly allocated to.
- The covariates used in the analysis model include the stratifiers and a few variables that could influence the outcomes substantially. This will increase the precision of our estimates. In particular, controlling for the batch (as part of the interaction batch * tutoring provider) will help controlling for differences in the outcome variable that we might expect to be introduced by different start dates throughout the year. The interaction batch*tutoring provider is effectively our strata. It will take the form of strata fixed effects (so a set of dummy 0/1 each representing
 - tutoring provider Action Tutoring, batch 1
 - tutoring provider The Access Project, batch 1
 - tutoring provider CoachBright, batch 1
 - tutoring provider Action Tutoring, batch 2

¹³ Please see the [Statistical Analysis Guidance](#).

¹⁴ NFER will obtain a set of pupil characteristics from the NPD and a set from tutoring partners. Given the timeline of the project, we are unable to access the set of variables (including pupils' gender) that NFER obtains from the NPD. Because this is an RCT, this only marginally affects power (in that gender may have explained part of the variation of the outcome) but it does not affect the internal validity of our treatment effect estimates.

- tutoring provider The Access Project, batch 2
 - tutoring provider CoachBright, batch 2
 - etc...
- Analysis will use the raw form of the outcome data (i.e. percentage, not transformed or scaled, ranging from 0 to 100). We will create the outcome variable using the following variables/formula:
attendance rate for pupil $i = 100 * (\# \text{ face-to-face sessions attended by pupil } i + \# \text{ online sessions attended by pupil } i) / (\# \text{ face-to-face sessions purchased by the school for pupil } i + \# \text{ online sessions purchased by the school for pupil } i)$
 - A good outcome will be that the attendance rate of pupils in the treatment group is more than 5 percentage points higher than those in the control group
 - This is a multi-site trial. But since its primary aim is to test the efficacy (rather than effectiveness) of the intervention, at this stage we do not seek to generalise the findings beyond the sample we've recruited, thus we'll use a fixed-effect model. (see section on Multi-site trials in the EEF Statistical Analysis Guidance for detailed rationale).

4.1 Primary outcome analysis

We evaluate the effect of the intervention on attendance using the following OLS model:

$$Y_i = \alpha + \beta_T \text{Treatment}_i + \beta_C \text{Covariates}_i + \eta \cdot \text{Stratifier}_i + \epsilon_i; \epsilon_i \sim N(0, \sigma^2)$$

- Y_i is the outcome of interest (attendance rate [percentage]) for each pupil i .
- Treatment_i is a dummy variable indicating which group participants were assigned to (0 = Control group, 1 = Treatment 1 group)
- Stratifier_i is a fixed-effects variable that refers to the tutoring partner interacted by the batch. number.
- Covariates_i is a set of all covariates of interest as described in table 4
- ϵ_i is the individual error term, clustered at the tutor level

4.2 Secondary outcome analysis¹⁵

Secondary outcome analysis will follow the same model specification used for the primary outcome except that we'll only include pupils eligible for Pupil Premium.

¹⁵ Unfortunately, a CACE analysis is unfeasible given that we will not be able to match up compliance data with outcome data due to outcome data being anonymised. This stems from the fact that BIT will collect the email addresses of tutors who complete the intervention but will be unable to match those email addresses to the anonymised IDs present in the outcome dataset received from NFER. This will prevent us from running a 2SLS analysis to recover the causal effect on compliers (CACE).

5. Implementation and process evaluation¹⁶

5.1 Research questions

1. What proportion of tutors in the treatment group started and completed the activity? (Compliance)
2. How many tutors partially completed the activity?¹⁷ (Reach)
3. How did tutors and tutoring provider staff experience the intervention? (Quality)
4. How was the intervention implemented? (Fidelity)
5. What were the barriers and facilitators to implementation and delivery? (Mechanisms)

5.2 Research methods

Table 4: IPE methods overview (adapt as necessary)

Research methods	Data collection methods	Participants/ data sources (type, number)	Data analysis methods	Research questions addressed
Qualitative	Semi-structured interview	3 x provider staff	Thematic analysis	3. Quality 4. Fidelity 5. Mechanisms
Qualitative	Semi-structured interview	12 x tutors	Thematic analysis	3. Quality 4. Fidelity 5. Mechanisms
Quantitative	Survey/Webapp data	Tutoring partners	Descriptive analysis	1. Compliance 2. Reach 3. Fidelity

Compliance definition:

- Tutoring partners invite all tutors assigned to the treatment condition to complete the online activity and do not invite any tutor assigned to the control condition.
- Tutors complete the online activity.

