Maximising the Impact of Teaching Assistants

Evaluation Report

September 2021

Sashka Dimova, Andreas Culora, Elena Rosa Brown, Sonia Ilie, Alex Sutherland, and Sara Curran.

The Education Endowment Foundation (EEF) is an independent grant-making charity dedicated to breaking the link between family income and educational achievement, ensuring that children from all backgrounds can fulfil their potential and make the most of their talents.

The EEF aims to raise the attainment of children facing disadvantage by:

- identifying promising educational innovations that address the needs of disadvantaged children in primary and secondary schools in England;

- evaluating these innovations to extend and secure the evidence on what works and can be made to work at scale; and

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

The EEF was established in 2011 by the Sutton Trust as lead charity in partnership with Impetus Trust (now part of Impetus - Private Equity Foundation) and received a founding £125m grant from the Department for Education.

Together, the EEF and Sutton Trust are the government-designated What Works Centre for improving education outcomes for school-aged children.

For more information about the EEF or this report please contact:

Jonathan Kay
Education Endowment Foundation
5th Floor, Millbank Tower
21–24 Millbank
SW1P 4QP

0207 802 1653

jonathan.kay@eefoundation.org.uk

www.educationendowmentfoundation.org.uk

Contents

About the evaluator

The project was independently evaluated by a team from RAND Europe and the University of Cambridge: Sashka Dimova, Andreas Culora, Elena Rosa Brown, Sonia Ilie, Alex Sutherland, and Sara Curran.

The lead evaluator was initially Alex Sutherland, then Elena Rosa Brown.

Contact details:

Name: Dr Sashka Dimova

Address: RAND Europe, Westbrook Centre, Milton Road, Cambridge, CB4 1YG, UK

Tel.:   +44 1223 353 329

Email: **sdimova@randeurope.org**

Executive summary

The project

The Maximising the Impact of Teaching Assistants (MITA) programme is a whole-school intervention that aims to support improvements to pupil outcomes by improving how teaching assistants (TAs): (i) are deployed in the classroom (ii) are prepared for lessons, and (iii) interact with pupils. The programme was developed by the University College London Institute of Education with support from the London Leadership Strategy.

The MITA programme provides training and support to school staff at three strategic levels over the course of one academic year. Two senior leaders receive four half-day training sessions covering the research on the deployment, preparation, and practice of teaching assistants (TAs), review and action planning, and developing a whole-school improvement plan. Each school has a consultant—an experienced school leader who visits the school between training sessions to support school leaders to identify gaps in current practice and to develop an improvement plan. There are two half-day training sessions for TAs on effective interactions with pupils and on improving independence. Teachers receive one twilight session on planning lessons and organising classrooms with TAs in mind. This version of the programme was evaluated over two years, where the school action plans developed during year one (Phase 1) were fully implemented in year two (Phase 2).

This efficacy trial saw 128 primary schools from four regions engage in a stratified, two-arm, cluster randomised controlled trial. Schools were randomly allocated to either receive MITA or to act as a control group. After randomisation, baseline data was unavailable for four schools, therefore a maximum of 124 schools and 12,598 pupils were available for analysis.

The trial evaluated the impact of this intervention using reading attainment for pupils in Year 3 and Year 6 as a primary outcome. Pupils' maths attainment and engagement with learning as well as changes in TA deployment and preparation were analysed as secondary outcomes. Mixed methods research was undertaken to capture compliance with the programme's main activities, explore barriers and facilitators, and understand practice in control schools. The trial started in December 2016. Training and support was provided to schools in Phase 1 from September 2017 to June 2018, while Phase 2 saw schools beginning to fully implement their plans from September 2018 to June 2019.

Table 1: Key conclusions

Key conclusions
1. There is no evidence that MITA had an impact on reading outcomes for pupils in Year 3 and Year 6. This result has a high security rating.
2. MITA had a moderate positive impact on pupil engagement. Pupils in MITA schools were more engaged than pupils in control schools, however the analysis used a smaller number of schools with several schools unable to complete the measure, which limits the security of these findings.
3. There is evidence that staff in MITA schools changed their behaviour in line with MITA principles, based on a measure of change in practice when compared to control schools. Although evidence is limited by a small sample and the use of a new measure of change in practice that has not been tested more widely, behaviour change is supported by evidence from the teacher and TA surveys, interviews, and classroom observations.
4. During the trial, control schools made substantial efforts to improve TA deployment in line with many of MITA's key recommendations. However, an analysis of behaviour from teacher and TA surveys between the start and end of the trial suggest that this did not translate into changes in behaviour.
5. Interviews in case study schools indicate that senior leadership and staff buy-in are fundamental for effective implementation of MITA. Staff turn-over at the senior leadership and classroom level are potential barriers to embedding MITA principles in the longer term.

