



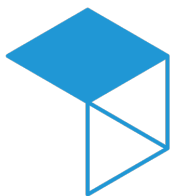
Education
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Foundation

Prioritising Tutoring Relationships to Improve Pupil Attendance

Nimble Trial Report

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THE
**BEHAVIOURAL
INSIGHTS
TEAM**



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- encouraging schools, government, charities, and others to apply evidence and adopt innovations found to be effective.

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About the evaluator

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Executive summary

The project

The Education Endowment Foundation (EEF) led the management of the Tuition Partners (TP) pillar of the National Tutoring Programme (NTP) in 2020/2021, funded as part of the government's COVID-19 catch-up package. The TP programme allowed schools to access subsidised tuition from a list of 33 tuition partners, quality-approved by the EEF, to support pupils who have missed out the most as a result of school closures due to the COVID-19 pandemic. The focus was to support disadvantaged pupils, in particular those eligible for Pupil Premium; however, schools had the flexibility to select pupils to take part.

The EEF commissioned the Behavioural Insights Team (BIT) to run a reach and engagement nimble randomised controlled trial (RCT) with three approved NTP Year 1 (2020/2021) Tuition Partners: Action Tutoring, CoachBright, and The Access Project. The purpose of this trial was to test whether a light-touch intervention that sought to improve tutors' beliefs about their ability to build positive relationships could improve pupils' attendance at tutoring sessions.

This trial tested the marginal gain from adding a light-touch intervention to TPs' 'business as usual' activities (which included significant guidance on building relationships with pupils), as opposed to their general relationship-building guidance. The target group were tutors from Action Tutoring, CoachBright, and The Access Project. All tutors working with the TPs involved during the trial period (5 February 2021 to 27 August 2021) were eligible for the trial. This included tutors working with both primary and secondary pupils.

Details of the intervention were emailed out to the tutors in the treatment group by their TP. The intervention involved completing a web-based activity in which tutors were encouraged to reflect on a time they connected with a pupil or someone else, before learning a range of relationship-building strategies used by other tutors, and then having an opportunity to develop their own, personal relationship-building strategy. Tutors then received emails after completing the activity reminding them of their personal strategy. The intervention was trialled in a two-arm cluster randomised trial, with randomisation happening at the tutor level; 1,144 tutors and 2,587 pupils were involved in this trial.

Table 1: Summary of findings

Research question	Finding
Does an online activity seeking to improve tutors' beliefs about their ability to build positive relationships increase their pupils' attendance at tutoring sessions?	Pupils in both arms in the trial had comparable attendance rates at tutoring sessions, meaning that the light-touch training intervention did no better or worse than the TPs' standard practice.
Does an online activity seeking to improve tutors' beliefs about their ability to build positive relationships increase their Pupil Premium (PP) pupils' attendance at tutoring sessions?	Pupil Premium pupils in both arms in the trial had comparable attendance rates at tutoring sessions, meaning that the light-touch training intervention did no better or worse than the TPs' standard practice'.

Additional findings

The scoping phase of this project (interviews with Tuition Partners) indicated that pupil attendance at tutoring sessions was a common challenge, with a number of contributing factors. One specific factor—the quality of the pupil-tutor relationship—was identified consistently across the TPs as of particular importance. TPs identified that when pupils and tutors had better relationships, pupils were more likely to attend sessions and more likely to engage in the learning

process. Given this, this trial sought to evaluate an intervention specifically aimed at improving the pupil-tutor relationship.

In the impact evaluation, which measured the primary outcome of attendance (calculated by dividing the number of session hours attended by the number of session hours purchased for that pupil) pupils in both arms in the trial had comparable attendance rates at tutoring sessions, meaning that the light-touch training intervention did no better or worse than the TPs' 'business as usual'. This was the case for Pupil Premium pupils too.

In the implementation and process evaluation (IPE), researchers collected completion rates to better understand delivery implementation. Data on tutors' engagement with the intervention shows that 60% of tutors were recorded as completing the materials provided for the intervention.

A case study was also collated for each Tuition Partner, based on staff and tutor interviews, which identified a range of opportunities to improve the activity. Tutors found the activity to be a useful overview of relationship-building strategies and also identified barriers that may have affected impact; these included the time between completing the activity and the first tutoring session, the degree of engagement from pupils, and the relevance of the relationship-building strategies for an online context. Tutors found it particularly difficult to implement relationship-building strategies during online tutoring.

Feedback from Tuition Partners and tutors on improving the implementation and the quality of the intervention included:

- improving TPs' ability to track completions and encourage completion through different channels;
- providing a feedback or interaction function for tutors to subsequently follow-up with TP staff;
- encouraging tutors to complete the activity immediately after being matched with their pupils;
- providing the ability for tutors to refer back to the activity or complete it again to change their strategy; and
- further developing the strategies provided by experienced tutors.

Introduction

As part of the government's response to COVID-19-related school closures, the Education Endowment Foundation (EEF) led the management of the Tuition Partners (TP) pillar of the National Tutoring Programme (NTP) in 2020/2021. The TP programme allowed schools to access subsidised tuition from a list of 33 tuition partners, quality approved by the EEF, to support pupils whose learning had been impacted by school disruption due to the COVID-19 pandemic. The focus was on supporting disadvantaged pupils, in particular those eligible for Pupil Premium, though schools did have flexibility to select pupils they felt were in most need of support. The NTP subsidised the lessons by 75%, with the schools paying the remaining 25%.

In addition to the overarching evaluation of the NTP, the EEF commissioned a series of evaluations to assess different strategies to reach and engage schools, tutors, and pupils. This report presents findings from one such trial that tested whether an intervention that sought to improve tutors' beliefs about their ability to build positive relationships could improve pupils' attendance at tutoring sessions.

Background evidence

Interviews with the TPs during the scoping phase of this project indicated that pupil attendance at tutoring sessions is often an issue, with attendance rates typically varying between 67% and 80%.¹ Interviews during the scoping phase identified a large number of factors that contribute to poor attendance, including the capacity of the lead teacher to follow up with pupils, the timing of sessions, and the support of parents. However, one specific factor—the quality of the pupil-tutor relationship—was identified consistently across the TPs and was considered to be of particular importance. TPs explained that from their experience, when pupils and tutors had better relationships, pupils were more likely to attend sessions and more likely to engage in the learning process. Given this, this trial sought to evaluate an intervention specifically aimed at improving the pupil-tutor relationship.

The intervention tested in this trial is built on the concept of 'relational self-efficacy', which refers to a tutor's belief about their ability to form, maintain, and repair relationships with pupils (Robinson, 2020). In research conducted in the U.S., Robinson (2020) suggests that teachers with higher relational self-efficacy have more positive relationships with pupils (as assessed by teachers and pupils). Robinson (2020) has also generated preliminary evidence that teachers' relational self-efficacy can be increased; in two doctoral studies (one in the field and one online), teachers' levels of relational self-efficacy were raised after completing the following three activities:

- self-mastery—teachers reflected on a time they connected with pupils.
- 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 pupils.

In the field study, teachers were reminded of their strategy four or five weeks into the trial. Conversations with the lead researcher indicated that this element was perceived to be particularly important for the intervention's overall efficacy.

While the research base for the role of relational self-efficacy on pupil-tutor relationships is still nascent (for example, there have been no large-scale randomised evaluations), Behavioural Insights Team (BIT) and the EEF considered there to be sufficient evidence of promise to conduct a nimble trial evaluating the intervention.

Intervention

The intervention involved tutors completing a short web-based activity focused on building relationships with pupils, which followed a similar structure to the activity used by Robinson (2020). Tutors were first asked to reflect on a time when they connected with someone (ideally a pupil or young person), then shown a range of common relationship-building strategies used by other tutors, before having the opportunity to develop their own personal strategy. Informed

¹ Data provided by one TP on 25 February 2021 indicated a baseline attendance rate of 71%; another reported 80%; data provided by the EEF on 26 February 2021 indicated a baseline rate of 67%.

by behavioural science research on the importance of timely reminders, tutors were then sent reminders two weeks after the initial activity that reminded them of their personal strategy.

Table 2 contains an overview of the intervention, and Appendix A contains example materials from the intervention.

Table 2: Intervention overview

Intervention name	Prioritising Tutoring Relationships to Improve Pupil Attendance
Why (theory/rationale)	'Relational self-efficacy' refers to a tutor's belief about their ability to form, maintain, and repair relationships with pupils. Preliminary research in the U.S. has suggested that teachers with higher relational self-efficacy also have more positive relationships with pupils, and that teachers' relational self-efficacy can also be increased through interventions (Robinson 2020).
Who (recipients)	Only tutors participated in the intervention.
What (materials)	Tutors received an initial email from their TP inviting them to complete a web-based activity that sought to improve tutors' relational self-efficacy. This was then followed up with: • an email immediately after completing the activity outlining the personalised relationship-building strategy the tutor had developed; and • a follow-up email two weeks later reminding the tutor of their personalised relationship-building strategy. Screenshots of the activity and emails can be found in Appendix A.
What (procedures)	In the short (20 minute) online activity, tutors worked through three activities: 1. reflecting on a moment they connected with a pupil or someone else; 2. learning about common relationship-building strategies used by other tutors; and 3. developing their own, personal relationship-building strategy.
Who (provider)	The intervention materials were provided to the TPs by BIT. The intervention was then delivered to tutors by the TPs.
How (delivery mode)	The link to the intervention was delivered to tutors by email.
Where (location)	The intervention was completed independently by tutors at a time and place of their choosing.
When and how much (dosage)	The intervention was delivered once, at the start of the trial period, ideally before tutors started tutoring. Tutors were then provided with a reminder of their strategy two weeks after completing the activity.
Tailoring (adaptation)	All tutors completed the same initial activity. Given the nature of the intervention, the follow-up emails were personalised to each tutor based on their answers to the initial intervention.

Research questions

Impact evaluation

This trial aimed to address the following research questions (RQs) as set out in the study protocol:

- RQ1** Does an online activity seeking to improve tutors' beliefs about their ability to build positive relationships increase their pupils' attendance at tutoring sessions?
- RQ2** Does an online activity seeking to improve tutors' beliefs about their ability to build positive relationships increase their Pupil Premium (PP) pupils' attendance at tutoring sessions?

The study protocol can be found on the EEF's website (linked [here](#)). Pre-registration can be found on OSF (linked [here](#)).

Implementation and process evaluation

The implementation and process evaluation (IPE) aimed to address the following research questions as set out in the study protocol:

1. What proportion of tutors in the treatment group started and completed the activity (compliance)?
2. How many tutors partially completed the activity (reach)?²
3. How did tutors and TP staff experience the intervention (quality)?
4. How was the intervention implemented (fidelity)?
5. What were the barriers and facilitators to implementation and delivery (mechanisms)?

² A partial completion is defined as loading the first page of the activity and clicking the button to progress from the first screen to the next screen. This is a relatively low threshold, but was the only metric available through the platform that hosted the intervention activity.

Methods

Trial design

The trial design was a two-armed cluster randomised trial that aimed to test the impact of an intervention designed to increase tutors' relational self-efficacy. The two arms of the trial were:

Control

Tutors in the control arm received the TP's 'business as usual' training and support. Tutors from all TPs completed mandatory initial training before completing any sessions, which covered important topics such as child safeguarding and lesson planning. Across the three providers there were core training activities as well as additional activities designed to support tutors to develop relationships with their tutees. The control group activity section contains more information on the 'business as usual' support provided by each TP.

Treatment

Tutors in this group received the intervention activity by email. Details of the content of this activity can be found in Table 2 and Appendix A.

Table 3 provides a summary of the trial design; Figure 1 is the CONSORT trial diagram.³ The Sample Size section provides a full account of the information presented in the CONSORT trial diagram.

Table 3: Trial design

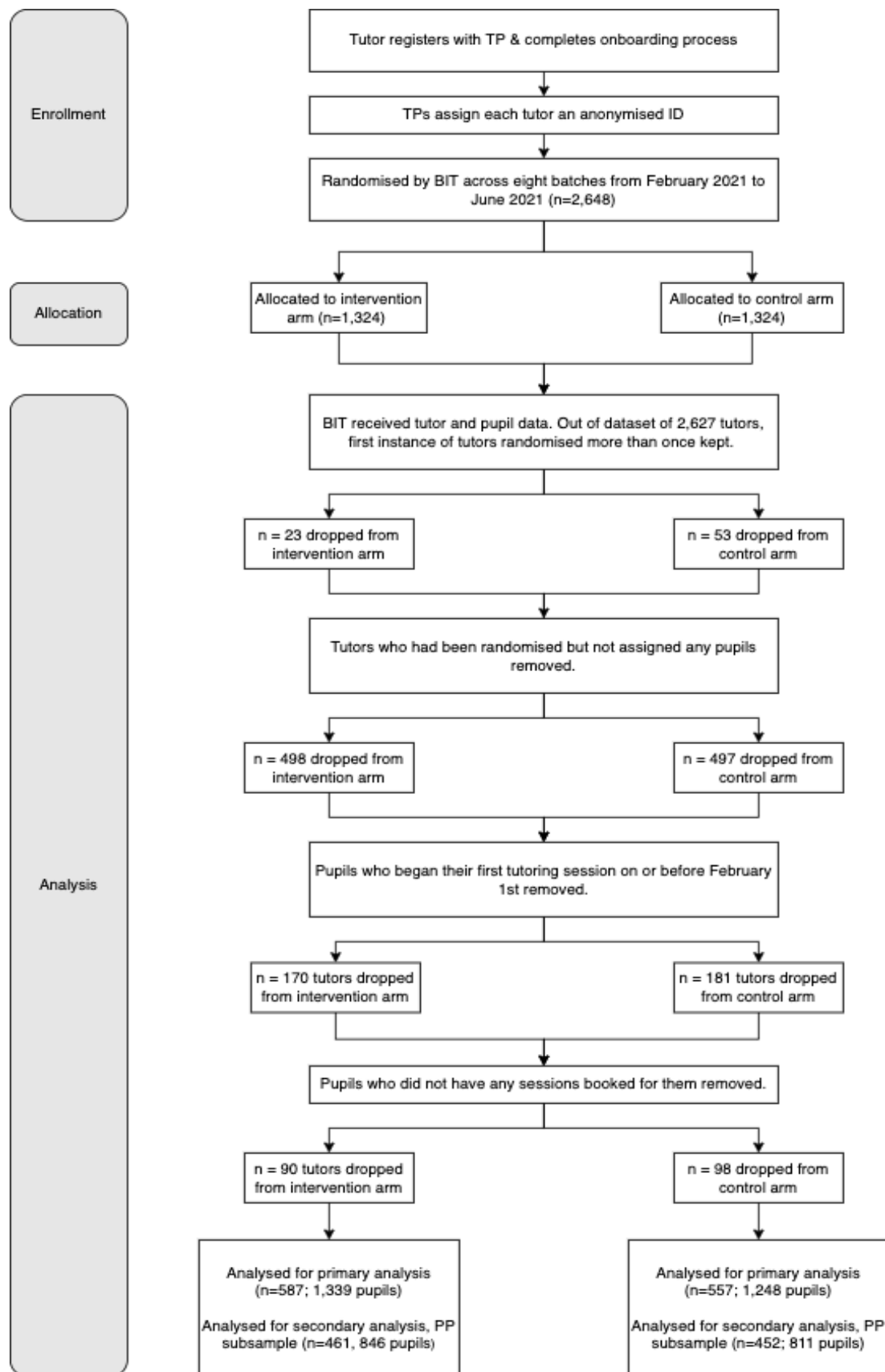
Trial design, including number of arms		Two-arm, cluster randomised trial.
Participants	inclusion criteria	Tutors and pupils at participating TPs.
	exclusion criteria	Pupils that started their first tutoring session before or on 1 February 2021.
	target number	1,400 tutors; 2,700 pupils.
Unit of randomisation		Tutor.
Stratification variables (if applicable)		Stratify by TP (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 purchased.
	measure (instrument, scale, source)	The proportion (expressed as a percentage) of hours of tutoring sessions attended by each pupil out of those purchased by their school.