Fidelity definition:

Tutors follow the instructions when completing the online activity. They spend adequate time (minimum 10 minutes) completing the activity and feel engaged when doing the activity. They use the strategy they crafted during the activity or a strategy they remembered from the activity.

Quantitative Methods:

Descriptive statistics as mean and standard deviation will be presented for compliance, reach and fidelity. We will collect compliance, reach and fidelity data from the survey platform.

Qualitative Methods:

We will use a case study approach to collecting qualitative data. Case studies, which in this evaluation will involve the triangulation of multiple perspectives from multiple sources, will help

¹⁶ Please follow the principles detailed in the [Implementation and Process Evaluation Guidance \(2019\)](#).

¹⁷ This is defined as clicking through to the survey and moving to Page 2.

provide a more detailed understanding of the processes of implementation and the processes of change. We will collect data from participants from three cases, with each case consisting of four tutors and a member of staff from one of the three tutoring providers. Each case will include:

- an interview with a tutoring provider staff member
- interviews with four tutors

Provider Interviews: We will conduct a semi-structured interview with a member of staff from each tutoring provider. The interviews will be conducted using video conferencing software by one of the qualitative researchers on the project team and will last around 30 minutes. We will liaise with each provider to identify the staff member closest to intervention delivery per organisation and interviews will focus on the intervention setup, aims of the intervention and barriers and facilitators to successful delivery. Topic guides will be developed using the research questions and in collaboration with the intervention team.

Tutor Interviews: We will conduct interviews with four tutors per case, with each interview lasting 30-45 minutes. This interview will focus on the completion of the strategy activity and the embedding of strategy in practice. Four tutors will be purposefully selected per provider and we will seek diversity across 1) their years of experience and 2) their number of tutees. Tutors will be recruited using tutoring providers as gatekeepers.

5.3 Analysis

We will use quantitative methods (descriptive statistics such as mean and standard deviation) to analyse compliance, reach and fidelity among the treatment group. The statistical analysis will be carried out in the statistical software R/RStudio or Stata.

Interviews will be transcribed and along with observation notes, will be analysed in NVIVO. We will conduct a thematic analysis using Braun & Clarke's¹⁸ six-step approach, which involves coding the transcripts and identifying emerging themes. Themes will undergo a further round of classifying and will be sorted into high-level themes and sub-themes.

We will use the predetermined topics of the interview and observation guides to interrogate the data. During the analytical process a balance will be maintained between deduction (using existing knowledge and the research questions to guide the analysis) and induction (allowing concepts and ways of interpreting experience to emerge from the data). We will mitigate researcher bias by using the interrater reliability checker on NVIVO, ensuring multiple researchers are coding the transcripts in the same way. Furthermore, verbatim participant quotations and case examples will be used to provide evidence and exemplify the theme(s) discussed in the paragraph before the quotation. Quotations will be selected by the qualitative researchers who conduct the data analysis, by considering multiple factors including how well they exemplify the theme(s) discussed.