EEF security rating

These findings have a high security rating. This was an efficacy trial, which tested whether the MITA programme worked under developer-led conditions. This trial was a well-designed, stratified, two-armed randomised controlled trial and was well-powered for the primary outcome measure. Pupils in schools receiving MITA were similar to those in the control schools in terms of prior attainment. However, the trial security rating was reduced to four padlocks because 17.85% of pupils who started the trial were not included in the final analysis, either due to challenges providing baseline data at the start of the trial or with testing at the end of the trial.

Additional findings

This trial found no evidence that the MITA programme had an impact on reading attainment for pupils in Year 3 and Year 6. This is our best estimate of impact, which has a high security rating. As with any study, there is always some uncertainty around the result: the possible impact of this programme ranges from small negative effects of up to one month's less progress to positive effects of up to one month of additional progress.

The evaluation undertook exploratory analysis on progress in reading attainment. Special focus was placed on pupils who were eligible to receive free school meals (FSM) and pupils with special educational needs and disabilities (SEND), but this provided no evidence of impact. There was also no evidence of impact on Year 6 pupils' maths attainment compared to pupils in control schools. It should be noted that attainment outcomes are seen as long-term outcomes for MITA: reading and maths teaching and learning is not specifically targeted as part of the MITA programme so attainment outcomes are seen as long-term outcomes stemming from the improvements to pupil engagement and TA deployment and preparation targeted by the MITA programme.

One of the key aims of the MITA programme is to improve pupil engagement. The evaluation shows that MITA had a moderate, positive impact on pupil engagement compared to pupils in control schools. However, the security of this measure is limited by the fact that the measure was collected in a smaller number of schools compared to those that were randomised, and the fact that several schools from that smaller number of schools were unable to complete the engagement measure.

Evidence from a change in practice measure also suggested that MITA schools changed TA deployment and preparation in line with MITA principles when compared to control schools. However, evidence is limited by the fact that a smaller number of schools completed the survey compared to those that were randomised and a new measure of change in practice was used that has not been tested more widely and is based on self-reported behaviour. However, evidence from teacher and TA surveys, interviews, and observations provides further evidence of behaviour change.

Control schools were keen to engage with MITA's key recommendations, with many accessing the same resources and materials given to treatment schools. However, an analysis of control school behaviour between the start and end of the trial suggests that their efforts did not translate into changes in behaviour, particularly when compared to MITA schools that did change behaviour. These findings are limited by a small sample size, high levels of missing data, a reliance on mostly self-reported behaviour, and a potentially selective sample of those that did provide data.

Compliance with programme activities was high and well-received by school staff, with proactive engagement of headteachers and senior leadership teams crucial to embedding MITA effectively. The evaluation findings suggest that MITA had an effect on TA deployment, preparation, and interactions and the short-term outcome of pupil engagement. However, this did not translate into an impact on the longer-term outcome of attainment. While training and support was provided in the first year (September 2017 to June 2018), it could be that one year of implementation (September 2018 to June 2019) was not enough time for practices to become embedded, or that follow-on training and support in subsequent years may be needed. Another possibility is that MITA has a stronger impact on the outcomes it directly targets—such as attention, independence, confidence, and motivation—compared to long-term attainment outcomes.

Cost

The average cost of the MITA programme for one school was around £3,690, or £3.27 per pupil per year, when averaged over a three-year period. This estimate is based on delivery of the intervention across all pupils in schools, with an average of 376 pupils per school. This cost is frontloaded in the first year of delivery and comprises programme training and consultant support. Schools may also need to meet additional costs which could be associated with the programme such as staff cover, further resources, additional staff, or staff time to effectively implement their improvement plans.