³ The CONSORT flow chart is a diagram of the progress through the phases of a parallel randomised trial of two groups (that is, enrolment, intervention allocation, follow-up, and data analysis): <http://www.consort-statement.org/consort-statement/flow-diagram>

		This information was provided to the National Foundation for Educational Research (NFER) by the individual TPs. ⁴
	direct measure or proxy?	Direct measure.
	baseline measure	74% (SD = 28%).
	time of collection	Pupils' attendance was recorded during every session.

⁴ BIT liaised with the TPs involved in this trial to ensure they understood the importance of accurate data collection. In addition, TPs attended seminars held by NFER in which they were instructed on data collection. We believe that these strategies minimised the risk of inaccurate data collection (for example, tutoring partners rectifying the number of scheduled sessions if a pupil drops out).

Figure 1: Trial design



The only important change made to the original trial design was the delaying of the end of the trial from 31 July to 31 August. This was due to the NTP's decision to permit tutoring sessions to continue over the summer holidays. Minor deviations to the trial protocol (pre-agreed with the EEF) are reported in the Deviation from the Trial Protocol section.

Participant selection

All tutors working for the participating TPs were eligible to take part in the trial. However, the TPs were recruiting and incorporating tutors throughout the trial period,⁵ meaning that they were unable to identify all of the eligible tutors at the start of the trial. As such, the TPs compiled a list of newly-inducted tutors on a fortnightly basis that was then shared with BIT for randomisation.

If a tutor was not assigned to a pupil during the trial period, after entering randomisation, they were excluded from the sample.

Outcome measures

Primary outcome

The primary outcome measure was pupil attendance at tutoring sessions. This was calculated by dividing the number of session hours attended by the number of session hours purchased for that pupil.⁶ This outcome measure was chosen for the following reasons:

- Importance for learning. Due to this being a nimble trial, there was neither time nor capacity to use an outcome measure that assessed learning directly. However, attendance at tutoring sessions is essential for pupils to receive any of the benefits from tutoring and is therefore an important intermediate outcome.
- Ease of collection. Attendance data is routinely collected after every session by the TPs. Importantly, collecting it did not create an additional process for TPs.
- High quality objective data. The pupil attendance rate is an objective measure. Given the simplicity of recording, the quality of data is typically high.
- Alignment to TP Key Performance Indicators (KPIs). TPs were particularly interested in targeting the pupil attendance rate as this was one of their KPIs throughout the NTP.

The attendance data was collected by the TPs individually and shared with NFER at the end of the trial period.

Sample size

In total, 2,648 tutor IDs were provided to BIT by TPs and were randomised into one of the two groups between February and June 2021 (1,324 in control, 1,324 in the intervention). The dataset provided by NFER contained a total of 2,627 tutor IDs from the relevant TPs (21 IDs less than the ones randomised).

When the NFER compiled the final dataset for the analysis, it informed BIT that a minority of these IDs were duplicates (around 3%). These tutors appeared in more than one 'randomisation batch' with different IDs, hence had been randomised more than once by BIT. Conversations with the relevant tutoring partners clarified that this had been an implementation oversight on the tutoring partners' behalf, happening at random. For this reason, for each of the 75 tutors with more than one treatment allocation, we keep only the copy (the duplicate) that entered randomisation first. Within this group, eight have been randomised more than once within the same batch, in which case one observation was retained for each at random.

The resulting dataset had 2,551 uniquely identified tutors. Of these, 995 could not be matched to any pupils' records. This applied to 497 tutors in the control arm and 498 tutors in the intervention arm. Based on conversations with NFER, it was concluded that these tutors were never assigned to give any tutoring sessions. In agreement with the EEF, these tutors are excluded from the analysis.

⁵ The TPs involved noted that they recruit new tutors year round and so are always inducting new tutors.

⁶ The number of session hours scheduled for pupils was typically 15 but was lower in some cases.

The resulting dataset consisted of 1,556 tutors that successfully matched the pupils assigned to their tutoring classes. In accordance with the trial protocol, observations for pupils that had started their first tutoring session on or before 1 February 2021 were removed, reducing the total number of tutors to 1,205. This was to ensure that the intervention was used by tutors sufficiently early on in their sequence of tutoring sessions.

Of the pupils that were assigned to these tutors, 188 had never had any tutoring sessions bought for them by their schools (7%) so they were also dropped from analysis as they had no attendance data to be used for the outcomes in the analysis. As a consequence, 57 tutors were also dropped.

A further 17 pupils had missing data for hours of tutoring attended. As specified in the trial protocol, it was assessed whether this missingness was possibly a function of treatment. It was found not to be predicted by the treatment group and these cases were dropped from analysis. As such, *the final sample to be used for the impact evaluation consisted of 1,144 tutors and 2,587 pupils.*

At the trial protocol drafting stage, it was expected that 47% of pupils receiving tutoring classes would receive Pupil Premium (PP) funding, based on EEF estimates. The proportion of PP pupils in the trial was actually higher than that, at 64%, or 69% if cases where PP status was missing were excluded.

Based on pre-COVID-19 historical data provided by the TPs, the expected attendance rate was approximately 74%. However, the mean attendance for the sample in this trial was significantly lower (55%). It is possible that the group of pupils targeted by the NTP differed from the group of pupils targeted by schools and the TPs in previous years. It is also likely that the lower attendance rate is at least partly explained by the circumstances during the trial period, and in particular the impact of COVID-19 and associated disruption in schools. The standard deviation of raw attendance (30%) was similar to the one estimated using other TPs' data at the trial protocol drafting stage (28%).

A five percentage point increase in the pupil attendance rate would constitute a substantive effect size, and that was included in the trial protocol. This assessment was informed by the prior evidence for the intervention and typical effect sizes observed for light-touch behavioural interventions in education. The analysis was powered to detect such a change both in the primary analysis (overall effect) and in the secondary analysis (PP subsample).

Table 4: Minimum detectable effect size at different stages

		Protocol		Analysis	
		Overall	Pupil Premium	Overall	Pupil Premium
MDES ⁷		3.3%–3.9% (Mean attendance: 74%, SD: 28)	4.8%–5.6% (Mean attendance: 74%, SD: 28)	4.3% (Mean attendance: 56.9%, SD: 30.1)	4.7% (Mean attendance: 54.9%, SD: 29.7)
Alpha		0.05	0.05	0.05	0.05
Power		0.8	0.8	0.8	0.8
Average cluster size		2.0 ⁸	2.0 ⁸	2.26	1.82
Intra-cluster correlation		0.2–0.7	0.2–0.7	0.47	0.43
Number of tutors	Intervention	713	713	587	461
	Control	713	713	557	452
	Total:	1,426	1,426	1,144	913
Number of pupils	Intervention	1,348	634	1,339	846
	Control	1,348	634	1,248	811
	Total:	2,696	1,268	2,587	1,657

Randomisation

A rolling (batch) randomisation approach was used in this trial whereby tutors were assigned to a treatment once they had been inducted by the TP. Every fortnight, the TPs collated a list of tutors that had been newly-inducted in the previous two-week period and generated a list of unique 'BIT-IDs' for each tutor. This list of anonymised BIT-IDs was then sent to BIT for randomisation. In the appendix, we provide a summary of how many tutors were randomised for each TP in each fortnightly batch.

For each batch of randomisation, researchers at BIT used the statistical software R to first stratify tutors at the TP level and to then randomise at the tutor level (that is, all pupils paired with the same tutor were allocated to the same condition, treatment or control). The full process followed by the researcher was:

- for each batch from each tutoring partner, the data was loaded into R;
- set a new seed of R's random number generator and sort seed;

⁷ MDES ranges depend on assumptions about the intra-cluster correlation.

⁸ This ranges from one to three depending on TP and school.

- generate a random number from a uniform distribution (0 to 1); each tutor was then assigned a random number from 0 to 1;
- sort the tutors according to this random number from lowest to highest;
- assign the first N/2 tutors in the list to the treatment group and the remaining N/2 to the control group;
- where the batch contained an odd number of participants, Nth participant was allocated to the arm, treatment or control, that had the fewest people in it so far (starting from the TPs as ranked in alphabetical order: Action Tutoring, CoachBright, The Access Project); if there was a tie, a second random number was generated from a uniform distribution (0–1) and the Nth participant was allocated to the treatment group if $\text{rand.num} < 0.5$ and to the control group if otherwise.

BIT researchers were not blinded to group allocation while conducting the analysis (they knew which arm each pupil in the dataset was allocated to). While it is the case that BIT developed the intervention and also evaluated it, the risk of researcher bias was determined to be minimal. This was due to the data being provided by NFER with BIT researchers having no way of influencing this. Furthermore, a second independent analyst re-analysed the trial under blind allocation of treatment groups to quality assure results.

As mentioned in the Sample Size section, one issue that emerged in the analysis stage was that approximately 3% of tutors in the sample were randomised more than once. After checking the dataset and speaking with the relevant TPs about this issue, it was found that the majority of these instances involved a tutor being randomised in the first batch of randomisation and then again at a later batch. Discussions with TPs suggested that this was an implementation error. Importantly, it was assessed that this issue occurred at random and that the tutors that were re-randomised were not meaningfully different from those who were not. Due to this occurring at random, it was decided that it would be valid to retain the first instance of these tutors and remove their second randomisation for the analysis, in line with an intention to treat (ITT) approach.

Statistical analysis

The primary analysis was ITT. This means that outcomes were analysed on the basis of the groups that tutors and pupils were randomly allocated to, regardless of their compliance with the intervention.

The covariates listed in the trial protocol included the stratifiers and a range of variables that could influence the pupil's attendance, such as specific aspects of the pupil's profile (for example, subject or age) and specific aspects of the tutor's profile (such as gender or experience). These covariates were chosen as they could potentially influence the outcomes (for example, older pupils may have a higher attendance rate as they are closer to their GCSE exams, or pupils starting earlier in the term may be more motivated as they have more time to improve before the end of term) and so it was felt that controlling for these variables would increase the precision of estimates.

Following the trial protocol, all planned covariates were checked for missing data pre-analysis; those with missingness greater than 5% were removed from the model. This applied to PP status (8%), SEND status (28%), and tutor experience (36%).

A fixed-effect model controlling for the interaction between tutoring partner and batch was used. As the trial involves only a sample of TPs (not the universe of TPs involved with the delivery of the programme), the findings should not be generalised beyond the sample recruited. Table 4 outlines the key information regarding the statistical analysis approach used.

Table 5: Impact analysis summary

RQ	Sample	Dependent variable	Independent variable	Control variable(s)	Analytical method	Interpretation
RQ1 (Prim.)	All pupils with suitable tutoring start date (no sooner than 1 February 2021)	Tutoring attendance (expressed as percentage)	Treatment assignment, where treatment is clustered at the tutor level and stratified at the TP level.	Pupils: ⁹ year group; main subject of tutoring. Tutors: gender. Stratification variables: tutoring; partner*batch.	OLS linear regression	The intervention affects attendance rate by X percentage points.
RQ2 (Sec.)	As above, but restricted to pupils that belong to the PP group			Same as for RQ1.		

Implementation and process evaluation

The study included a light-touch implementation and process evaluation (IPE) that was based on the EEF's latest IPE guidance.

Quantitative methods

To understand better delivery implementation, researchers collected the completion rates, including partial completion rates, of the intervention. The completion rate provided a measure of compliance with the intervention and the partial completion rates provided a measure of reach. These descriptive statistics were collected directly from the survey platform on which the intervention materials were hosted.

Qualitative methods

The impact evaluation was enhanced by a qualitative exploration of implementation, perceived outcomes, and mechanisms of change. A case study approach was used, which involved the gathering of multiple perspectives from multiple sources. Three case studies were conducted, one for each of the TPs in the trial. Each case study consisted of interviews with tutors, and an interview with a member of staff from the TP. The final achieved sample was:

- Action Tutoring: one TP staff interview, four tutor interviews;
- CoachBright: one TP staff interview, one tutor interview; and
- The Access Project: one TP staff interview, one tutor interview.

⁹ NFER obtained a set of pupil characteristics from the National Pupil Database and a set from tutoring partners. Given the timeline of the project, we were unable to access the set of variables (including pupils' gender) that NFER obtained from the NPD. Because this is an RCT, this only marginally affected power (in that gender may have explained part of the variation of the outcome) but it does not affect the internal validity of the treatment effect estimates.

TP interview

A semi-structured interview with a member of staff from each TP was conducted. The interviews took place online and lasted around 30 minutes and focused on the intervention setup, the aims of the intervention, and barriers and facilitators to successful delivery. The interview took place with the staff member deemed to be closest to the delivery of the intervention. The topic guide was developed using the research questions and in collaboration with the intervention team (see Appendix H for Topic Guide).

Tutor interviews

Semi-structured interviews were conducted with a total of six tutors from across the three TPs. The 30- to 45-minute interviews took place online and focused on the completion of the online activity and the embedding of the strategy in practice. The interview participants were purposefully selected to represent diversity in their years of experience and their number of tutees. The tutors were recruited by the TPs as gatekeepers who sent out recruitment materials to tutors who fit the initial sample criteria. Due to low uptake from CoachBright and The Access Project, sampling criteria were relaxed to include any willing tutor participants. The topic guide was developed using the research questions and in collaboration with the intervention team (see Appendix H for Topic Guide).

Qualitative analysis

The interviews were transcribed and then analysed in NVIVO. Data was analysed using Braun and Clarke's (2006) six-step approach to thematic analysis, which involved coding the data and identifying emerging themes. Themes underwent a further round of classifying and were sorted into high-level themes and sub-themes.

The predetermined topics of the interview were used to interrogate the data. During the analytical process a balance 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) was maintained and researcher bias was mitigated by a combination of having multiple researchers code the same data and through an analysis meeting designed to reach agreement among the team.

Table 6 provides an overview of the IPE methods.

Table 6: IPE methods overview

Research methods	Data collection methods	Participants/data sources (type, number)	Data analysis methods	Research theme addressed
Qualitative	Semi-structured interview	3 x provider staff	Thematic analysis	Quality Fidelity Mechanisms
Qualitative	Semi-structured interview	6 x tutors	Thematic analysis	Quality Fidelity Mechanisms
Quantitative	Survey/Webapp data	Tutoring partners	Descriptive analysis	Compliance Reach Fidelity

Deviations from the trial protocol

Sample selection

Given the small number (~3%) of duplicate tutors identified by NFER in the final dataset, BIT decided to keep the copy that entered randomisation first. See Sample Size for further information.

Outcome definition

NFER communicated to BIT that the two variables used to construct the outcome (sessions bought and sessions attended) were expressed as number of hours instead of number of sessions. NFER suggested that the change was unlikely to bear any important consequences as the majority of tutoring sessions were designed to be one hour long (however, there may have been some minor TP-level variation). It is BIT's opinion that, if anything, this change allowed the study to measure attendance at a more granular level (for example, whenever only 30 minutes, half a session, is attended). For this reason, the interpretation of the final outcome was 'proportion of hours of tutoring attended' instead of 'proportion of tutoring sessions attended'.

Fidelity definition

It was intended that fidelity measures would be calculated based on how many tutors spent at least ten minutes completing the activity. Unfortunately, the platform was only able to detect whether tutors completed or partially completed the activity without any reference to a specific amount of the time spent. As these metrics helped estimate the compliance and reach, fidelity has now been explored through qualitative methods.

IPE tutor sample

It was intended that four tutors from each TP would be interviewed, however, only Action Tutoring was able to recruit four tutors and achieve the proposed sample. CoachBright and The Access Project had low uptake of tutor responses to the interview recruitment materials, each only securing one tutor who was willing to be interviewed, resulting in a total of six interviews instead of the intended 12.