¹⁸ Virginia Braun & Victoria Clarke (2006) Using thematic analysis in psychology, *Qualitative Research in Psychology*, 3:2, 77-101, DOI: 10.1191/1478088706qp063oa

6. Risks

Table 5: Risk register

Risk	Likelihood of occurring	Magnitude of impact	Strategy to mitigate risk	Responsible party	Timeframe (if applicable)
Low activity uptake	Medium	High	Tutoring partners will strongly encourage tutors to complete the activity, in some cases linking completion of the activity to a qualification they provide to their tutors. Tutors will also receive two reminders to engage with the activity.	Implementation team	Beginning of trial
Randomisation failure ¹⁹	Low	High	<p>Ensure that tutoring partners are fully briefed on how to allocate tutors to different conditions and carry out interim balance checks (if possible) to double check.</p> <p>Randomisation results will be shared in two separate and clearly labelled spreadsheets (control/treatment).</p> <p>A member of the implementation team will have a video call with each tutoring provider to support the correct implementation of the randomisation.</p> <p>BIT will ensure that no identifiable information is seen here by the BIT team.</p> <p>Any (potential) observed small imbalance (<10%) between treatment and control will be accounted for in the analysis by including the set of regressors available in the data.</p>	Research and implementation team	One interim check
Fidelity to intervention plan	Medium	Medium	Fully brief tutoring partners and tutors how interventions should be delivered and send them reminders	Implementation team	Periodical reminder
Missing data	Low	Low	Missingness of outcome: we will assess if this happens as a function of the treatment by regressing a dummy	Research team	End of trial

¹⁹ Please assess imbalance between intervention and control groups at baseline using : (i) cross-tabulation of background characteristics (including any relevant characteristics for interventions targeted at specific participant groups) for all units as they were randomised. This cross-tabulation is likely to include both school# and pupil-level characteristics. Include a justification for the characteristics chosen; (ii) for continuous variables, report means and standard deviations. For categorical variables, report counts and percentages in each category. Any differences should be discussed in the report. Please report differences in pupil-level pre-tests as effect sizes.

			<p>outcome missing on treatment variable. If there isn't a statistically significant relationship between outcome missingness and treatment assignment, we will exclude from the analysis observations with missing outcomes. If treatment significantly affects missingness, we will use a weighting strategy as coarsened exact matching to address missingness not-at-random</p> <p>Missingness of covariates: we will assess if any covariate is missing for more than 5% of the obs. If so, we will drop the covariate from the analysis. For variables with missingness <5% of cases, we will replace the missing value with an extra category flagging the missingness (eg. for tutors' gender is missing, we will control two dummy variables, one that takes value 1 if 'female' and 0 otherwise, one taking value 1 if 'missing gender', 0 otherwise).</p>		
Risk of bias in developer-led trials	Low	Low	<p>The risk is minimised by having a second independent analyst analysing the trial under blind allocation of treatment groups</p> <p>Registration of the trial, and the completion of this document and transparency about the project all act to minimise risk of bias.</p>	Intervention development team	Beginning of trial
Inaccurate outcome data	Medium	High	<p>Attendance data is provided to NFER by the individual tutoring providers. BIT will liaise with the tutoring providers involved in this trial to ensure they understand the importance of accurate data collection. In addition, to the best of our understanding, tutoring providers must attend seminars held by NFER in which they are instructed on data collection. We believe that these strategies minimise the risk of</p>	Implementation team	Before the trial

			inaccurate data collection (for example, tutoring partners rectifying the number of scheduled sessions if a student drops out).		
Risk of spillover if a tutor is employed by multiple tutoring providers	Low	Low	<p>If possible, NFER will include a flag in their data for tutors who appear more than once in their dataset (employed by more tutoring partners).</p> <p>From initial reviews of the NTP data, NFER have identified a small minority of tutors that are working for more than one tutoring partner (1.4%). This number will likely be even smaller within our study, as this number is across all providers, and we are only working with a select few.</p>	NFER & Evaluation Team	Analysis period
Risk of small strata sizes	Low	Medium	<p>Small strata are known to be problematic for causal inference²⁰. Our internal guidance to causal estimation uses as rule of thumb that stratified randomisation should not be used if (i) the average strata size < (the number of arms * 10) (ii) there are 10+ strata containing ≤ (the number of arms * 2).</p> <p>For this trial, we would want the average size of the strata not to contain less than 20 participants, and not have 10 or more strata containing 4 or fewer participants.</p> <p>Given the patterns of inflow of tutors, we do not expect this to pose significant problems. If anything, we expect batches of smaller sizes to flow into the trial towards the end of the trial. We will actively monitor batches sizes as the data come in, and were we to reach a situation in which by proceeding with a randomisation batch the average batch size would fall below 20 or would lead to 10 strata with 4 participants or fewer we would exclude</p>	Evaluation team	During the trial