Impact

Table 2: Summary of impact on primary outcome(s)

Outcome/Group	Effect size (95% confidence interval)	Estimated months' progress	EEF security rating	No of pupils	P Value	EEF cost rating
Reading attainment	-0.00 (-0.07;0.07)	0	🔒🔒🔒🔒🔒	10,777	0.98	£ £ £ £
Reading attainment (FSM)	-0.02 (-0.11; 0.08)	0	n/a	2,466	0.75	£ £ £ £

Introduction

Background

Teaching assistants (TAs) are considered a prevalent part of educational institutions' everyday reality as they have a crucial role within the classrooms of primary and secondary schools (Giangreco, 2013). They make up over a third of the primary school workforce in England with an overall number of 263,900 full-time equivalent TAs in 2018, which is more than three times higher than the number of TAs in 2000 (Sharples et al., 2016; DfE, 2019). Yet, despite TA staff being widely used and viewed positively in terms of their impact on teaching, evidence about their actual effectiveness is mixed (Blatchford et al., 2009; Blatchford et al., 2012).

In recent years there has been a growing interest in research exploring the TA role, their contribution to school effectiveness, and their impact on pupils' social, emotional, and academic development (Sharples et al., 2016). To date there have been two streams of research focused on the impact of TAs on learning outcomes: (i) those assessing curriculum-based approaches or 'catch-up' interventions and (ii) those focused on understanding how TAs are deployed in schools. It is clear from the evidence that the first type of interventions generally have a positive impact on pupils (Alborz et al., 2009). This trial focuses on the latter stream of research.

The genesis of Maximising the Impact of Teaching Assistants (MITA) is based on previous studies including the Deployment and Impact of Support Staff (DISS) study (2003 to 2009), the Effective Deployment of Teaching Assistants (EDTA), and the Making a Statement (MAST) (Webster et al, 2015).

The DISS was the first large-scale study in the United Kingdom that applied a systematic approach to understanding the characteristics of TAs deployed in schools and the impact they had on teaching and learning, students' social and behavioural development, and academic attainment (Blatchford et al., 2007; Webster et al, 2013). The study examined the effectiveness and the impact of TAs' support on students' academic progress in the subjects of English, mathematics and science through the use of various methodological tools such as surveys, observations, research diaries, and transcripts (Webster et al, 2015). The findings of DISS indicated that the groups of pupils that received the most support from TAs in these subjects were lower attainment students or those with special education needs and disabilities (SEND) and they made less academic progress than other students from similar groups who got little or no TA support in the same subjects (Blatchford et al., 2012).[1] The study conceptualised the findings through the development of the Wider Pedagogical Role (WPR) model (Webster et al., 2013). The WPR model is a framework that demonstrates how school's organisational components link to each other with particular focus on TA's employment, deployment, preparedness, and practice (Webster et al., 2015).

The EDTA study was a response to the surprising conclusion from the DISS study in which pupils who received the most TA support were the ones who had less engagement with teachers and as a result were making less academic progress than pupils with less TA support (Blatchford et al., 2012). The main goal of the EDTA was to develop alternative strategies on effective ways of deploying and preparing TAs on the basis of the WPR model (Webster et al., 2015). The study took place over the 2010/2011 school year and it involved ten schools in two local authorities in the United Kingdom (Webster et al., 2013). The strategies on TA deployment in the EDTA study were evaluated through audits and structured observations. Participation in the study resulted in more effective deployment, preparation, and practice of TAs (Webster et al., 2013).

The DISS and EDTA studies were followed by the MAST project, which was implemented over 2011/2012 with the aim to understand the overall support available to pupils with the highest level of SEND, known as Statements. Findings of the MAST study showed that pupils with Statements were more than three times more likely to interact with TAs than teachers, and spent less time in whole-class teaching with teachers (Webster and Blatchford, 2013). The study concluded that support provided by TAs was insufficient to close the attainment gap.

---

[1] The term 'SEND' is used throughout the report in order to be inclusive of all pupils with these needs and in recognition of the fact that a disability will often overlap with special educational needs. However, this report is about special educational needs and provision rather than any adaptations schools may need to make for pupils with a physical disability or a long-term health condition.