Findings

Figure 2: Summary of findings

Research question	Finding
Does an online activity seeking to improve tutors' relational self-efficacy increase their pupils' attendance at tutoring sessions?	Pupils in both arms in the trial had comparable attendance rates at tutoring sessions meaning that the light-touch training intervention did no better or worse than the TPs' 'business as usual' practice. (Hedges' $g = 0.02$; 95% CI: -0.06, 0.11).
Does an online activity seeking to improve tutors' relational self-efficacy increase their Pupil Premium (PP) pupils' attendance at tutoring sessions?	PP pupils in both arms in the trial had comparable attendance rates at tutoring sessions meaning that the light-touch training intervention did no better or worse than the TPs' 'business as usual' practice. (Hedges' $g = 0.03$; 95% CI: -0.06, 0.13).
Compliance	Sixty percent of tutors in the intervention arm were recorded as having fully completed the materials; 91% of tutors in the intervention arm at least partially completed the materials provided.
Balance	Based on the balance checks there is no reason to suspect that randomisation failed.
Attrition	Tutor attrition of 57% was observed from randomisation to analysis. This was mainly because some tutors were randomised but were not assigned any pupils in the time period used for analysis. The level of attrition across the intervention and control groups was consistent and there is no reason to see this attrition as biased.
Process evaluation: implementation and fidelity	TPs implemented the activity as described, including sending out the schedule of reminders at the correct time intervals.
Process evaluation: outcomes	Interviews were conducted with programme staff at the TPs ($n = 3$) and with tutors ($n = 6$). These indicated that tutors found the activity to be a useful overview of relationship-building strategies. Tutors also identified a range of barriers that may have affected the impact of the activity. These related to (1) the time between completing the activity and the first tutoring session, (2) the degree of engagement from pupils, and (3) the relevance of the relationship-building strategies for an online context.

Process evaluation: formative findings	For TPs seeking to implement relationship-building activities for tutors, based on findings from the IPE, it may be useful to factor in the following principles: 1. Provide tutors with tried and tested strategies for building relationships with pupils. These are likely to be particularly impactful if delivered by an experienced tutor. 2. Ensure that tutors are equipped with relationship-building strategies specifically tailored to an online tutoring environment (if this is the medium through which the tutoring is likely going to take place). 3. Provide tutors with clear expectations of how much time to dedicate to relationship-building activities. 4. As far as possible, share relationship-building activities with tutors close to the start of their tutoring sessions to ensure the content is fresh in their mind. 5. Ensure that guidance on relationship-building is easily accessible and that tutors can refer back to the training when they begin their sessions.
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Attrition

As reported in the Sample Size section, the analytical sample includes 1,504 tutors fewer than the total number of tutors randomised because:

- 995 tutors were not assigned tutees;
- 351 were matched with pupils who had begun tutoring sessions on or before 1 February 2021;¹⁰
- 61 were assigned to students who did not go on to have any sessions purchased for them by their school;
- 76 were instances of duplicate tutor IDs; and
- 21 were not in the raw dataset received.

Tutor attrition differed across providers, with CoachBright seeing less attrition (32%) than Action Tutoring (57%) and The Access Project (89%). The tutors that did not match any pupils in the dataset provided by NFER were equally spread across the control group (50%) and the intervention group (50%). They were also similar to the sample used for analysis in terms of gender and experience. The level of attrition was likely influenced by the context of school closures, with some TPs noting that tutoring sessions were not permitted to continue in some instances.

In the final sample used for analysis there were no missing values for the primary outcome (attendance rate). PP status was missing for 7% pupils, SEND status was missing for 28% of pupils, and tutor experience was missing for 36% of tutors.

Table 7: Attrition from the trial—primary outcome

		Intervention	Control	Total

¹⁰ This is following the exclusion criteria outlined at the protocol stage.

Number of tutors	Randomised	1,324	1,324	2,648
	Analysed	587	557	1,144
	Attrition	737	767	1,504
	Percentage attrition	55.7%	57.9%	56.8%

Participant characteristics

Table 8 provides a cross-tabulation for all covariates included in the analysis across control and treatment groups and variables that were originally specified as covariates but removed from the model due to missingness.¹¹ The absolute difference in proportions across arms is always relatively small. Therefore, the randomisation is considered to be well-balanced and successful. In the final sample used for analysis, the control group consisted of 1,248 pupils (48% of sample) and the intervention group consisted of 1,339 pupils (52%).

Table 8: Balance check

Note: each cell represents the proportion of pupils, not tutors.

	Intervention (1,339)	Control (1,248)	Total (2,587)
% in Year 10	36.4%	33.4%	35.0%
PP	63.2%	64.9%	64.1%
SEND	15.2%	13.8%	14.5%
Maths main subject of tutoring	50.6%	49.0%	49.8%
English main subject of tutoring	41.8%	43.6%	42.7%
Science main subject of tutoring	7.5%	7.5%	7.5%
Female tutor	63.9%	67.5%	65.6%

¹¹ We do not report balance for the fixed effect batch*TP in the table.

Action Tutoring	66.6%	65.5%	66.1%
Coach Bright	31.7%	32.4%	32.0%
The Access Project	1.6%	2.1%	1.9%
No tutoring experience	0.2%	1.0%	0.6%
Less than 6 months experience	58.5%	59.5%	59.0%
Less than 12 months experience	7.7%	6.3%	7.0%
1–2 years experience	0.8%	0.5%	0.7%
3–4 years experience	-	0.1%	0.1%
5–10 years experience	0.1%	0.1%	0.1%
11–15 years experience	0.4%	-	0.2%
Missing tutor experience	32.2%	32.5%	32.4%
Batch 1	33.5%	31.9%	32.7%
Batch 2	21.9%	23.2%	22.5%
Batch 3	16.1%	15.4%	15.8%
Batch 4	7.6%	8.7%	8.2%
Batch 5	6.3%	7.5%	6.9%
Batch 6	7.5%	5.1%	6.3%
Batch 7	3.4%	3.3%	3.3%

Batch 8	3.8%	4.9%	4.3%
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Outcomes and analysis

The results of the primary and secondary analyses are presented in Table 9 and Figure 3. The full regression tables can be found in Appendix E.

Primary analysis (row 1)

There was no evidence that the treatment performed better or worse than the control in terms of impacting pupil attendance. The attendance rate for the full analytical sample was 56.9% (SD 30.08). For the intervention group it was 56.8% (SD 29.96) and for the control group it was 57.0% (SD 30.22). Compared to the control group, the pre-specified model found a difference of 0.74 percentage points (95% CI: -1.86pp, 3.38pp; Hedges' $g = 0.02$) for the intervention, which is not statistically significant at conventional significance levels.

On average, pupils attended slightly more than half of the sessions originally bought by the schools. The missed sessions may have been for a variety of reasons, ranging from a possible TP effect (different TPs have different attendance rates) to schools re-assigning some tutoring sessions to other pupils.

Secondary analysis (row 2)

There was no evidence that the treatment performed better or worse than the control in terms of impacting pupil attendance for PP pupils. The secondary analysis focused on the tutoring attendance rate for the PP subgroup. The attendance rate for the full analytical sample of PP pupils was 54.9% (SD 29.71). For the intervention group it was 55.1% (SD 29.54) and for the control group it was 54.7% (SD 29.54).

When constricting the sample to PP pupils only, the pre-specified model finds a difference of 1.03 percentage points (95% CI: -1.92pp, 3.94pp; Hedges' $g = 0.03$) for the intervention compared to the control group, which is not statistically significant at conventional significance levels.

Exploratory analysis (rows 3 and 4)

Given the occurrence of some tutors being randomised twice, exploratory analyses were conducted to check the robustness of results in the case where (1) all tutors with duplicate IDs were excluded entirely (row 3) and (2) where all instances of duplicated tutors were kept in the sample. Using the same pre-specified model as primary analysis, the results remained consistent—no significant treatment effect on pupil attendance.

Exploratory analysis—CACE analysis

BIT data on tutors' engagement with the intervention shows that 60% of tutors had been recorded as completing the materials provided for the intervention (see **IPE findings**). For this reason, additional analysis was carried out to estimate the complier average causal effect (CACE).

Unfortunately, compliance was only measured at the aggregate level: it is not known which tutors in the treatment group engaged with the intervention and which ones did not. However, as non-compliance was one-sided, Bloom's formula¹² (intention to treat parameter divided by the compliance rate) can be used to assess the effect of the intervention on those that engaged fully with the materials. This finds a 1.2pp increase in attendance in the intervention group versus

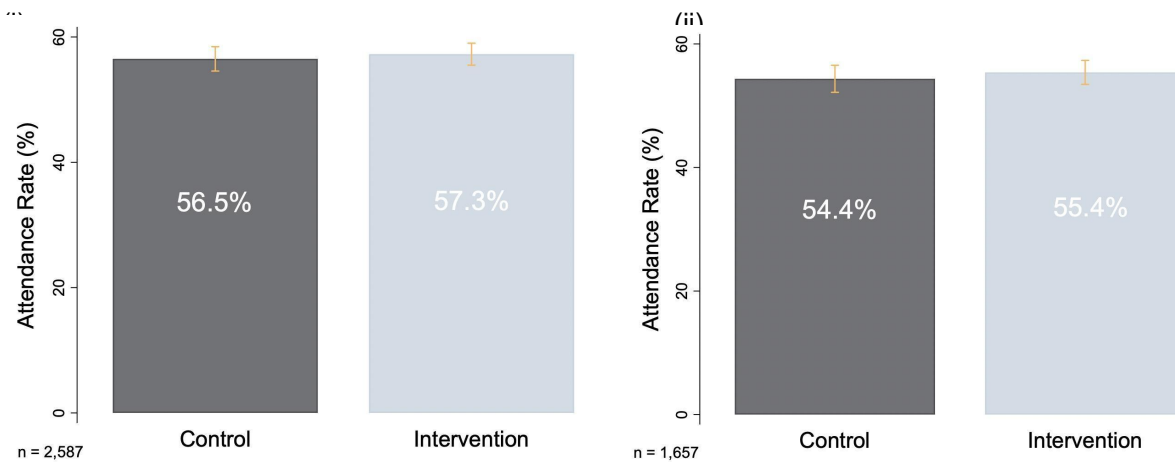
¹² Using formula [6] $t_c = t/\pi_c$ from Hesser (2020; derived from Bloom, 1984) whereby t_c is the estimated effect of the intervention for those that complied, t is equal to the estimated overall mean effect, and π_c is the rate of compliance (% of tutors in the intervention group that had been recorded as completing the materials provided).

the control group for those that complied with the intervention (95% CI: -3.11pp, 5.58pp). As for the main analysis, this is not statistically significant at conventional levels.

Table 9: Primary, secondary, and exploratory analysis

	Unadjusted means			Effect size		
	Intervention group		Control group			
Outcome	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Hedges' g (95% CI)	p-value
Primary Attendance (total n=2,587)	1,339 (0)	56.8% (55.2%, 58.4%)	1,248 (0)	57.0% (55.3%, 58.7%)	0.02 (-0.06, 0.11)	0.578
Secondary Attendance (Pupil Premium) (total n=1,657)	846 (0)	55.1% (53.1%, 57.1%)	811 (0)	54.7% (52.7%, 56.7%)	0.03 (-0.06, 0.13)	0.488
Exploratory I All duplicates excluded	1,315 (0)	56.8% (55.1%, 58.4%)	1,187 (0)	57.1% (55.4%, 58.7%)	0.02 (-0.07, 0.11)	0.655
Exploratory II All duplicates included	1,352 (0)	56.7% (55.3%, 58.6%)	1,265 (0)	57.0% (55.3%, 58.6%)	0.02 (-0.07, 0.10)	0.690

Figure 3: Bar graphs for treatment effect of the intervention for (i) attendance rate for the entire sample of pupils and (ii) attendance rate for PP pupils



** p < 0.01, * p < 0.05.

Implementation

RQ1 (compliance): What proportion of tutors in the treatment group started and completed the activity?

RQ2 (reach): How many tutors partially completed the activity?¹³

A total of 1,317 tutors received the activity of which 793 (60%) completed the activity in full; a further 410 partially completed the activity, meaning that 91% of all tutors receiving the intervention either partially or wholly completed the activity.

Table 10 details the number of tutors receiving the activity, the full completions, and the partial completions.

Table 10: Descriptive statistics on delivery, open, and click rates

	Action Tutoring	CoachBright	The Access Project	Total
Number of recipients	821	296	200	1,317
Full completions	515 (62.7%)	179 (60.5%)	99 (49.5%)	793 (60.2%)
Full and partial completions	766 (93.3%)	273 (92.2%)	164 (82.0%)	1,203 (91.3%)

RQ 3 (quality): How did tutors and TP staff experience the intervention?

Feedback from both TPs and tutors was largely positive, highlighting the quality of the intervention as well as the ease of delivery as particular strengths. TPs were in favour of interventions that help tutors develop their relationship-building

¹³ A partial completion is defined as loading the first page of the activity and clicking the button to progress from the first screen to the next screen. This is a relatively low threshold but was the only metric available through the platform that hosted the intervention activity.

skills as they perceive this to be an area that tutors, and in particular volunteer tutors, find particularly daunting. TPs described the focus on relationship building as reassuring for the tutors and useful from their perspective.

'I think it's reassuring for our tutors to feel like they're equipped with that, because it's not exactly being able to explain quadratic equations, it's something that's softer and feels more individual' (TP).

More specifically, **TPs liked the idea of equipping tutors with specific techniques for relationship-building (as was done in the second part of the activity)** as they think it is important to break this down into clear steps that the tutor can take. There was some questioning of the intervention and how tangible the advice provided by the activity would be, especially for tutors who had not yet met their tutee.

Tutor feedback was also positive, with tutors reflecting that the purpose of the activity was clear and valuable, and tutors agreed on the importance of building rapport early on with tutees.

'If you understand somebody's really into football, at least you've got something every week to make it a little bit more personal before you get down to the motivational aspects' (tutor).

Tutors' perception of the need for the intervention varied with some tutors finding training specific to relationship-building very valuable and others, predominantly more experienced tutors or tutors with a background in teaching, feeling like this would come naturally to them. Tutors liked how the activity encouraged them to reflect on the way they would go about relationship building and the tips provided.

'Maybe occasionally I'm just a little bit too focused on the subject, which is the right thing probably, but it's reminding me to just be aware of where the pupils are and how they're feeling that day and all that sort of stuff' (tutor).

One tutor felt that the activity had complemented other training provided by their TP by providing more specific strategies to follow. More experienced tutors mentioned how the content was not new to them but appreciated how it reinforced their ideas and experience and thus supported the intervention as a refresher of the important features of relationship-building. Tutors provided positive feedback on the specific scenarios presented in the activity and the specific strategies provided, however, some found it hard to distinguish between different induction and training materials provided.

Following some initial concerns that it would be difficult to implement the activity, **TPs generally found it very easy and felt well supported by BIT's project team.**

'I think in terms of the workload especially it has been a real positive shock for us at how little you needed for us to be doing, which has really been helpful and great' (TP).

One TP did note that at points the turnaround time had been quick and it would have liked to have received more notice to help them better fit the delivery of the intervention in with the rest of their work schedule.

Tutors found the tool easy to use and follow, highlighting that the length of the activity (around 20 minutes) and the fact it was online made it easy for them to embed it in their schedule. Some tutors did comment that they would have liked to have also been able to receive feedback and hear from other tutors first-hand following the activity.

'Yes, the only thing that I would benefit from is maybe a bit more constructive feedback maybe on my part, so once I've put those things I've learnt into practice, maybe feedback from other people, or other tutors. Maybe make it a bit more of a collective, rather than something that's just solely online' (tutor).

Overall, tutors perceived the intervention to have contributed to positive developments in the early stages of relationship building, however, it was evident that the outcomes were different for different pupils. Tutors noted how engaged pupils responded well to the relationship building strategies, but how engagement and attendance could equally be barriers to building a relationship from the start. In this way, pupils needed to have a degree of engagement and attendance for the tutors to implement the ideas suggested and thus tutors struggled to reach disengaged pupils from the outset. Tutors also noted that relationship development was also affected by the timing of the sessions, stating that pupils attending after school sessions may have struggled to focus on building a relationship following a day of learning at school.

'So I would say it was effective to a certain extent but I think I would need to implement more steps, more things to do. Since—as I have mentioned earlier—my session is from three o'clock till four o'clock, so when I ask them how their week was, I could notice that they were tired and they just want to finish the session and just go home' (tutor).

For tutees who engaged from the outset, tutors observed more openness over time, a growth in confidence, and the sharing of more personal information. Tutors noted that the regular questions about school and their subject learning were more difficult in the beginning, with long response times, but that after the first few weeks, pupils began responding immediately and providing more substantial answers to questions posed by the tutor.