²⁰ Kang M, Ragan BG, Park JH. Issues in outcomes research: an overview of randomization techniques for clinical trials. J Athl Train. 2008;43(2):215-221. doi:10.4085/1062-6050-43.2.215

			further batches from the trial to avoid these risks to the internal validity of the trial.		
Some tutors will have already started tutoring with students who will become part of the intervention	Medium	Low	<p>Ideally, we would have computed the rate of attendance after the intervention begins. Unfortunately, because of data limitations, it is not possible for us to observe the exact date a session takes place and attendance (yes/no) to each session individually. We will only be able to observe</p> <ul style="list-style-type: none"> - the date of the first scheduled session and the date of the last scheduled session, as bought by schools for a given pupil - the attendance rate of a pupil across those scheduled classes (0-100) <p>In order to minimise this problem, we timed the launch of the intervention such that there will only be a 2-week interval between tutors' recruitment and launching. We are launching before spring break, and the overwhelming majority of pupils will start their tutoring sessions after the spring break - for this reason, we expect a small minority of students to be affected by this.</p>	Intervention development team	Before the trial

7. Timeline

- Timetable including specification of who is responsible for completing each task
- Include specific dates or date intervals (rather than, for example, school terms only).

Table 6: Timeline

Dates	Activity	Staff responsible/ leading
W/C 8th Feb	Finalising intervention materials	BIT (Project Team)
W/C 15th Feb	Randomisation allocation	BIT (Research Team)

W/C 15th Feb	Launch trial	BIT / Tutoring Partners
W/C 22nd Feb	Tutor reminders to use the intervention	BIT / Tutoring Partners
W/C 8 Mar	Follow-up emails to tutors	BIT (Project Team)
Feb - July	Monitoring trial IPE interviews and observations	BIT / Tutoring Partners
End of July	NFER receives data from tutoring partners	Tutoring Partners
Beginning of August (w/c 16th)	NFER sends BIT data, BIT starts analysing the data	NFER
w/c Sept 6th	BIT sends results to EEF	BIT

8. Ethics and registration

All BIT trials need to have been through BIT's internal research ethics process. This trial was assessed as being Low Risk.

On all dimensions barring one, the trial is determined to have minimal ethical risks. This is a light-touch intervention that is being delivered within an existing tutoring context, with minimal personal data being collected on tutors and no personal data being collected on pupils. Importantly, all of the tutors that will be overseeing the intervention will have been subject to screening and undergone appropriate safeguarding training delivered by their Tuition Partner.

The only dimension in which the risk is identified as not Low relates to the nature of the data being collected. Personal, individual-level tutor data will be collected for (a) all tutors that complete the online intervention, and (b) for tutors that agree to participate in the IPE. On (a), tutors will be informed that this personal, individual-level data will be collected in a Privacy Notice at the start of the activity. On (b), tutors will provide their explicit consent to participate in the IPE. There is an ethical concern around confidentiality, particularly because of the power dynamic between tutors and tutor providers, their employers. All personal, individual-level data collected will be treated with the strictest confidence by BIT, unless safeguarding or whistleblowing concerns are raised during the interview and require disclosure in line with any applicable laws and procedures on data protection and safeguarding that BIT must comply with. Reporting outputs will contain anonymised quotes and case examples which will not be able to be traced back to specific individuals. BIT has implemented appropriate measures to ensure secure storage and handling of Personal Data, including obtaining a Cyber Essentials Plus certification and developing a comprehensive Data Handling Protocol. We are registered with the UK ICO under the terms of the Data Protection Act 2018. We are confident that our processes will ensure that the tutor's employer will not be able to link our findings to a particular tutor.