In response to the findings from these studies, in 2014 researchers at the University College London Institute of Education (UCL-IOE) designed and implemented a two-term school improvement project called MITA. This was based on the book *Maximising the Impact of Teaching Assistants: Guidance for School Leaders and Teachers* (Webster et al., 2015). One of the main objectives of MITA is to encourage schools to change how teaching assistants were being deployed (Webster et al., 2015).

Policy and practice context

The extensive coverage of TA deployment culminating in policy reviews and guidance reports serves as the backdrop to this trial. For example, the research studies described above have influenced the design and enactment of education policy in the United Kingdom with regards to the role and use of teaching assistants by informing the 2014 SEND Code of Practice, which makes it clear that teachers are responsible and accountable for the progress and development of the pupils in their class, including where pupils access support from teaching assistants (Department of Education and Department of Health, 2015).

Additionally, the developers of MITA worked in collaboration with the EEF to produce a guidance report providing recommendations to school leaders and teachers on how to better and more effectively deploy and use TAs (Sharples et al., 2016). Starting in 2015, the EEF has carried out sustained, strategic campaigning efforts to promote meaningful school-level action on making better use of TAs in schools across England. The EEF TA guidance, to which MITA principles and materials are a core component, began before the start of this trial and last over the course of the trial period. The four recommendations in the guidance report relating to deployment of TAs in the classrooms were drawn from the MITA guidance textbook (Webster et al., 2015). The Making the Best Use of Teaching Assistants guidance report was developed to address the gap between the positive results found in several EEF trials involving TA-delivered interventions and the EDTA project, and ineffective practice as evidenced by the DISS and MAST studies. This guidance report is available for free on the EEF's website and includes a number of additional tools and resources to support schools, including an online course. The MITA programme builds on the TA guidance report by addressing common issues with existing practice by aiming to replace ineffective practices with a more strategic, coherent, and collaborative approach.

The EEF's TA campaign has been repeatedly cited in guidance and reports for schools from the Department for Education (DfE)[2,3] and MITA materials have been circulated widely by influential partners including Nasen, Whole School SEND, the Chartered College of Teaching, and the Teaching School Council. A survey conducted for the DfE in 2019 showed exceptionally high levels of awareness and use of the TA guidance among school leaders in England:

- 87% of school leaders were aware of it;
- 92% of those had read it;
- 95% of school leaders who had read it found it 'helpful'; and
- 40% found it 'very helpful'.[4]

In terms of efforts to capture the impact of this advocacy, the EEF funded a large-scale campaign, promoting action on the TA guidance in Yorkshire, and supported a similar project in Lincolnshire called Mobilise. The MITA team were involved in the planning and delivery of both campaigns, bringing in our expertise, training, publications, resources, and auditing tools. The EEF commissioned independent evaluations of these two projects and both showed significant levels of engagement and interaction with the TA guidance. In Yorkshire, there was evidence of a small positive impact on learning outcomes.[5]

---

[2]https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/595745/School_inspection_update_November_2016__1_.pdf
[3]https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/737168/Workforce_planning_guidance_August_2018.pdf
[4]https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/903642/2._Workforce__6104.01_Winter_2019_.pdf
[5]https://educationendowmentfoundation.org.uk/public/files/Campaigns/TA_scale_up_lessons_learned.pdf

Finally, from a practice perspective, whole-school approaches are increasingly being seen as viable approaches to enable the spread of best practice (Pearce et al., 2011). However, research in the area also suggests that there are a number of implementation issues that need to be considered, including the need to acknowledge competing demands in schools and the role of ongoing professional development (Leyden et al., 2011; Yeng et al., 2016).

Evaluation overview

Reviews from the EEF show that TAs can have a positive impact on academic achievement if they are deployed to deliver structured interventions.[6] Meanwhile it has been shown that TAs spend the majority of their time in an informal instructional role supporting pupils with most need, yet the quality of support they offer varies both within and between schools (Sharples et al., 2016). To date, there are no evaluations of programmes that help schools use teaching assistants effectively in whole-class settings. The ultimate objective of this evaluation was to evaluate the efficacy of MITA, which aims to improve the deployment of TAs and positively impact on pupil outcomes, thereby helping to reduce the gap. Given the shortage of existing research on the impact of whole-school approaches to improving deployment of TAs, the evaluation was designed as an efficacy trial.