'A couple weeks in, I saw that they grew in confidence. They would be willing. They'd give me a longer answer, "Oh, we've got this. Oh we've got exams this week." So that was definitely nice to see that there was progress in that sense' (tutor).

The online delivery model of tuition was considered challenging in the context of relationship building. Tutors stated that the online delivery made it more difficult to read body language and to interpret pauses in communication, meaning that it could be difficult to assess whether a strategy was effective early on. Furthermore, tutors highlighted that the functionality of the online delivery model may have impeded relationship development as some pupils opted not to have their camera on and to communicate via the chat function rather than through the microphone. While this was seemingly not an issue for delivering the actual tutoring session, it did make the ice breakers and building comfortable relationships more challenging for tutors.

RQ 4 (fidelity): How was the intervention implemented?

Overall, TPs implemented the activity as described. TPs had a good understanding of the purpose of the activity and the general structure, and were able to highlight the importance of sending reminders at the appropriate intervals. It was noted, however, that TPs may not have gone through the activity themselves prior to sending out to tutors, and this was recommended as a useful process for delivery partners to do in the future.

The activity was also mostly implemented as described by tutors, although there was a range in tutors' ability to recall the strategy they had designed as part of their activity. On one end of the spectrum, tutors could recall the specific strategy they designed and how they had implemented it. Examples included checking in with tutees to see how their proceeding week had gone for them, or to expect the relationship to take time to develop and investing time over a longer period.

'[My strategy was called] 'The Long Road', what I was basically saying is you don't build a relationship in five minutes at the beginning of the first session. The fact is that if you turn up every week, you listen to what they're saying and it's authentic, it will take time to build up trust and that relationship and that's fine. That was my strategy, just to keep going' (tutor).

At the other end of the spectrum, some tutors were not able to recall specific strategies, but even in these cases, tutors tended to still be able to recall the advice provided in the activity.

As well as highlighting specific strategies, tutors described the ways in which they had embedded the guidance in their tutoring. Examples of this included (1) asking tutees about their interests and linking the content of their sessions and the materials to these, (2) asking tutees at the start of each session how their week had been, and (3) acknowledging any mistakes made as a tutor. One tutor felt that being new as a tutor, they particularly liked this idea and felt that their pupils reacted well to it.

'We try and get them engaged with reading for pleasure, and try and find material that they will enjoy. I've found out quite a lot about one of my pupils, just through talking to him and asking what his interests are, and then I can direct those interests into material' (tutor).

Tutors did not always know how much time was appropriate to spend on relationship building: one tutor mentioned that they never wanted to go over five minutes whereas another tutor, for example, would have preferred to

have dedicated their whole first session to rapport building. One tutor felt that due to the time of day of their sessions, usually at the end of the day, the pupils wanted to get the session over and done with.

'I'd try and limit it to five minutes, but it would also never go to more. If I asked a couple of questions, they might give me a couple of sentences maximum answer. So it wouldn't ever really run over that five-minute time anyway' (tutor).

TPs made minor adaptations to the content and formatting of communications sent to their tutors in order for the emails to be consistent with those the tutors were accustomed to receiving from the TP. Furthermore, some TPs reduced the number of other emails and requests being sent or adapted the timing of the intervention emails to fit in with their communication schedules. In some instances, TPs did not share their 'business as usual' training with tutors in the treatment group so as not to over-burden them with emails and tasks.

'We had one week where I was sending this out to a group of tutors, but also at a {'business as usual'} training session on something else, and I ended up making the decision that they just wouldn't get the {'business as usual'} because it would be contradictory, it wouldn't make sense to them' (TP).

There was also variation in the exact timing of the activity distribution. Where some TPs delivered it at induction training and well in advance of the tutor being matched with their tutee, others delivered the activity after tutors had already started their tutoring sessions.

RQ 5 (mechanisms): What were the barriers and facilitators to implementation and delivery?

Implementation and delivery were both facilitated and hindered by TP communication and the timing of the activity. The main facilitator was the ease with which TPs were able to schedule communications to tutors via a customer relationship management system or equivalent (for example, Mailchimp). TPs noted that this was a success of this intervention as it aligned with the way they already communicated with tutors.

'It is relatively easy to do that because we have a series of emails that go out anyway relating to our CRM system for the stage at which the volunteers are in the matching process' (TP).

There were two barriers to delivery identified by TPs. First, there was some confusion about the criteria to use when selecting tutors for randomisation.

'I wasn't totally clear on the criteria that were necessary to apply to decide who was going to be receiving the intervention ... and I was slightly uncertain on how long the batches would continue for' (TP).

Second, in some cases, **TPs were unable to deliver the intervention to a tutor because they had withdrawn from the organisation**. Drop-outs were manually removed from the mailing list, however, this was seen as increasing the room for human error whereby a withdrawn tutor was sent the activity to complete. There were also cases of tutors completing the activity but later not being matched with a tutee.

Timing of the activity served as either a facilitator or a barrier to intervention success. In some cases, tutors completed the activity well in advance of being matched with their tutee: this was viewed as too early as they did not know what their tutee would be like.

'I did this training back in February. It was some time ago ... In terms of how those strategies will work in practice, until I've gone through that, it's going to be difficult to say how well it worked' (tutor).

Some tutors struggled to recall the training and were unsure of how to implement what they had learned when there were gaps between conducting the intervention and commencing tutoring sessions. In contrast, other tutors completed the activity either immediately before their tutoring sessions commenced or after a few sessions, both of which seemed to provide tutors with confidence that they could implement the strategies.

Finally, tutee attendance at sessions was necessary for tutors to be able to implement what they had learnt from the activity. These tutors were engaged with the activity itself but commented that they had not had the opportunity to ask tutees the questions from the activities, or to develop a relationship.

'One of my pupils, he has not turned up for quite a few sessions, so there isn't much of a relationship between us there. I haven't had the opportunity to ask him these questions, and he hasn't really had much opportunity to tell me about himself' (tutor).

Formative findings

Perhaps expectedly, the TPs provided suggestions for improvements to the implementation of the intervention to tutors, and tutors provided suggestions for improvement to the quality of the activity and the way it is used with pupils. Specific TP and tutor feedback focused on:

1. **Improving TPs' ability to track completions and encourage completion through different channels.** All providers mentioned that they would have preferred to have been able to track completions so as to only target their email reminders to those tutors who were yet to complete the activity, to minimise the number of emails being sent (this was not possible during the trial due to GDPR considerations). The lack of this ability led to some confusion amongst tutors who had already completed the activity.

'One thing that troubled me slightly was that I wasn't able to see how much progress tutors had made on the training, and which tutors hadn't completed it. Reason being, usually I would make sure that anyone who had completed an action wasn't getting a reminder, because that is always something that our volunteers find really aggravating, as we all do' (TP).

2. **Providing a feedback/interaction function for tutors to follow-up with TP staff after a couple of weeks of tutoring.** TPs and tutors suggested that it would be useful to be able to feed back their reflections on the activity after having tried to implement their strategies in practice, allowing them to discuss how it went and request additional guidance if needed from the TP.

'It almost gives you a chance to look at how you're trying to connect with your pupil, and whether that's the best way to go about it—whether you need to change that strategy, and actually it doesn't work for that specific pupil or pupils' (tutor).

It was felt that this may help tutors adapt their strategies based on actual experience, which was thought to be particularly useful for less experienced tutors who may not have the confidence to adapt strategies on their own. It was also suggested that it would be useful for TPs to have access to the tutor responses to the activity, so that they could be aware of the tutor's approach and help create a dialogue with tutors throughout the process. Another related suggestion was for tutors to be able to communicate with one another as online tutoring was noted to be a lonely experience for some.

'On my wish list at the minute, some more interaction with other tutors to discuss, how did you find teaching this or have you done this?—the interaction you'd naturally get in a work environment when you chat these things over. It does feel a little bit isolated' (tutor).

3. **Encouraging tutors to complete the activity immediately after being matched with their pupils.** Tutors stated that ideally the activity would be conducted just after they have been matched with their tutee and within the first few sessions at the latest. These tutors felt it was best for them to have met their tutee at least once before completing the activity to experience the setting and get a first impression of their tutee. Tutors who completed the training activity early on stated that by the time they met with their tutees, the content of the training was no longer in the front of their mind.

'The activity should be scheduled once you have a student assigned. Then, you can implement it straightaway. What I'm suffering from is a lot of these training activities happened very early on in the process. If there's a delay before the student gets assigned then that information, that training, is very much at the back of your mind, as we're finding today. I've got a six- or seven-week delay before the student comes on board. That training is not necessarily front of mind' (tutor).

- 4. Providing the ability for tutors to refer back to the activity or complete it again to change their strategy.** Some tutors expressed a desire to be able to have the activity on hand so that they can review their learning and understanding as they develop a relationship with different tutees. This was seen as a particularly useful suggestion for tutors who had a delay between completing the activity and delivering it in practice.

'I think [...] the activity itself was very useful; full of good tips, tricks, hints, whatever you want to call them. I guess my challenge is to, now, put them into practice some time later when the student comes on board. Now, I've made some notes based on that training that I can refer back to. I think, if I hadn't done that then I would have to go round the loop again' (tutor).

- 5. Further developing the strategies provided by experienced tutors.** Tutors stated that it would be useful to see examples of strategies and tips either from those who have already completed the activity or from tutors with more relationship building experience.

'The only thing I would change is adding more previous answers or answers from maybe experienced tutors' (tutor).

Furthermore, although the examples in the activity could be applied to online tutoring, tutors requested more examples that explicitly discussed the specific challenges of online tutoring.

Control group activity

The control group tutors received substantial training and preparation for their online tutoring sessions. Across the three providers there were core training activities as well as additional activities designed to support tutors develop relationships with their tutees.

The core activities across the three providers included induction sessions ranging from two hours to a full day. Induction sessions covered the programme and the syllabus, as well as safeguarding for Action Tutoring and CoachBright. The Access Project covered safeguarding through an additional online course. Induction training also included discussion of rapport building and some strategies for developing relationships with tutees.

Additional introductory activities included talks with the school and, for CoachBright, a launch event where tutors meet their pupils. CoachBright and Action Tutoring established ongoing support networks for their tutors including a mid-programme workshop, refresher training that reviewed induction training content, and a WhatsApp group so that tutors could interact with providers and one another. CoachBright also conducted a structured observation of a tutoring session for each tutor, including a session where tutors received direct feedback on their performance.

Conclusion

Pupils in both trial arms had comparable attendance rates at tutoring sessions, meaning that the relationship-building activity did no better or worse than the TP's 'business as usual' support to tutors. Findings from the IPE indicated that tutors broadly found the activity useful, finding it particularly helpful to learn some specific relationship-building strategies from other tutors.

Interpretation

This trial did not find any evidence that the relationship-building activity delivered to tutors made any significant impact on pupils' attendance rate at tutoring sessions when compared to the TP's 'business as usual' support to tutors. This may be explained by the fact that the control group in the trial received substantial support (including some guidance on building relationships with pupils), and so there was limited scope for marginal improvements.

The TPs' 'business as usual' provision was substantial and explicitly covered relationship-building. Tutors in the control group noted that their induction training had included discussions of the importance of rapport-building and even, in some cases, provided specific strategies to use with pupils. Other tutors also noted the additional support they received from their TP—such as access to WhatsApp groups with other tutors, structured observations, and feedback sessions—which may have supported their ability to build effective relationships with their pupils.

The IPE also identified a range of barriers that may have impeded the effectiveness of the activity. The first related to the specific timing of the activity. In some cases, tutors had completed the activity well in advance of being matched with their tutee and this was viewed as too early as they did not know what their tutee was like and, therefore, what types of relationship-building strategies would work particularly well for them. Some tutors also reported struggling to remember the activity and the strategy that they had developed when they came to actually conducting their tutoring sessions. This contrasted to some tutors that completed the activity close to the commencement of their sessions and their reported confidence in implementing some of the strategies they learnt.

The second set of barriers related to pupil attendance itself. The intervention as designed required a base level of engagement from pupils in order for tutors to implement the strategies that they had learnt in the online activity. However, with average attendance at 57%—a lower level than 'normal delivery', possibly due to the impact of school closures—some tutors noted this gave them limited opportunities to build relationships with their pupils. This was deemed to be a particular issue for shy pupils and pupils that were disengaged in early sessions.

The third set of barriers related to the design of the relationship-building activity. While many tutors did find the activity useful, some noted that they found it difficult to implement the relationship-building strategies in an online setting. The strategies included in the activity had been selected carefully to be appropriate for both in-person and online tutoring, but it is possible that they were not sufficiently tailored for an online context.

Despite the substantial support already received by tutors, and the barriers identified above, the IPE did find evidence that tutors found the relationship-building activity to be clear, valuable, and a helpful reminder of the importance of relationship-building. The perceived need for the activity varied with tutor experience, but even more experienced tutors noted how the content reinforced their ideas and experience in relationship-building, and still found it useful. As such, the activity may have been helpful for tutors that were particularly inexperienced or who had received less training and support. However, this is speculation and is not a hypothesis that could be explored with the sample in this trial.

Limitations

It was not possible to ensure that every tutor in the treatment group completed the activity, with 30% of the treatment group partially completing the activity and a further 10% not engaging with the activity at all. Unfortunately, it was also not possible to link compliance with the activity with the pupil attendance data. This meant that it was not possible to conduct a two-stage least-squares instrumental variable analysis (in which individual tutors' compliance would have been instrumented with treatment assignment).

As noted above, the 'business as usual' provision from the TPs was already relatively strong, with all tutors receiving at least minimal guidance on how to build relationships with their pupils. As such, the trial tested the additional impact of this one particular activity rather than guidance on relationship-building in general.

At the analysis stage, a small number of implementation errors were identified. These involved TPs incorrectly administering the randomisation in some cases, leading to a number of tutors being re-randomised into the trial. However, after thorough investigation, this was assessed to only affect less than 3% of the total sample. Further robustness checks illustrated that the way in which these duplicates were handled at analysis would not have changed the headline results.

Recommendations

This trial tested the impact of a particular activity aiming to support tutors to improve pupil-tutor relationships, not the impact of relationship-building guidance in general. Given the findings in the IPE, it is still strongly recommended for TPs to continue to prioritise tutors' relationship-building skills. Given the challenge of building effective relationships online, this is particularly important.

For any TP seeking to better support its tutors to develop relationships with their pupils, based on the findings in the IPE, it may be useful to factor in the following principles:

1. Provide tutors with tried-and-tested strategies for building relationships with pupils. These are likely to be particularly impactful if delivered by an experienced tutor.
2. Ensure that tutors are equipped with relationship-building strategies specifically tailored to an online tutoring environment.
3. Provide tutors with clear expectations of how much time to dedicate to relationship-building activities.
4. As far as possible, share relationship-building activities with tutors close to the start of their tutoring sessions to ensure the content is fresh in their mind.
5. Ensure that guidance on relationship-building is easily accessible and that tutors can refer back to the training when they begin their sessions.

Future research and publications

Improving attendance, and subsequently academic outcomes, is the ultimate goal of relationship-building interventions. However, it would be useful for future research to explore the impact of these interventions on intermediary outcomes, such as perceptions of the pupil-tutor relationship. Unfortunately, it was not possible to collect this data in this trial due to limited capacity for collecting new sources of data. In the future, BIT would recommend that trials evaluating relationship-building interventions include a pupil and tutor survey that measures the perceived strength of their relationships, and that this is the secondary outcome measure.

Future research in this area should also consider ways to increase compliance with the intervention. In particular, it would be useful for the delivery partner to have a record of the tutors that have not yet completed the activity to allow for more targeted reminders. This was not possible in this trial (due to GDPR considerations) meaning that all reminders were sent to all tutors in the treatment group, irrespective of whether they had completed the activity or not.

As well as increasing compliance in general, future research could also seek to link compliance data with other sources of tutor and pupil data. This would help to identify the characteristics of the tutors that engage with the activity and would

also open the possibility of exploring whether the intervention works particularly well for specific subgroups of tutors (for example, inexperienced tutors).