The following table highlights in orange where the current trial falls in terms of risk for different dimensions:

Dimension	Low risk	Medium risk	High risk
Research methods	Standard research methods commonly applied within the substantive area of the research.	Standard research methods that may not have been applied within a particular substance area and that may prove controversial or be sensitive.	Non-standard research methods that may be highly controversial or sensitive.
Participants	Non-vulnerable adults (i.e. 18 years+ in England & Wales or as stated in applicable national legislation).	Children without vulnerable characteristics in a regular setting (school/youth club).	Individuals from vulnerable groups (e.g. refugees) or are children outside regular settings or do not have legal capacity within the meaning of the Mental Capacity Act 2005 or relevant national legislation. (NB: any research with the latter group requires approval via an additional legally mandated process.)
Subject matter	Research relates to a politically and socially uncontroversial area, such as recycling.	Research relates to an issue of some contention but is relatively light-touch	Research relates to a highly-contentious, potentially currently debated or partisan issue
Nature of data	Aggregate anonymous data or data on non-contentious topics (e.g. recycling behaviour) or routinely collected admin data.	Individual-level data not routinely collected.	Individual-level, highly sensitive or special category data routinely or not routinely collected. Also, criminal offence data
Legal exposure	The legal framework in which we are operating is clear. If the project is in a foreign country: we have worked in this country and a similar context before and know the legal requirements.	The legal situation with respect to any aspect (data collection, participant group, intervention) is unclear.	The legal situation with respect to any aspect (data collection, participant group, intervention) is controversial or problematic.
Unknown unknowns	BIT has run a similar project in this domain before	BIT has some experience in the domain, but certain	BIT has no prior experience in this policy domain.

		aspects of the project are new to BIT.	
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This trial does not alert participants to the fact that they are taking part in a trial. All participating tutors agreed to an initial Privacy Notice covering the NTP that referenced their possible involvement in Reach & Engagement RCTs.

Before launching the trial, BIT will register it at the Open Science Framework (osf.io). We will ensure the trial registry is updated with outcomes at the end of the project.

9. Data protection²¹

- Include a data protection statement relevant to the project (i.e., not a link to the organisation's generic data protection policy). This may use information from the Memorandum of Understanding, information sheets and privacy notice

All personal data collected as part of the study will be treated with the strictest confidence by BIT and processed only in accordance with the requirements of the GDPR and the Data Protection Act 2018. BIT will not use any personal data in any report arising from this project. BIT is collecting and processing personal data solely for the purposes of proper delivery, management and evaluation of the project.

- We are seeking to minimise the collection of personal data.
- We will be performing the randomisation of tutors using BIT-ID numbers rather than names and sharing the randomisation results (including randomisation batch number) with tutoring providers; tutoring providers will be sharing the intervention with the intervention tutors, so that we will not need contact details for this purpose.
- We will ensure that no personal data is visible to BIT team members during the video calls we have with tutoring providers to support the correct implementation of the randomisation.
- We will need to collect personal data from the tutors who complete the intervention, as well as from involved tutoring provider staff. A privacy notice will be hosted on the intervention website through which this personal data is collected. We will collect the following information associated with these individual tutors:
 - Tutor email addresses (so that we can administer the subsequent intervention reminders, and so that we can recruit and schedule TP staff case study interviews)
 - Tutor names (so that the intervention reminders and interview recruitment correspondence can be personalised)
 - Intervention question answers (which will be used in the intervention reminders) - if the tutor so chooses, this may be in the form of a video.
 - Intervention delivery metadata (including date of completion)

These data will allow us to administer the intervention reminders and schedule and conduct interviews with tutors (as indicated above), as well as help us identify how many tutors have completed the intervention and when the intervention was administered.

²¹ Please see the [Data Protection Statement](#) for EEF Evaluations.

We will also collect personal data (name and email address) from those tutoring staff who are to take part in IPE interviews.