The evaluation was planned as a stratified, two-arm, cluster-randomised controlled trial (cRCT) across 100 schools recruited from four geographical regions. In total, 128 schools were recruited in the trial and within this, the programme was delivered in 62 intervention schools. MITA is whole-school intervention but for the purposes of the trial Year 3 and Year 6 pupils were used to assess the impact of the intervention on pupils' engagement (see discussion on why these year groups were chosen in the Methods section). The implementation and process evaluation (IPE) focused on understanding the views of school leaders and staff by reviewing delivery, training, and consultancy visits in Phase 1. In Phase 2 the IPE focused on the extent to which intervention schools were able to maintain their new practices in the absence of further support. To our knowledge, this is the first time a randomised controlled trial (RCT) has tested a whole-school intervention aimed at improving how schools, teachers, and TAs can reinforce the use of TAs in everyday classrooms.

Intervention

This section outlines the underlying rationale and structure of the MITA programme as it was implemented in the trial. A visual overview of this can be seen in the Theory of Change (ToC) for MITA (see Figure 1).[7]

Both the ToC and the Template for Intervention Description and Replication (TIDieR) checklist (Hoffman et al., 2014) provide structure for the rest of this section.

---

[6] For more evidence on the impact of TAs on pupils' attainment follow the link:
https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit/teaching-assistants/?utm_source=site&utm_medium=search&utm_campaign=site_search&search_term=teaching%20assistants
[7] The ToC in Figure 1 is different to the one presented in the protocol. This is because the ToC was updated to improve clarity of the programme and better inform the evaluation. Please note that the ToC has not been updated as a result of the findings of the evaluation.

Figure 1: Updated MITA intervention Theory of Change (ToC)

Moderators: 1. **SLT** a) level of prioritisation over other demands, b) how SLT manage change process (i.e. manage resistance, gain and maintain staff support), c) SLT's capacity and desire to undertake MITA; 2. **travel distance** to schools with exemplary practices; 3. **extent and quality of SEND provision**, particularly teacher confidence and competence; 4. **extent of restructuring needed**

Inputs

schools

MITA
(MITA school workforce improvement and staff CPD, plus supporting resources)

External consultant *(MITA reviewer)*

Activities

Training

Strategic input for SLTs
4 half day sessions, plus attend TA and teacher CPD

CPD for Teachers
1 x twilight (2 hours)

CPD for TAs
*2 x half day sessions plus **gap task***

Outputs

Development and delivery of **action plan** based on self-audit (SLT gap task + external consultant report)

Outcomes
(i.e. identifiable changes to practice)

Deployment
- Teachers spend more time with lower-attaining and SEND pupils
- TAs spend less time with lower-attaining and SEND pupils/more time with other pupils
- Lower-attaining and SEND pupils spend more time working without adult support
- Teachers' classroom organisation/TA deployment improves
- TAs do more 'team teaching' at front of class

Preparation
- Quality of pre-lesson preparation for TA's improves
- Quality of TA's feedback to teachers improves
- Opportunities created for teacher-TA liaison (e.g. changes to TAs' hours)

TA-pupil interactions
- Higher proportion of TA-pupil interactions are prompting/clues vs. correcting
- TAs' knowledge of effective interactions improves
- Pupils are self-scaffolding (working independently) more

Impact

Short term

Pupils' engagement improves

Pupils' confidence, motivation, and attention improves

TAs' confidence improves

Long term

Pupils' attainment improves

Context: 1. **school funding** challenges, particularly with SEN provision, 2. **EEF's work** a) TA guidance report b) TA scale-up campaign

As can be seen in the stated ToC outcomes, MITA aims to address the noted issues with existing TA practices by providing a more strategic, coherent, and collaborative approach to TA deployment built on the principles developed in light of the DISS project findings (Webster et al., 2015), namely:

- higher quality TA-pupil interactions;

- improved TA preparation through classroom management and lesson planning; and

- more effective deployment allowing classroom teachers to work more with lower-achieving pupils.

Who—recipients of the intervention

MITA is a whole-school initiative aimed at improving (i) school leaders' strategic decision-making and (ii) changing teacher and TA behaviour. MITA has been developed to work with headteachers/school leaders, teachers, and TAs to support whole-school and class-level change.