Finally, it should be noted that BIT conducted a separate trial testing a different relationship-building intervention as part of the NTP. The intervention, Snap Survey, involved both tutors and pupils completing an online survey which provided feedback to tutors and pupils on their similarities. The trial found that pupils in the treatment group had attendance that was 4.2 percentage points higher than pupils in the control group. Given this positive result, it is recommended that future research explores Snap Survey rather than the relationship-building activity described in this report. The full report for the Snap Survey trial can be found here: <https://educationendowmentfoundation.org.uk/projects-and-evaluation/projects/national-tutoring-programme-nimble-rcts>

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Appendix A: Intervention materials

Figure 1: Part 1 of activity - reflecting on a time the tutor connected with someone

Connecting With Pupils



10%

A time you connected with someone

To start, think of a time you connected with someone - ideally a pupil, but it can be someone else. Maybe you shared a joke, or a conversation that helped you get to know someone better. Or maybe a time you were able to understand another person's perspective.

When you've got someone in mind, click 'Continue'.

What was their first name?

Where were you?

Figure 2: Part 2 of activity - learning relationship-building strategies used by other tutors

Strategy 1: Positive routines for the start of lessons

"Greetings and first impressions are important, so smile! I usually begin with a warm, natural and welcoming conversation. I'll then ask for one good and one not so good thing that might have happened that week - it can be anything from the weather to sport results to lessons. I always give an answer first which helps to build a trusting environment. It lets them know a bit about me, and I get to hear about their week (and can tailor the lesson accordingly). Only after all of this will we begin talking about today's lesson content."

- Kawthar

Imagine you had to describe the strategy in one sentence for another tutor. What would you say?

Do you think this strategy will work with your pupils?

☐ Definitely not

☐ Probably not

☐ Probably

☐ Definitely

Have you ever used a strategy like this before?

☐ Never

☐ Sometimes

Figure 3: Part 3 of activity - developing a personal relationship-building strategy

Tell us about a strategy you will use this term

Nearly done! Finally, we want you to tell us about a strategy you're going to use to help create a connection with your pupils. It needs to be something you think will work for you and your pupils, and might be:

- Something you've used before that works well
- Something you've just learned (maybe with a personal twist)
- Something you've been waiting to try out

Research suggests that explaining a personal strategy helps to clarify the approach in your mind and makes it more likely to work.

We may reach out in the future to see if you are happy for us to share your idea with other tutors.

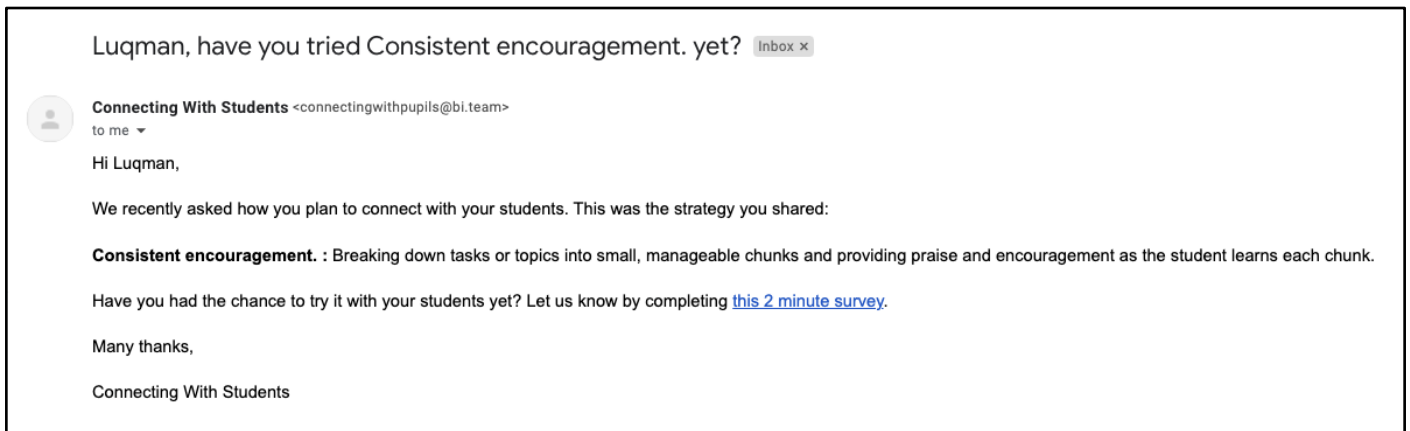
What's the name of your strategy? Invent one if you need to...

In one sentence, describe how it would work for other tutors.

Why will it work?

What's the biggest obstacle to the success of this strategy and how would you overcome it?

Figure 4: Example email sent to tutors reminding them of their personal relationship-building strategy



Appendix B: Ethical review

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 was determined to have minimal ethical risks. This was a light-touch intervention that was being delivered within an existing tutoring context, with minimal personal data collected on tutors and no personal data collected on pupils. Importantly, all of the tutors who oversaw the intervention will have been subject to screening and undergone appropriate safeguarding training delivered by their Tuition Partner (TP).

The only dimension in which the risk was identified as Medium risk relates to the nature of the data being collected. Personal, individual-level tutor data was collected for (a) all tutors that complete the online intervention, and (b) for tutors that agree to participate in the IPE. On (a), tutors were informed that this personal, individual-level data would be collected in a Privacy Notice at the start of the activity. On (b), tutors provided their explicit consent to participate in the IPE. There was an ethical concern around confidentiality, particularly because of the power dynamic between tutors and tutor providers, their employers. All personal, individual-level data collected was treated with the strictest confidence by BIT, unless safeguarding or whistleblowing concerns were raised during the interview and required disclosure in line with any applicable laws and procedures on data protection and safeguarding that BIT must comply with. Reporting outputs contained anonymised quotes and case examples which cannot 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 ensured that the tutors' employers are not able to link our findings to any particular tutor.

Table 1 highlights in orange where the current trial fell in terms of risk for different dimensions.

Table 1: Ethical review summary

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 aspects of the project are new to BIT.	BIT has no prior experience in this policy domain.

This trial did 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 registered it at the Open Science Framework (osf.io). BIT ensured the trial registry was updated with outcomes at the end of the project.

Appendix C: Data protection

Throughout the project, BIT sought to minimise the collection of personal data. BIT performed the randomisation of tutors using BIT-ID numbers rather than names, and shared the randomisation results (including randomisation batch number) with TPs; TPs shared the intervention with the intervention tutors, so that we did not need contact details for this purpose. BIT also ensured that no personal data was visible to BIT team members during the video calls BIT had with TPs to support the correct implementation of the randomisation.

BIT did need to collect personal data from the tutors who completed the intervention, as well as from involved TP staff. A privacy notice was hosted on the intervention website through which this personal data is collected. BIT collected the following information associated with these individual tutors:

- Tutor email addresses (so that we could administer the subsequent intervention reminders, and so that we could recruit and schedule TP staff case study interviews)
- Tutor names (so that the intervention reminders and interview recruitment correspondence could 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 allowed BIT to administer the intervention reminders and schedule and conduct interviews with tutors (as indicated above), as well as helping identify how many tutors completed the intervention and when the intervention was administered. BIT also collected personal data (name and email address) from those tutoring staff who took part in IPE interviews.

Data for the impact analysis was collected from NFER against pupil IDs and tutor IDs rather than names. Ahead of this data transfer, TPs shared 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 integrated these data into their relational database, and shared with BIT the data we needed for our impact analysis, against newly-generated tutor and pupil ID numbers rather than names. Both the pupil and tutor tables contained the tutor's ID number, BIT trial randomisation assignment and randomisation batch number.

BIT performed a risk assessment analysis and concluded that these data were not considered to be personal. Nevertheless, BIT included a sentence in our privacy notice for intervention tutors (hosted on our intervention website) detailing the data being collected from NFER, letting tutors know it was in anonymised form and that BIT was not linking it with the personal data collected from them.

Additional data protection information

1. Legal bases for data processing

LEGITIMATE INTERESTS: BIT's lawful basis for processing personal data was legitimate interests (as per Article 6 (1) (f) of the GDPR) and it was considered that participants' interests and fundamental rights did not override those legitimate interests.

It was necessary in BIT's 'legitimate interests' to process the personal data identified above in order to deliver a meaningful RCT that had been commissioned by EEF (commercial interests). The research project fulfilled BIT's core business aims including undertaking research, evaluation and information activities in sectors that will deliver social impact. This project had broader societal benefits; it tested 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 minimised the collection of personal data wherever possible in this project. BIT collected data for the impact evaluation against pupil and tutor IDs rather than names. BIT performed a risk assessment analysis and concluded that we did not consider these data to be personal.

BIT did, however, need to collect personal data from the tutors who completed the intervention (for the purposes of: administering the intervention reminders; recruiting and scheduling TP staff case study interviews; helping identify how many tutors have completed the intervention; and allowing BIT to see when the intervention was administered, as described above). A privacy notice was hosted on the intervention website through which this personal data is collected, which explained what personal data was collected and why, BIT's legal basis for doing so, who had access to the data, BIT's data security arrangements and BIT's plans for data retention. BIT appointed a Data Protection Officer (DPO) who was responsible for overseeing questions in relation to this privacy notice. The privacy notice contained the DPO's contact details, and informed 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 asked these tutors to make sure the details they provide are accurate and up to date, and to let BIT know about any changes as soon as possible.

As stated above, all personal data collected as part of the study was 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 did not use any personal data in any report arising from this project. BIT was collecting and processing personal data solely for the purposes of proper delivery, management and evaluation of the project.

2.1. Data security

BIT took reasonable steps to protect personal information and followed 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, BIT implemented appropriate technical and organisational measures to ensure a level of security appropriate to the risk of processing.

BIT ensured that those who had permanent or regular access to personal data, or were involved in the processing of personal data, were trained and informed of their rights and responsibilities when processing personal data. BIT provided such access on a need-to-know basis, and had measures in place which were designed to remove that access once it was no longer required.

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

BIT put in place procedures to deal with any suspected personal data breach and notified participants and any applicable regulator of a breach where we were legally required to do so.

2.2. All parties with access to the data

The personal data that BIT collected was 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. BIT remain responsible for personal information as the controller; and
- any third party to whom BIT are proposing to sell or transfer some or all of our business or assets.

BIT 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

BIT did 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 BIT collected (about intervention tutors via the intervention website): Behavioural Insights Ltd (the legal name of Behavioural Insights Team (BIT)) was the controller and was responsible for the personal data.

As noted in the section above, BIT 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 was detailed in the privacy notice on our intervention website.

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

Appendix D: Project team

Project team member	Project role
Lal Chadeesingh	Principal Investigator
Dr Giulia Tagliaferri	Quantitative Lead (RCT design and analysis)
Dr Matthew Holt	Qualitative Lead (IPE design and analysis)
Dr Alex Sutherland	Quality Assurance and Senior Project Advisor
Anna Bird	Quality Assurance and Senior Project Advisor
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
Stefan Kelly	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 E: Impact analysis technical detail

Primary outcome model specification

To test the effect of the intervention on the proportion of hours of tutoring attended, we used the following OLS regression model:

$$Y_i = \alpha + \beta_T Treatment_i + \beta_C Covariates_i + \eta \cdot Stratifier_i + \epsilon_i; \epsilon_i \sim N(0, \sigma^2)$$

- Y_i is the outcome of interest (proportion of hours of tutoring attended, defined as the number of sessions attended divided by the number of sessions purchased [percentage 0-100]) for each pupil.
- $Treatment_i$ is a dummy variable indicating which treatment group tutors were assigned to (0 = Control group, 1 = Treatment group).
- $Stratifier_i$ is a fixed-effects variable that refers to the tutoring partner interacted by the batch number.
- $Covariates_i$
 - year group: a set of dummies, one for each year group
 - main subject of tutoring: a set of dummies, one for each subject of tutoring
 - tutor gender
- ϵ_i is the error term, clustered at the tutor level.

Following the trial protocol, all planned covariates in the trial protocol were checked for missing data pre-analysis, and those with missingness greater than 5% were removed from the model. This applied to PP status (7.5%), SEND status (28.1%) and tutor experience (36.4%). For this reason, they were not included in the model.

Table 2 provides the full results for the primary analysis (col. (1) and secondary analysis (col. (2)). The secondary analysis uses the same model and outcome as the primary analysis, but it restricts the sample to PP pupils.

The impact estimates as effect sizes as $\hat{\beta}_T$ with CI are reported in the main text. For comparability between EEF projects and with the wider literature, BIT also report standardised effect sizes calculations using Hedges' g (1981). Hedges' g is used by both the What Works Clearinghouse and Campbell Collaboration, hence it is a suitable choice for these comparisons. Hedge's g is a weighted average of the variance of both groups, not the estimate of the variance of all individuals pooled (See Coe, 2002). Following the EEF Statistical Guidance, we calculated Hedge's g as:

$$ES = \frac{M_1 - M_2}{SD_{pooled}^*}$$

Where,

- M_1 is the mean value of the outcome in the control group
- M_2 is the mean value of the outcome in the treatment group
- $SD_{pooled}^* = \sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}}$

Where, s_1^2 is the variance of group 1; and equally defined for the control group n_2 . n_1 is the number of individuals in group 1; and equally defined for the control group. The difference in means for each outcome variable will be recovered from the relevant regression equation above ($\hat{\beta}_T$). Ninety-five per cent confidence intervals (95% CIs) of the effect size will be estimated by inputting the upper and lower confidence limits from the regression model into the effect size formula.

The main analyst at BIT was not blinded to group allocation when doing the analysis (they knew which arm each tutor in the dataset was allocated to). However, a second independent analyst re-analysed the trial under blind allocation of treatment groups to quality assure results.

Table 2 Primary and secondary analysis, OLS regression coefficients (standard errors in parentheses)

	(1) Overall proportion of hours of tutoring attended	(2) Proportion of hours of tutoring attended for PP Students
Treatment (reference category is Control)		
Intervention	0.7 (1.3)	1.0 (1.5)
School year (reference category is Year 10)		
Year 4	56.5** (3.8)	
Year 5	26.2** (2.0)	26.0** (2.1)
Year 6	26.9** (3.5)	29.8** (3.8)
Year 7	12.1** (3.0)	12.6** (3.1)
Year 8	-84.3**	

	(5.3)	
Year 9	8.3*	9.9*
	(3.7)	(4.6)
Year 11	-8.8**	-12.1**
	(1.9)	(2.1)
Main subject of tutoring (reference category is English)		
Maths	-5.2**	-5.5**
	(1.4)	(1.6)
Science	-2.6	0.6
	(2.8)	(3.4)
Gender of tutor (reference category is female)		
Male	2.0	1.6
	(1.5)	(1.6)
Batch of randomisation*TP fixed effects	Yes	Yes
Observations	2,587	1,657
R ²	0.2	0.2

* p<0.05; ** p<0.01

Empty cells occur where there are no observations

Table 3: Exploratory analysis, OLS regression coefficients (standard errors in parentheses)

	(1) Proportion of hours of tutoring attended (duplicates excluded)	(2) Proportion of hours of tutoring attended (duplicates included)
Treatment (reference category is Control)		
Intervention	0.6 (1.4)	0.5 (1.3)
School year (reference category is Year 10)		
Year 4	56.8** (3.8)	56.5** (3.8)
Year 5	26.4** (2.0)	26.1** (1.9)
Year 6	26.9** (3.5)	26.7** (3.5)
Year 7	12.2**	12.0**

	(3.0)	(3.0)
Year 8	-84.3**	-84.3**
	(5.3)	(5.3)
Year 9	8.3*	8.5*
	(3.7)	(3.6)
Year 11	-8.8**	-9.0**
	(1.9)	(1.9)
Main subject of tutoring		
(reference category is English)		
Maths	-5.2**	-5.0**
	(1.4)	(1.4)
Science	-2.6	-2.6
	(2.8)	(2.8)
Gender of tutor		
(reference category is female)		
Male	2.0	1.9
	(1.5)	(1.4)
Batch of randomisation*TP fixed effects	Yes	Yes
Observations	2,502	2,617

R ²	0.2	0.2
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* p<0.05; ** p<0.01

Appendix F: IPE analysis technical detail

The overall mixed method approach was selected to complement the impact evaluation by providing context, depth and explanatory power. Where the impact evaluation focused on whether the intervention worked, the IPE methods were selected to understand why and how the intervention worked or did not work. More specifically, the semi-structured interview with providers allowed researchers to better understand project delivery in relation to programme aims and objectives, practicalities of delivery, technical capabilities and communication with schools and pupils. This provided rich context with which to assess implementation alongside the attendance data collected in the impact evaluation. Provider perspectives were further complemented by data collected from the survey platform which allowed for the exploration of intervention implementation.