- We will be collecting data for the impact analysis from NFER against pupil IDs and tutor IDs rather than names. Ahead of this data transfer, tutoring providers will share with NFER each tutor's BIT-ID, their BIT trial randomisation assignment and their randomisation batch number, linked to tutor names and other data, as part of a scheduled NTP data transfer. NFER will integrate these data into their relational database and share with BIT the data we need for our impact analysis, against newly-generated tutor and pupil ID numbers rather than names. Both the pupil and tutor tables will contain the tutor's ID number, BIT trial randomisation assignment and randomisation batch number.

We have performed a risk assessment analysis and concluded that we do not consider these data to be personal. Nevertheless, we will include a sentence in our privacy notice for intervention tutors (hosted on our intervention website) detailing the data we are collecting from NFER, letting them know it will be in anonymised form and that we will not be linking it with the personal data we are collecting from them.

Please see Appendix B for more information

- [Specify your legal basis for processing personal data, with reference to the General Data Protection Regulation \(GDPR\) Article 6 and/ or Data Protection Act 2018.](#)

LEGITIMATE INTERESTS: Our lawful basis for processing **personal** data is legitimate interests (as per Article 6 (1) (f) of the GDPR) and we have considered that participants' interests and fundamental rights do not override those legitimate interests.

Please see Appendix B for more information.

- [Specify your legal basis for processing any special data with reference to GDPR Article 9 and/ or Data Protection Act 2018.](#)

We are not collecting any personal special category data.

10. Personnel

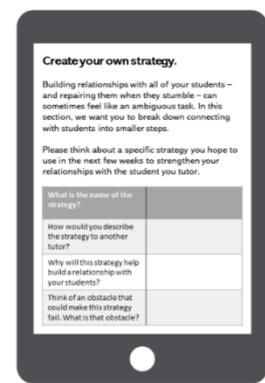
Project team member	Project role
Kimberly Bohling	Principal Investigator
Dr Giulia Tagliaferri	Quantitative Lead (RCT design and analysis)
Dr Matthew Holt	Qualitative Lead (IPE design and analysis)
Lal Chadeesingh	Project Manager and Intervention Design Lead
Nancy Wilkinson	Quality Assurance and Senior Project Advisor
Dr Raj Chande	Quality Assurance and Senior Project Advisor
Dr Kathryn Atherton	Policy Advisor (Education) and Data Management Lead
Dave Wilson	Policy Advisor (Education)
Rizwaan Malik	Policy Advisor (Education)
Dr Yihan Xu	Research and Analysis Advisor
Dr Jo Milward	Research and Analysis Advisor
Eleanor Collerton	Project Advisor and Data Support
Dr. Todd Rogers (Harvard Kennedy School)	Academic Advisor
Dr. Carly Robinson (Brown University)	Academic Advisor

Appendix A — Illustrative design of intervention materials

- Tutors will complete a short (20 minutes) online activity.
- In the activity, tutors are introduced to some strategies that other tutors use to develop pupil-tutor relationships.
- They then have the opportunity to create their own strategy for developing and maintaining tutor-pupil relationships.
- Tutors will then be reminded of their strategy 2-3 weeks later.



Stage 1: Tutors learn about other tutor's strategies for developing tutor-pupil relationships.



Stage 2: Tutors then have the opportunity to create their own strategy.

Appendix B — Additional data protection information

1. Legal bases for data processing

LEGITIMATE INTERESTS: Our lawful basis for processing **personal** data is legitimate interests (as per Article 6 (1) (f) of the GDPR) and we have considered that participants' interests and fundamental rights do not override those legitimate interests.

It is necessary in BIT's 'legitimate interests' to process the personal data identified above in order to deliver a meaningful RCT that has been commissioned by EEF (commercial interests). The research project fulfils BIT's core business aims including undertaking research, evaluation and information activities in sectors that will deliver social impact. This project has broader societal benefits; it tests the effectiveness of interventions designed to increase pupils' engagement with the National Tutoring Programme - an initiative designed to help address the adverse consequences of COVID-19-related school closures for children's education, especially disadvantaged children.

2. Our approach to GDPR compliance

BIT is minimising the collection of personal data wherever possible in this project. We are collecting data for the impact evaluation against pupil and tutor IDs rather than names. We have performed a risk assessment analysis and concluded that we do not consider these data to be personal.