The tutor interviews provided an important opportunity to capture the perspectives and experiences of tutors who took part in the intervention, or declined to take part, and more specifically, to isolate the mechanisms that were more and less motivating for them to complete the activity. The interviews also allowed researchers to better understand the experience of pupils, through tutors, and to collect insightful suggestions for improvement for future iterations of the intervention.

Method	Research questions	Research topic	Detail
Delivery provider interviews	3.How did tutors and TP staff experience the intervention? 4.How was the intervention implemented? 5.What were the barriers and facilitators to implementation and delivery?	Quality Fidelity Mechanisms	Interview questions asked respondents to comment on whether the activity and reminders were delivered in the intended format, number and schedule. Questions also focused on perspectives of the intervention and its usefulness.
Tutor interviews with participating tutors	3.How did tutors and TP staff experience the intervention? 4.How was the intervention implemented? 5.What were the barriers and facilitators to implementation and delivery?	Quality Fidelity Mechanisms	Interview questions focused on the appeal of the intervention, accessibility and reminders, the appropriateness and usefulness of the intervention, perceived outcomes for tutors and pupils and suggested improvements.
Tutor interviews with declining tutors	3.How did tutors and TP staff experience the intervention? 4.How was the intervention implemented?	Quality Fidelity Mechanisms	Interview questions focused on the appeal of the intervention, accessibility and reminders, the appropriateness and usefulness of the intervention

	5.What were the barriers and facilitators to implementation and delivery?		
Survey/WebApp data	1.What proportion of tutors in the treatment group started and completed the activity? 2.How many tutors partially completed the activity? 4.How was the intervention implemented?	Compliance Reach Fidelity	Data captured activity completion, partial completion and provider implementation.

A purposive sampling approach was used for both the delivery partner interview and the tutor interviews. It was intended that one staff member from each provider would take part in an interview, selected based on their role in delivering the project. Tutors were sampled based on their participation in the trial arms, as well as their experience of tutoring and number of tutees. Each provider was responsible for identifying the tutors based on the set criteria, mostly due to BIT's priority of minimising the processing of personal data and to leverage existing relationships of tutors with their providers.

Data were collected by the evaluation team at BIT. BIT researchers conducted interviews with TPs and tutors, and the feedback forms were developed with restricted access to responses. The project delivery team was involved in disseminating recruitment materials to their staff and disseminating the materials and feedback forms to pupils, using a sample frame provided by BIT. BIT researchers also extracted data from the survey platform.

For quantitative data, descriptive statistics were generated to determine proportions of completion. For qualitative data, a thematic analysis was conducted using Braun & Clarke's¹⁴ six-step approach to thematic analysis. Specifically, researchers undertook the following steps:

Step 1: Become familiar with the data; Step 2: Generate initial codes; Step 3: Search for themes; Step 4: Review themes; Step 5: Define themes; Step 6: Write-up.

A coding frame was constructed deductively based on the research questions and topics of exploration in the interview and feedback forms. BIT researchers coded the interview transcript and feedback form responses using the following codebook:

1. Quality
 - 1.1 Positives about activity
 - 1.2 Negatives about activity
 - 1.3 Perceived outcomes on tutor/pupil relationships
 - 1.4 Perceived outcomes on pupil attendance
 - 1.5 Other perceived outcomes
 - 1.6 Suggestions for improvement

¹⁴ Virginia Braun & Victoria Clarke (2006) Using thematic analysis in psychology, *Qualitative Research in Psychology*, 3:2, 77-101, DOI: 10.1191/1478088706qp063oa

2. Fidelity

2.1 Evidence of fidelity

2.2 Adaptations to delivery by TPs

2.3 Rationale and outcomes for TP adaptation

2.4 Adaptations to delivery by tutors

2.5 Rationale and outcomes for tutor adaptation

3. Mechanisms

4.1 Facilitators to activity uptake

4.2 Barriers to activity uptake

4.3 Facilitators to activity implementation

4.4 Barriers to activity implementation

4.5 Facilitators to pupil attendance

4.5 Barriers to pupil attendance

Researchers then conducted a thematic analysis on the coded data, inductively identifying patterns within each code and labelling themes. Themes underwent a further round of classifying, and were sorted into high-level themes and sub-themes.

Appendix G: Randomisation and analysis code

Randomisation code (R)

```
# National Tutoring Programme "RCT2 Prioritising tutor relationships"  
# Stratified Randomisation
```

```
# 0. Set up
```

```
## Load libraries
```

```
library(psych)
```

```
library(data.table)
```

```
library(dplyr)
```

```
library(TREX)
```

```
library(foreign)
```

```
## Decimal places
```

```
options(digits=4)
```

```
setBITPalette()
```

```
## Set working directory
```

```
# currentwd = "G:\\My Drive\\CHEEKY\\YH Project data folder\\[Project data] POEE2 POEE3 National Tutoring  
Programme"
```

```
# Replace with your wd for replication
```

```
## For Mac
```

```
currentwd = "/Volumes/GoogleDrive/.shortcut-targets-by-id/1AWDGzKRZk0x72Jwsz4aDR-Yal5lcj7oj/Randomisation"
```

```
setwd(currentwd)
```

```
## Set seed
```

```
set.seed(20210216) # Date of randomisation
```

```
# 1. Import dataset
```

```
## Batch 1 (Feb 15th, 2021)
```

```
#### Action tutoring
```

```
data_filepath1 = "/T1-Input/BIT-IDs_ Tutor Database with BIT-ID (Action Tutoring) (1).xlsx"
```

```
# data_filepath1 = "/T1-Input/BIT-IDs_ Tutor Database with BIT-ID (Action Tutoring).xlsx"
```

```
actionTutoring = readxl::read_xlsx(data_filepath1, 1)
```

```
actionTutoring$tutoringPartner <- "Action Tutoring"
```

```
str(actionTutoring)
```

```
#### Coach Bright
```

```
data_filepath2 = "/T1-Input/List of BIT-IDs Batch 1 [CoachBright] (1).xlsx"
```

```
# data_filepath2 = "/T1-Input/List of BIT-IDs Batch 1 [CoachBright].xlsx"
```

```
coachBright = readxl::read_xlsx(data_filepath2, 1)
```

```
coachBright$tutoringPartner <- "Coach Bright"
```

```
str(coachBright)
```

```
#### The Access Project
```

```
data_filepath3 = "/T1-Input/List of BIT IDs Batch 1 TAP.xlsx"
```

```
accessProject = readxl::read_xlsx(data_filepath3, 1)
```

```
accessProject$tutoringPartner <- "The Access Project"
```

```
str(accessProject)
```

```
#### Merge data
```

```
batch1 = rbind(actionTutoring, coachBright, accessProject)
```

```
str(batch1)
```

```
table(batch1$tutoringPartner) # descriptive of batch 1 (2 of each sample is Riz & Dave)
```

```
rizID = c("CB1000", "TAP1000", "AT1000") #Treatment
```

```
daveID = c("CB1001", "TAP1001", "AT1001") #Control
```

```
# 2. Randomisation
```

```
## Set seed
set.seed(20210216) # Randomisation for the first batch

## Riz and Dave
riz = batch1[(batch1$BITID %in% rizID),]
riz$treatment <- "Treatment"
dave = batch1[(batch1$BITID %in% daveID),]
dave$treatment <- "Control"

## Filtering out Riz and Dave
batch1 = batch1[!(batch1$BITID %in% rizID)&!(batch1$BITID %in% daveID),] #Exclude dave & riz

## Stratified randomisation by tutoring partner
batch1$treatment = stratifyRandomise(batch1$tutoringPartner,n=2)
batch1$treatment = ifelse(batch1$treatment == 1, "Treatment", "Control")

## Combine the data set with Riz and Dave
batch1 = rbind(riz, dave, batch1)

## Sort batch 1 by tutoring partner
batch1 = batch1[order(batch1$tutoringPartner),]

## Summary
gmodels::CrossTable(batch1$tutoringPartner, batch1$treatment) # Check balance by condition

# 3. Export randomisation allocation
batch1 = as.data.frame(batch1)

## Action tutoring
xlsx::write.xlsx(batch1[batch1$tutoringPartner == "Action Tutoring",], file = "/T3-
Output/ActionTutoringAllocationBatch1_levQA.xlsx",
  sheetName = "Allocation", row.names = FALSE, append = FALSE)

## Coach Bright
write.xlsx(batch1[batch1$tutoringPartner == "Coach Bright",], file = "/T3-Output/CoachBrightAllocationBatch1.xlsx",
  sheetName = "Allocation", row.names = FALSE, append = FALSE)

## The Access Project
write.xlsx(batch1[batch1$tutoringPartner == "The Access Project",], file = "/T3-
Output/TheAccessProjectAllocationBatch1.xlsx",
  sheetName = "Allocation", row.names = FALSE, append = FALSE)

Analysis Code (Stata):

clear all
ssc install distinct
* import and merge data
cd "/Volumes/GoogleDrive/.shortcut-targets-by-id/1aAVmSFszHUAVenwyxN89zNuBgqy_2iwR/T1-Input"
import excel "BIT_Duplicate Tutor File_shared.xlsx", firstrow case(lower) clear

//For the 4,291 tutors which were sent to NFER via the TP batch randomisation files, unfortunately NFER could not
match 795 (18%) of them against NFER records.
//These records can be identified within the file as they have 'N/A' recorded under their tutor gender and experience
variables.

mdesc // confirmed we also see 795 tutors with missing gender&experience, although we see 4,290 tutors, one less
than NFER state

tab dup_flag_bit //174 observations with NFER's binary indicator of whether a tutor appears twice, 87 duplicates

// TPs for RCT2: Action tutoring, coachbright, access project
```



```
keep if tpname=="Action Tutoring"|tpname=="Coach Bright"|tpname=="TAP"
distinct bit_tutor_id
//now 2,627 tutors
// need to drop first instance of duplicates before merging, ensuring the instance from the earliest batch remains
sort new_dup_tutor_id batchnumber lineno
//duplicates report new_dup_tutor_id if dup_flag_bit==1 // 74 tutors with two instances, 1 tutor with three.
//duplicates report new_dup_tutor_id batchnumber if dup_flag_bit==1 // 7 tutors duplicated within batch-provider, 1
tutor duplicated twice, will keep one of each
//duplicates drop new_dup_tutor_id batchnumber if dup_flag_bit==1, force
bysort new_dup_tutor_id batchnumber (lineno) : gen num = _n
drop if dup_flag_bit==1 & num>1
bysort new_dup_tutor_id (batchnumber): gen num2 = _n
drop if dup_flag_bit==1 & num2>1
//duplicates report new_dup_tutor_id if dup_flag_bit==1
//duplicates drop new_dup_tutor_id if dup_flag_bit==1, force
distinct
save rct2tutors.dta, replace

import excel "BIT_Pupil File_shared.xlsx", firstrow case(lower) clear
sort bit_tutor_id

save rct2pupils.dta, replace
use rct2tutors.dta, clear

merge 1:m bit_tutor_id using rct2pupils.dta
keep if _merge==3 // now have data for 4,155 pupil-tutor matches
distinct bit_tutor_id // and 1,556 tutors
//// cleaning data
*Deleting observations pre-2nd Feb 2021
generate first2 = date(first_session, "DMY")
format first2 %td
drop if first2<=td(01feb2021)
drop if missing(first_session)
distinct // now have 2,792 pupils and 1,205 tutors

* Dropping pupils who never had any sessions to attend
drop if online_bought=="0"

*How many pupils are here more than once
duplicates report pupilid // 39 pupils are in twice, no need to drop

//renaming
gen treatment=0
replace treatment=1 if rctassignment=="Treatment"
lab de treatment 0 "Control" 1 "Intervention"
lab val treatment treatment
rename bit_tutor_id tutor
rename batchnumber batch
rename tpname provider
rename main_subject subject
rename year_group yeargroup

*Missing outcome data - test to see if function of treatment
gen attendancemissing=0
replace attendancemissing=1 if online_attended_pupil=="BLANK"
reg attendancemissing treatment, robust // not a function of treatment, thus excluding obs from analysis
drop if attendancemissing==1
```

```
// Report final sample size
distinct // 2587 pupils, 1144 tutors
```

```
//building attendance outcome variable
*attendance variables imported as string, rebuilding as numeric
gen sessionsattended=.
replace sessionsattended=0 if online_attended_pupil=="0"
replace sessionsattended=1 if online_attended_pupil=="1"
replace sessionsattended=2 if online_attended_pupil=="2"
replace sessionsattended=3 if online_attended_pupil=="3"
replace sessionsattended=4 if online_attended_pupil=="4"
replace sessionsattended=5 if online_attended_pupil=="5"
replace sessionsattended=6 if online_attended_pupil=="6"
replace sessionsattended=7 if online_attended_pupil=="7"
replace sessionsattended=8 if online_attended_pupil=="8"
replace sessionsattended=9 if online_attended_pupil=="9"
replace sessionsattended=10 if online_attended_pupil=="10"
replace sessionsattended=11 if online_attended_pupil=="11"
replace sessionsattended=12 if online_attended_pupil=="12"
replace sessionsattended=13 if online_attended_pupil=="13"
replace sessionsattended=14 if online_attended_pupil=="14"
replace sessionsattended=15 if online_attended_pupil=="15"
sum sessionsattended, d // mean 8.05, sd 4.5
```

```
gen sessionsbought=.
replace sessionsbought=0 if online_bought=="0"
replace sessionsbought=1 if online_bought=="1"
replace sessionsbought=2 if online_bought=="2"
replace sessionsbought=3 if online_bought=="3"
replace sessionsbought=4 if online_bought=="4"
replace sessionsbought=5 if online_bought=="5"
replace sessionsbought=6 if online_bought=="6"
replace sessionsbought=7 if online_bought=="7"
replace sessionsbought=8 if online_bought=="8"
replace sessionsbought=9 if online_bought=="9"
replace sessionsbought=10 if online_bought=="10"
replace sessionsbought=11 if online_bought=="11"
replace sessionsbought=12 if online_bought=="12"
replace sessionsbought=13 if online_bought=="13"
replace sessionsbought=14 if online_bought=="14"
replace sessionsbought=15 if online_bought=="15"
sum sessionsbought, d // mean 14.24, sd 2.42
```

```
gen attendancerate=sessionsattended/sessionsbought
gen attendance=attendancerate*100
replace attendance=100 if attendance>100
sum attendance // mean 56.89%, sd 30.08
sum attendance if whether_pp=="Y" // mean 54.89, sd 29.71
```

```
*Complete report section about sample size
//replicating power calcs from TP - replace icc_val 0.2-0.7 for range of MDES estimates
*solving for MDES
    local alpha "0.05"
    local power "0.8"
    local c_mean "74"
    local sd = "28"
    local pupils_per_tutor "2"
    local icc_val "0.2"
```

```

local num_tutors "713"
**Run power calculations solving for minimum detectable effect size
  clustersampsi, detectabledifference mu1(`c_mean') alpha(`alpha') beta(`power') ///
    m(`pupils_per_tutor') k(`num_tutors') sd1(`sd') ///
    rho(`icc_val')

////////// calculating new MDES
// estimating ICC
loneway attendance tutor
// intraclass correlation = 0.471
loneway attendance tutor if whether_pp=="Y"
// intraclass correlation for PP = 0.43
*calculating average cluster size (average pupils per tutor)
distinct pupilid tutor // 39 pupil duplicates, ok to count twice
disp 2587/1144
//av. cluster: 2.261, round to 2 for MDES calcs
distinct pupilid tutor if whether_pp=="Y"
disp 1657/913
//av. cluster: 1.815, round to 2 for MDES calcs

*solving for MDES - Primary Outcome
  local alpha "0.05"
  local power "0.8"
  local c_mean "56.98"
  local sd = "30.08"
  local pupils_per_tutor "2"
  local icc_val "0.47"
  local num_tutors "572"
**Run power calculations solving for minimum detectable effect size
  clustersampsi, detectabledifference mu1(`c_mean') alpha(`alpha') beta(`power') ///
    m(`pupils_per_tutor') k(`num_tutors') sd1(`sd') ///
    rho(`icc_val')

*solving for MDES - Secondary Outcome (PP pupils)
*Plug in values for power components (edit these values as needed to try different scenarios)
  local alpha "0.05"
  local power "0.8"
  local c_mean "54.7"
  local sd = "29.71"
  local pupils_per_tutor "2"
  local icc_val "0.43"
  local num_tutors "457"
**Run power calculations solving for minimum detectable effect size
  clustersampsi, detectabledifference mu1(`c_mean') alpha(`alpha') beta(`power') ///
    m(`pupils_per_tutor') k(`num_tutors') sd1(`sd') ///
    rho(`icc_val')

*Complete report section about balance test (called Participant characteristics)
sort treatment
foreach v of var yeargroup subject provider batch whether* tutor_gender{
    by treatment: tab `v'
    tab `v'
}

/// primary outcome analysis - Overall sample attendance
** the interpretation of the final outcome will be "proportion of hours of tutoring attended" instead of "proportion of
tutoring sessions attended"