We will, however, need to collect personal data from the tutors who complete the intervention (for the purposes of: administering the intervention reminders; recruiting and scheduling TP staff case study interviews; helping us identify how many tutors have completed the intervention; and allowing us to see when the intervention was administered, as described above). A privacy notice will be hosted on the intervention website through which this personal data is collected, which explains what personal data we are collecting and why, our legal basis for doing so, who will have access to the data, our data security arrangements and our plans for data retention. We have appointed a Data Protection Officer (DPO) who is responsible for overseeing questions in relation to this privacy notice. The privacy notice contains the DPO's contact details, and informs the reader of their legal rights, including the right to make a complaint at any time to the Information Commissioner's Office (ICO), the UK supervisory authority for data protection issues (www.ico.org.uk). The privacy policy asks these tutors to make sure the details they provide are accurate and up to date, and to let us know about any changes as soon as possible.

As stated above, all personal data collected as part of the study will be treated with the strictest confidence by BIT and processed only in accordance with the requirements of the GDPR and the Data Protection Act 2018. BIT will not use any personal data in any report arising from this project. BIT is collecting and processing personal data solely for the purposes of proper delivery, management and evaluation of the project.

2.1. Data security

We take reasonable steps to protect personal information and follow procedures designed to minimise unauthorised access, alteration, loss or disclosure of personal information.

Taking into account the state of the art, the costs of implementation and the nature, scope, context and purposes of processing as well as the risk of varying likelihood and severity for

the rights and freedoms of natural persons, we implement appropriate technical and organisational measures to ensure a level of security appropriate to the risk of processing.

We ensure that those who have permanent or regular access to personal data, or that are involved in the processing of personal data, are trained and informed of their rights and responsibilities when processing personal data. We provide such access on a need-to-know basis and have measures in place which are designed to remove that access once it is no longer required.

Physical personal devices used by BIT are encrypted to protect personal data.

We have put in place procedures to deal with any suspected personal data breach and will notify participants and any applicable regulator of a breach where we are legally required to do so.

2.2. All parties with access to the data

The personal data that BIT collects will be accessed by a limited number of researchers and advisors in BIT's team working on this project.

BIT may disclose information to third parties in connection with the purposes of processing personal data set out in the privacy notices. These third parties may include:

- other companies in BIT's group [that are based within the United Kingdom].
- regulators, law enforcement bodies and the courts, in order to comply with applicable laws and regulations, assist with regulatory enquiries, and cooperate with court mandated processes, including the conduct of litigation.
- suppliers, research assistants and sub-contractors who may process information on behalf of BIT. These third parties are known as data processors and when we use them, we have contractual terms and policies and procedures in place to ensure that personal data is protected. This does not always mean that they will have access to information that will directly identify individuals as we will share anonymised or pseudonymised data only wherever possible. We remain responsible for personal information as the controller; and
- any third party to whom we are proposing to sell or transfer some or all of our business or assets.

We may also disclose personal information if required by law, or to protect or defend ourselves or others against illegal or harmful activities, or as part of a reorganisation or restructuring of our organisations.

2.3. Data retention

We will not retain any personal data longer than it is needed to deliver, manage and evaluate the project. The anticipated date of deletion of personal data is October 2021.

3. Data processing roles

For the personal data we collect (about intervention tutors via the intervention website): Behavioural Insights Ltd (the legal name of Behavioural Insights Team (BIT)) is the controller and is responsible for the personal data.

As noted in the section above, we may share personal data with a limited number of trusted data processors solely for the purposes of supporting the delivery, management and evaluation of the project. This will be detailed in the privacy notice on our intervention website.

It will not be necessary to archive any personal data from this project.

Appendix C – Pupil premium status

Table C1: Pupil premium status per tutoring provider

Tutoring Partner Name	% Pupil Premium of Pupils reached so far as of 29/01/21 (EEF Monitoring Data)
Action Tutoring	72%
The Access Project	63%
CoachBright	74%