```

```
// Checking missingness of covariates, if missingness>5% -> removed from final model
tab whether_pp // 7.46% missing, excluded as covariate
tab whether_send // 28.1% missing, excluded as covariate
tab yeargroup // 0 missing
tab subject // 0 missing
tab tutor_gender // 0.1% missing, create dummy for missingness
gen gendermissing=0
replace gendermissing=1 if tutor_gender=="MISSING"
tab tutor_experience // 32.35% missing, excluded as covariate
tab batch // 0 missing
tab provider // 0 missing

// destring covariates for regressions
encode yeargroup, gen(year)
encode subject, gen(mainsubject)
encode tutor_gender, gen(gender)
encode provider, gen(tutorprovider)
encode pupilid, gen(pupil)

// stratifier variable
gen providerbatch=.
//AT
replace providerbatch=1 if batch==1&tutorprovider==1
replace providerbatch=2 if batch==2&tutorprovider==1
replace providerbatch=3 if batch==3&tutorprovider==1
replace providerbatch=3 if batch==4&tutorprovider==1
replace providerbatch=5 if batch==5&tutorprovider==1
replace providerbatch=6 if batch==6&tutorprovider==1
replace providerbatch=7 if batch==7&tutorprovider==1
replace providerbatch=8 if batch==8&tutorprovider==1
//CB
replace providerbatch=9 if batch==1&tutorprovider==2
replace providerbatch=10 if batch==2&tutorprovider==2
replace providerbatch=11 if batch==3&tutorprovider==2
replace providerbatch=12 if batch==4&tutorprovider==2
replace providerbatch=13 if batch==5&tutorprovider==2
replace providerbatch=14 if batch==6&tutorprovider==2
replace providerbatch=15 if batch==7&tutorprovider==2
replace providerbatch=16 if batch==8&tutorprovider==2
//TAP
replace providerbatch=17 if batch==1&tutorprovider==3
replace providerbatch=18 if batch==2&tutorprovider==3
replace providerbatch=19 if batch==3&tutorprovider==3
replace providerbatch=20 if batch==4&tutorprovider==3
replace providerbatch=21 if batch==5&tutorprovider==3
replace providerbatch=22 if batch==6&tutorprovider==3
replace providerbatch=23 if batch==7&tutorprovider==3
replace providerbatch=24 if batch==8&tutorprovider==3

tab providerbatch

lab de providerbatch 1 "AT 1" 2 "AT 2" 3 "AT 3" 4 "AT 4" 5 "AT 5" 6 "AT 6" 7 "AT 7" 8 "AT 8" 9 "CB 1" 10 "CB 2" 11
"CB 3" 12 "CB 4" 13 "CB 5" 14 "CB 6" 17 "TAP 1" 18 "TAP 2"
lab val providerbatch providerbatch
tab providerbatch
///  $Y_i = \alpha + \tau \text{Treatment}_i + \gamma \text{Covariates}_i + \eta \cdot \text{Stratifier}_i + \epsilon_i$ ;  $i \sim N(0,2)$ 

// Primary analysis model
regress attendance i.treatment i.year i.mainsubject i.gender gendermissing i.providerbatch, robust cluster(tutor)
margins treatment
```

```
marginsplot, recast(bar) derivlabels
/// secondary outcome analysis - PP student attendance
** the interpretation of the final outcome will be "proportion of hours of tutoring attended"
regress attendance i.treatment i.year i.mainsubject i.gender gendermissing i.providerbatch if whether_pp=="Y", robust
cluster(tutor)
margins treatment
marginsplot, recast(bar) derivlabels
** filling in primary analysis table w/ unadjusted means
//unadjusted means
reg attendance i.treatment
margins treatment

reg attendance i.treatment if whether_pp=="Y"
margins treatment if whether_pp=="Y"

//effect sizes - primary outcome
tabstat attendance, by(treatment) statistics(mean sd N)
* Treatment vs control
display "Hedges's g: = " .743082 / sqrt((1338*(29.96)^2+1247*(30.22)^2)/2585)
// confidence interval
display "Hedges's g lower: = " -1.87401 / sqrt((1338*(29.96)^2+1247*(30.22)^2)/2585)
display "Hedges's g upper: = " 3.360174 / sqrt((1338*(29.96)^2+1247*(30.22)^2)/2585)

//effect sizes - secondary outcome
sort whether_pp
by whether_pp: tabstat attendance, by(treatment) statistics(mean sd N)
* Treatment vs control
display "Hedges's g: = " 1.035643 / sqrt((845*(29.54)^2+810*(29.9)^2)/1655)
// confidence interval
display "Hedges's g lower: = " -1.89273 / sqrt((845*(29.54)^2+810*(29.9)^2)/1655)
display "Hedges's g upper: = " 3.964016 / sqrt((845*(29.54)^2+810*(29.9)^2)/1655)

// graphing outcomes
bitbar attendance, over1(treatment) covariates (i.year i.mainsubject i.gender i.providerbatch) cluster(tutor) barcol
(bitdarkgrey ebg) scale(1)
bitbar attendance if whether_pp=="Y", over1(treatment) covariates (ib3.year i.mainsubject i.gender gendermissing
i.batch###i.tutorprovider) cluster(tutor) barcol (bitdarkgrey ebg) scale(1)

**** Exploratory analysis I - excluding all duplicates
// unadjusted means
reg attendance i.treatment if dup_flag_bit==0
margins treatment
// full model
regress attendance i.treatment i.year i.mainsubject i.gender gendermissing i.providerbatch if dup_flag_bit==0, robust
cluster(tutor)

// effect size
tabstat attendance if dup_flag_bit==0, by(treatment) statistics(mean sd N)
* Treatment vs control
display "Hedges's g: = " .6086162 / sqrt((1315*(29.94)^2+1187*(30.31)^2)/2500)
// confidence interval
display "Hedges's g lower: = " -2.067264 / sqrt((1315*(29.94)^2+1187*(30.31)^2)/2500)
display "Hedges's g upper: = " 3.284496 / sqrt((1315*(29.94)^2+1187*(30.31)^2)/2500)

**** Extra analysis
// PP pupils vs non PP
gen pp=.
replace pp=0 if whether_pp=="N"
replace pp=1 if whether_pp=="Y"
```

```
ttest attendance, by(pp)
reg attendance pp, vce(cluster tutor)
// effect size
tabstat attendance, by(pp) statistics(mean sd N)
* Treatment vs control
display "Hedges's g: = " -8.225819 / sqrt((1656*(29.71)^2+736*(29.7)^2)/2392)
// confidence interval
display "Hedges's g lower: = " -11.06436 / sqrt((1656*(29.71)^2+736*(29.7)^2)/2392)
display "Hedges's g upper: = " -5.387277 / sqrt((1656*(29.71)^2+736*(29.7)^2)/2392)

// CACE analysis
disp .743082/.6021
//upper bound
disp -1.87401/.6021
//lower bound
disp 3.360174/.6021

// EXPLORATORY ANALYSIS II - INCLUDING ALL DUPLICATES

clear all
ssc install distinct
* import and merge data
cd "/Volumes/GoogleDrive/.shortcut-targets-by-id/1aAVmSFszHUAVenwyxN89zNuBgqy_2iwR/T1-Input"
import excel "BIT_Duplicate Tutor File_shared.xlsx", firstrow case(lower) clear
tab dup_flag_bit //174 observations with NFER's binary indicator of whether a tutor appears twice, 87 duplicates

// TPs for RCT2: Action tutoring, coachbright, access project
keep if tpname=="Action Tutoring"|tpname=="Coach Bright"|tpname=="TAP"
distinct bit_tutor_id
//now 2,627 tutors
// need to drop first instance of duplicates before merging, ensuring the instance from the earliest batch remains
sort new_dup_tutor_id batchnumber lineno
//duplicates report new_dup_tutor_id if dup_flag_bit==1 // 74 tutors with two instances, 1 tutor with three.
distinct
save rct2tutorsEXP.dta, replace

import excel "BIT_Pupil File_shared.xlsx", firstrow case(lower) clear
sort bit_tutor_id

save rct2pupilsEXP.dta, replace
use rct2tutorsEXP.dta, clear

merge 1:m bit_tutor_id using rct2pupilsEXP.dta
keep if _merge==3 // now have data for 4,155 pupil-tutor matches
distinct bit_tutor_id // and 1,556 tutors
//// cleaning data
*Deleting observations pre-2nd Feb 2021
generate first2 = date(first_session, "DMY")
format first2 %td
drop if first2<=td(01feb2021)
drop if missing(first_session)
distinct // now have 2,792 pupils and 1,205 tutors

* Dropping pupils who never had any sessions to attend
drop if online_bought=="0"

*How many pupils are here more than once
duplicates report pupilid // 39 pupils are in twice, no need to drop

//renaming
```

```
gen treatment=0
replace treatment=1 if rctassignment=="Treatment"
lab de treatment 0 "Control" 1 "Intervention"
lab val treatment treatment
rename bit_tutor_id tutor
rename batchnumber batch
rename tpname provider
rename main_subject subject
rename year_group yeargroup
```

```
*Missing outcome data - test to see if function of treatment
gen attendancemissing=0
replace attendancemissing=1 if online_attended_pupil=="BLANK"
reg attendancemissing treatment, robust // not a function of treatment, thus excluding obs from analysis
drop if attendancemissing==1
```

```
// Report final sample size
distinct // 2587 pupils, 1144 tutors
```

```
//building attendance outcome variable
*attendance variables imported as string, rebuilding as numeric
gen sessionsattended=.
replace sessionsattended=0 if online_attended_pupil=="0"
replace sessionsattended=1 if online_attended_pupil=="1"
replace sessionsattended=2 if online_attended_pupil=="2"
replace sessionsattended=3 if online_attended_pupil=="3"
replace sessionsattended=4 if online_attended_pupil=="4"
replace sessionsattended=5 if online_attended_pupil=="5"
replace sessionsattended=6 if online_attended_pupil=="6"
replace sessionsattended=7 if online_attended_pupil=="7"
replace sessionsattended=8 if online_attended_pupil=="8"
replace sessionsattended=9 if online_attended_pupil=="9"
replace sessionsattended=10 if online_attended_pupil=="10"
replace sessionsattended=11 if online_attended_pupil=="11"
replace sessionsattended=12 if online_attended_pupil=="12"
replace sessionsattended=13 if online_attended_pupil=="13"
replace sessionsattended=14 if online_attended_pupil=="14"
replace sessionsattended=15 if online_attended_pupil=="15"
sum sessionsattended, d // mean 8.05, sd 4.5
```

```
gen sessionsbought=.
replace sessionsbought=0 if online_bought=="0"
replace sessionsbought=1 if online_bought=="1"
replace sessionsbought=2 if online_bought=="2"
replace sessionsbought=3 if online_bought=="3"
replace sessionsbought=4 if online_bought=="4"
replace sessionsbought=5 if online_bought=="5"
replace sessionsbought=6 if online_bought=="6"
replace sessionsbought=7 if online_bought=="7"
replace sessionsbought=8 if online_bought=="8"
replace sessionsbought=9 if online_bought=="9"
replace sessionsbought=10 if online_bought=="10"
replace sessionsbought=11 if online_bought=="11"
replace sessionsbought=12 if online_bought=="12"
replace sessionsbought=13 if online_bought=="13"
replace sessionsbought=14 if online_bought=="14"
replace sessionsbought=15 if online_bought=="15"
```

```

sum sessionsbought, d // mean 14.24, sd 2.42

gen attendancerate=sessionsattended/sessionsbought
gen attendance=attendancerate*100
replace attendance=100 if attendance>100
sum attendance // mean 56.89%, sd 30.08
sum attendance if whether_pp=="Y" // mean 54.89, sd 29.71

*Complete report section about sample size
//replicating power calcs from TP - replace icc_val 0.2-0.7 for range of MDES estimates
*solving for MDES
    local alpha "0.05"
    local power "0.8"
    local c_mean "74"
    local sd = "28"
    local pupils_per_tutor "2"
    local icc_val "0.2"
    local num_tutors "713"
**Run power calculations solving for minimum detectable effect size
    clustersampsi, detectabledifference mu1(`c_mean') alpha(`alpha') beta(`power') ///
        m(`pupils_per_tutor') k(`num_tutors') sd1(`sd') ///
        rho(`icc_val')

////////// calculating new MDES
// estimating ICC
loneway attendance tutor
// intraclass correlation = 0.471
loneway attendance tutor if whether_pp=="Y"
// intraclass correlation for PP = 0.43
*calculating average cluster size (average pupils per tutor)
distinct pupilid tutor // 39 pupil duplicates, ok to count twice
disp 2587/1144
//av. cluster: 2.261, round to 2 for MDES calcs
distinct pupilid tutor if whether_pp=="Y"
disp 1657/913
//av. cluster: 1.815, round to 2 for MDES calcs

*solving for MDES - Primary Outcome
    local alpha "0.05"
    local power "0.8"
    local c_mean "56.98"
    local sd = "30.08"
    local pupils_per_tutor "2"
    local icc_val "0.47"
    local num_tutors "572"
**Run power calculations solving for minimum detectable effect size
    clustersampsi, detectabledifference mu1(`c_mean') alpha(`alpha') beta(`power') ///
        m(`pupils_per_tutor') k(`num_tutors') sd1(`sd') ///
        rho(`icc_val')

*solving for MDES - Secondary Outcome (PP pupils)
*Plug in values for power components (edit these values as needed to try different scenarios)
    local alpha "0.05"
    local power "0.8"
    local c_mean "54.7"
    local sd = "29.71"
    local pupils_per_tutor "2"
    local icc_val "0.43"

```



```
local num_tutors "457"
**Run power calculations solving for minimum detectable effect size
clustersamps, detectabledifference mu1(`c_mean') alpha(`alpha') beta(`power') ///
    m(`pupils_per_tutor') k(`num_tutors') sd1(`sd') ///
    rho(`icc_val')

*Complete report section about balance test (called Participant characteristics)
sort treatment
foreach v of var yeargroup subject provider batch whether* tutor_gender{
    by treatment: tab `v'
    tab `v'
}

/// primary outcome analysis - Overall sample attendance
** the interpretation of the final outcome will be "proportion of hours of tutoring attended" instead of "proportion of
tutoring sessions attended"

// Checking missingness of covariates, if missingness>5% -> removed from final model
tab whether_pp // 7.46% missing, excluded as covariate
tab whether_send // 28.1% missing, excluded as covariate
tab yeargroup // 0 missing
tab subject // 0 missing
tab tutor_gender // 0.1% missing, create dummy for missingness
gen gendermissing=0
replace gendermissing=1 if tutor_gender=="MISSING"
tab tutor_experience // 32.35% missing, excluded as covariate
tab batch // 0 missing
tab provider // 0 missing

// destring covariates for regressions
encode yeargroup, gen(year)
encode subject, gen(mainsubject)
encode tutor_gender, gen(gender)
encode provider, gen(tutorprovider)
encode pupilid, gen(pupil)
encode tutor, gen(tutornum)

// stratifier variable
gen providerbatch=.
//AT
replace providerbatch=1 if batch==1&tutorprovider==1
replace providerbatch=2 if batch==2&tutorprovider==1
replace providerbatch=3 if batch==3&tutorprovider==1
replace providerbatch=3 if batch==4&tutorprovider==1
replace providerbatch=5 if batch==5&tutorprovider==1
replace providerbatch=6 if batch==6&tutorprovider==1
replace providerbatch=7 if batch==7&tutorprovider==1
replace providerbatch=8 if batch==8&tutorprovider==1
//CB
replace providerbatch=9 if batch==1&tutorprovider==2
replace providerbatch=10 if batch==2&tutorprovider==2
replace providerbatch=11 if batch==3&tutorprovider==2
replace providerbatch=12 if batch==4&tutorprovider==2
replace providerbatch=13 if batch==5&tutorprovider==2
replace providerbatch=14 if batch==6&tutorprovider==2
replace providerbatch=15 if batch==7&tutorprovider==2
replace providerbatch=16 if batch==8&tutorprovider==2
//TAP
replace providerbatch=17 if batch==1&tutorprovider==3
replace providerbatch=18 if batch==2&tutorprovider==3
```

```

replace providerbatch=19 if batch==3&tutorprovider==3
replace providerbatch=20 if batch==4&tutorprovider==3
replace providerbatch=21 if batch==5&tutorprovider==3
replace providerbatch=22 if batch==6&tutorprovider==3
replace providerbatch=23 if batch==7&tutorprovider==3
replace providerbatch=24 if batch==8&tutorprovider==3

tab providerbatch

lab de providerbatch 1 "AT 1" 2 "AT 2" 3 "AT 3" 4 "AT 4" 5 "AT 5" 6 "AT 6" 7 "AT 7" 8 "AT 8" 9 "CB 1" 10 "CB 2" 11
"CB 3" 12 "CB 4" 13 "CB 5" 14 "CB 6" 17 "TAP 1" 18 "TAP 2"
lab val providerbatch providerbatch
tab providerbatch
///  $Y_i = \alpha + \text{TTreatment}_i + \text{CCovariates}_i + \eta \cdot \text{Stratifier}_i + \epsilon_i; i \sim N(0,2)$ 

// unadjusted means
reg attendance i.treatment
margins treatment
// standard OLS

regress attendance i.treatment i.year i.mainsubject i.gender gendermissing i.providerbatch, robust cluster(tutor)
margins treatment

// effect size
//effect sizes - primary outcome
tabstat attendance, by(treatment) statistics(mean sd N)
* Treatment vs control
display "Hedges's g: = " .5414266 / sqrt((1351*(30.02)^2+1264*(30.19)^2)/2615)
// confidence interval
display "Hedges's g lower: = " -2.055052 / sqrt((1351*(30.02)^2+1264*(30.19)^2)/2615)
display "Hedges's g upper: = " 3.137905 / sqrt((1351*(30.02)^2+1264*(30.19)^2)/2615)

```

Appendix H: IPE materials

Figure 5: Interview guide for TPs

Main objective	Purpose of section	Guide timings
1. Introductions and background	Explain the purpose and ground rules for the interview.	2.5 mins
2. Overview of the NTP tutoring program	To get an overview of key delivery partners' backgrounds and their experience coordinating the NTP.	5 mins
3. Overview of TP's typical engagement with tutors	To understand how the tutor partners interact with the tutors and prepare them for their tutoring sessions.	10 mins
4. Overall understanding of and thoughts on the PTR activity	To explore the Tutor providers' understanding of the PTR intervention, how it compares with BAU practices and their perceptions of the interventions and the impact it may have.	10 mins
5. Overall thoughts on delivering the intervention - compliance/fidelity	To understand the extent to which the tutor providers delivered the intervention with fidelity and the barriers and facilitators which may have impacted the delivery.	10 mins
6. Ideas and feedback on changing the process	To understand how the delivery of the intervention could be improved.	5 mins
7. Close	Thank you and close.	2.5 mins

1. Introductions and background	2.5 mins
---------------------------------	----------

My name is Sara/Callum I work for the Behavioural Insights Team. • We apply behavioural insights to inform policy and improve public services. • We've been working with the EEF to design, deliver and evaluate a set of activities for tutors and pupils on the NTP programme. • As part of the evaluation, we're running an implementation and process evaluation to understand how the activities have been delivered and the outcomes reported by stakeholders such as yourself. Aim of this interview: • The purpose of this interview is to gain understanding of your experiences supporting tutors in delivering the "Prioritising Tutoring Relationships" activity. • We'd like to explore your views and perceptions of the processes, as well as any feedback you have regarding the activity. This interview • should take up to 30 minutes • We would like to know your thoughts and understand your point of view - there are no right or wrong answers to any of our questions Reiterate key points • Will not use your name in any reports we write up; we might use quotes, but we will de-identify them first • If you feel uncomfortable answering a question we can just skip it • If you later change your mind about anything you have said - let me know, that's absolutely fine too • Just say at any point if you want to stop altogether - this is not a problem and you do not have to give a reason for stopping • Check if they have any questions before starting Recording • With your permission, I'd like to audio record the conversation, to ensure we capture everything you said correctly, in your own words; will have transcript • [Suggest switching video off if not possible to only record audio] • Gain verbal consent (not recorded) and start the audio recorder	
2. Overview of the NTP tutoring programme	5 mins

- Can you tell me a bit about your current role at [Coach Bright]? - How long have you had this role for? - What are your day-to-day responsibilities? - How have you found your role as a TP on the NTP? - What challenges, if any, have you faced?	
3. Overview of TP's typical engagement with tutors	10 mins
- Can you tell me how you normally go about getting your tutors ready for tutoring? - How do you interact with tutors once their tutoring relationships are set-up? - What channels do you use? - How often do you reach out to tutors? - What challenges, if any, do you face? (e.g. tutor engagement, tutor responsiveness, - What factors make it easier, or more difficult, to interact with tutors? (e.g. tutors level of experience, tutors level of motivation, time, number of pupils per tutor)	
4. Overall understanding of and thoughts on the prioritising tutor relationships activity	10 mins
As part of the NTP programme, you were asked to deliver an activity, prioritising tutor relationships, to a number of your tutors. Description of activity: Short (20 minute) online activity, designed to improve tutors relational self-efficacy in order to boost pupil attendance in tutor sessions. Tutors work through three parts: - Reflecting on a moment they connected with someone else - Learning about common relationship-building strategies used by other tutors - Developing their own, personal relationship-building strategy.	

I'd now like to hear about your experiences delivering the prioritising tutoring relationships activity to your tutors. Let's start by discussing the activity itself. 1. Please could you outline what your understanding of the prioritising tutoring relationships activity is? - What do you think the purpose of the intervention is? 2. What are your thoughts on the activity? - Perceived need - Perceived impact 3. How does the intervention fit with the way your tutors typically work? - Are there any other similar training resources / activities you currently provide tutors with? - If so, what are these?	
5. Overall thoughts on delivering the intervention - compliance/fidelity	10 mins
The next set of questions relate to your experiences delivering the activity. 1. What role did you play in delivering the Prioritising Tutor Relationships activity? Description of role: TPs share the intervention by email through the usual communication channel. Tutor providers also send tutors 2 reminder emails to complete the activity, both in the week following the initial email. - How were you briefed on your role? - Were the requirements clear? - Did you feel prepared for your role in delivering the activity? - If not, what could be done to improve this if the intervention was repeated? 2. Could you describe how you delivered the activity to your tutors? - Who did you send the activity to and why? (C/T) - How was the activity sent to tutors?	

- Any additional resources? - Through what channel? - When? - Were there any issues sending or receiving the activity? - Did you send any follow-up materials or activities? Description of delivery: TPs share the intervention by email through the usual communication channel. Tutor providers also send tutors 2 reminder emails to complete the activity, both in the week following the initial email. Follow-up email 2 weeks later that: - reminds them of the relationship-building strategy they developed in the initial intervention. - 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. 3. How did you find delivering the intervention to tutors? - What worked well? - What was challenging? - What could be done to solve these issues? 4. Did tutors contact you in relation to the prioritising tutoring relationships activity? - What sort of questions did they ask you? - How easy, or difficult, was it for you to answer their questions? - If difficult - what could have been done to better support you? 5. Is there anything that could be done to improve the delivery process? - More communication or information on the activity from BIT? - Any additional resources? - More opportunities for tutors to ask questions? - Timing - should the intervention have been sent to tutors sooner or later?	
6. Feedback on the delivery and intervention from tutors (or pupils)	5 mins

Lastly, we are interested in your perception of how tutors and their pupils engaged with the activity. 1. Did you receive any feedback from tutors and/or their pupils? - If yes - What feedback did you receive? - How do you think that they perceived the activity? - How helpful, if at all, did they find the activity? - Did either pupils or tutors report any impact on attendance or engagement in session, resulting from the activity?	
7. Close	2.5 mins
Is there anything else we have not covered that you think would be helpful for us to know? Thank you for your time.	

Figure 6: Interview guide for tutors

Main objective	Purpose of section	Guide timings
1. Introductions and background	Explain the purpose and ground rules for the interview.	2.5 mins
2. Rapport building and overview of the NTP tutoring programme / intervention delivery context	To get an overview of tutors' background and their NTP tutoring experience. To understand the context within which tutors delivered the intervention.	10 mins
3. Overall thoughts on the intervention and experience delivering the intervention	To get an overview of whether tutors implemented the intervention (<i>compliance</i>), what they thought of the intervention (<i>quality</i>) and how they implemented it (<i>fidelity</i>), including perceived facilitators and barriers to integrating the intervention in their tutoring (<i>mechanisms</i>).	15 mins

4. Ideas and feedback on changing the process	To understand how the intervention could be improved.	5 mins
5. Close	Thank you and close.	2.5 mins

1. Introductions and background	2.5 mins
My name is Sara/Callum. I work for the Behavioural Insights Team. • We apply behavioural insights to inform policy and improve public services. • We've been working with the EEF to design, deliver and evaluate a set of activities for tutors and pupils on the NTP programme. • As part of the evaluation, we're running an implementation and process evaluation to understand how the activities have been delivered and the outcomes reported by stakeholders such as yourself. Aim of this interview: • The purpose of this interview is to gain understanding of your experiences of the <i>Connecting with Pupils</i> tool. • We'd like to explore your views and perceptions of the processes, as well as any feedback you have regarding the activity. This interview • should take up to 30 minutes • We would like to know your thoughts and understand your point of view - there are no right or wrong answers to any of our questions Reiterate key points • Will not use your name in any reports we write up; we might use quotes, but we will de-identify them first • If you feel uncomfortable answering a question we can just skip it • If you later change your mind about anything you have said - let me know, that's absolutely fine too • Just say at any point if you want to stop altogether - this is not a problem and you do not have to give a reason for stopping • Check if they have any questions before starting	

Recording • With your permission, I'd like to audio record the conversation, to ensure we capture everything you said correctly, in your own words; will have transcript • [Suggest switching video off if not possible to only record audio] • Gain verbal consent (not recorded) and start the audio recorder	
2. Rapport building, overview of the NTP tutoring programme, delivery context	10 mins
1. Can you tell me a bit about your role as a tutor for [TP name]? a. How many pupil(s) do you tutor? [TP and other] b. How often do you tutor? c. How many sessions have you had with your pupil(s) to date? d. How long have you been tutoring for? [general] 2. Can you describe what the process of being set-up as a tutor with [TP name], and then later matched with your pupil(s), looked like? a. What steps? b. What training and materials did you receive? [from TP or other] 3. How have you found this experience? a. Any challenges? [with TP, NTP or other] b. Level of training & support provided sufficient?	
3. Overall thoughts on the intervention and experience delivering the intervention	15 mins

The next set of questions relate to one specific component of your role as a tutor which is tutor-pupil relationship building.

1. How do you typically go about doing this?
 - a. Are there any particular steps you take or tools/strategies you use (to get to know your pupil(s) / build tutoring relationships with them)?
 - b. What factors influence this? (i.e. what makes it easier/more difficult).
 - c. Any training and materials? [from TP or other]
 - d. Any communications? [from TP or other]

Recently, as part of your NTP training package, you were encouraged to use a new tool “*Connecting with Pupils*” - a web-based tool for tutors.

Do you remember receiving this tool? (IF NO - describe tool & ask perception / if would engage).

- a. **Online activity** - questions related to tutor’s previous experience, tips from other tutors on how to connect with pupils, questions to develop tutor’s own, personal relationship-building strategy.
- b. **Relationship-building exercise** - tutors received an email immediately after completing the activity outlining the personalised relationship-building strategy they developed and a follow-up email 2 weeks later reminding them 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.

End interview

[If YES]

1. Did you use this tool? Why/why not?
 - a. Motivation? Logistics?
 - b. Did your TP encourage you to use this tool?
2. **What do you think was the purpose of the tool?** - to help tutors identify similarities with their tutees to help improve relationship building and boost pupil attendance in tutor sessions

If did not take part:

1. Are there any changes that could be made to the tool that would encourage you to take part in the future?
2. Are there any changes that could be made to the wider context of tutoring that would encourage you to take part in the future?

End interview. If <u>did</u> take part: 1. What do you recall doing as part of Connecting with Pupils? 2. How did you find using the tool? - <i>onboarding, usability, content</i> 3. How did you find integrating the tool into your tutoring plan? a. How did it differ from your usual practice? 4. We will now go through each component of Connecting with Pupils and would love to hear what you thought about it. Follow up with: - Did you complete it? If yes, how? When? - Were there any issues which prevented you from doing this? - What worked well? What didn't work well? - What did you think of the content? (a. only) - How did pupils respond to the activity? (b. only) a. Online activity - questions related to tutor's previous experience, tips from other tutors on how to connect with pupils, questions to develop tutor's own, personal relationship-building strategy. b. Relationship-building exercise - tutors received an email immediately after completing the activity outlining the personalised relationship-building strategy they developed and a follow-up email 2 weeks later reminding them 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. Having delivered the activity we would like to know... 5. What is your overall perception of the communications you received in relation to the <i>Connecting with Pupils</i> activity? (e.g. emails, online platform for activity): a. How clear was it what you were being asked to do? b. What did you feel prepared to do, following this? c. How could this process be improved? (<i>E.g. more information or training</i>) 6. What impact, if any, do you think completing the <i>Connecting with Pupils</i> activity had on you and your pupils? a. Did the activity help you to get to know your pupil(s) or did it make it more difficult? b. How did your pupils respond to the techniques you used? Why?	
--	--

4. Ideas and feedback on changing the process & materials	10 mins
We would find it extremely useful to know what you think could be improved. 1. If you could make any changes to the tool what changes would you make? 2. If you could change anything in the wider context of tutoring to make it easier to use the activity what would that be? 3. Would you recommend the activity to other tutors?	
Close	2.5 mins
Is there anything else we have not covered that you think would be helpful for us to know? Thank you for your time.	

Appendix I: Timeline

Figure 7: Timeline

Date	Activity	Staff responsible
February 2021	Trial set up	BIT, TPs, EEF
	Finalise intervention materials	BIT, TPs, EEF
	Rolling randomisation for new tutors begins	BIT, TPs
	Launch trial (15 Feb)	BIT, TPs
February - August 2021	Tutor reminders to use the intervention (from 22 Feb)	BIT, TPs
	Follow-up emails to tutors	BIT
	Monitoring trial	BIT, TPs
	IPE interviews conducted	BIT, TPs
	IPE observations conducted	BIT, TPs
September 2021	NFER receives data from TPs	NFER, TPs
November - December 2021	NFER sends BIT data	BIT, NFER
	Impact and IPE analysis	BIT
	Reporting	BIT
December 2021 - January 2022	Report review and publication	BIT, TPs, EEF

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