What—physical or informational materials and inputs that were used in the intervention

Schools were provided with two MITA handbooks: *Maximising the Impact of Teaching Assistants* (Webster et al., 2015) and *The TA's Guide to Effective Interaction* (Bosanquet et al., 2015). These were supplemented with the EEF TA guidance report and supporting materials available for free on the EEF website, plus the TA Deployment Review Guide available on the MITA website, also for free.[8]

The MITA team felt that the EEF guidance had the advantage of already being familiar to schools, plus it was somewhat more succinct in form and visually appealing than the 2015 book. Therefore, it was decided to use the guidance as the main organisational structure to their programme, weaving in material from the other key resources.

In addition, schools were supported by consultants. External consultants were deployed in this programme to provide support to the senior leadership team (SLT), helping to identify gaps in current practice as well as to develop and implement a change management plan. Consultants who were experienced in supporting strategic change in schools and supporting leaders were recruited via an open call facilitated by the London Leadership Strategy (LLS). Consultants were given a one-day, face-to-face training on MITA coaching and a full briefing on the project and their role. The objectives of the training were:

- to explore the role of a consultant;

- outline the research background to MITA and the review process;

- explain the EEF project and the consultants' role and contribution to the evaluation process; and

- ensure reviewers have the knowledge and coaching skills necessary to conduct MITA reviews and support schools in the change process.

What—activities and outputs

As outlined in the ToC, the programme is made up of several elements including (i) strategic input for SLTs, (ii) continuing professional development (CPD) days for school staff from the senior leadership team (SLTs), TAs, and teachers, (iii) delivery of an action plan based on a self-audit, and (iv) structured gap tasks that occur between the CPD sessions and require the participation of SLTs, TAs, and teachers. During Phase 1, MITA schools received ongoing support from MITA trainers and MITA reviewers. MITA reviewers (denoted as external consultants henceforth) were experienced senior leaders linked to the London Leadership Strategy (LLS).[9] The external consultants offered support to school staff throughout the programme delivery period.

The timeline of key programme events is presented in Table 3. Further details on each element is provided below.

Table 3: Key components of the intervention

Phase	2017	Sep	SLT strategy session 1.

---

[8] A new MITA book for primary school leaders and an updated version of the handbook for TAs were published in May 2021. See **http://maximisingtas.co.uk/our-books.php**

[9] The LLS was a not-for-profit organisation run and led by serving headteachers. It dissolved in 2019.

		Sep–Nov	Gap task 1: self-evaluation and 'visioning'. External consultant visit 1: strategic support and challenge.
		Nov	SLT strategy session 2.
		Nov–Feb	Gap task 2: developing an action plan and early implementation. External consultant visit 2: strategic support and challenge.
	2018	Jan-April	TA and teacher CPD sessions. External consultant consultancy visit 3: strategic support and challenge.
		Feb	SLT strategy session 3.
		May	Gap task 3: self-evaluation and review.
		June	SLT strategy session 4.
Phase 2: beginning to implement	2018–2019	Sep–June	School implement action plan developed in Phase 1.
	2019	Jan	Non-compulsory session.

SLT CPD

Professional development for the senior leadership team was delivered in four half-day sessions, for a total of 12 hours, over the course of three terms (or one academic year) with an additional, non-compulsory session held the year after the main components of the intervention had been delivered (January 2019). Two leaders from each school, including the headteacher, were expected to attend. CPD was delivered by members of the delivery team in geographical 'clusters' (see section Who—providers of the training).

CPD sessions introduced the framework, process, and strategies for the better deployment and effective use of TAs. Session 1 introduced the key principles of the MITA approach using the EEF guidance report (Sharples et al., 2016) as an organising structure. School staff were presented with the broad principles and the evidence on TA impact to establish a clear link between MITA and the research evidence. Furthermore, the first session covered the process involved in conducting a whole-school audit including the steps for developing a clear vision. The first session set out the structure for the three gap tasks that were completed between sessions (see Gap Tasks below).

The focus of Session 2 was to look in detail at the first four recommendations in the EEF guidance report,[10] which related to everyday classroom practices by setting out what these principles look like in the classroom through shared practical strategies and ideas.

Session 3 was an additional session developed to respond to feedback received from the external consultant review visits (see unplanned adaptations). The session focused on sharing how the SLT can provide support for teachers and TAs; it provided schools with an opportunity to share their best practices and pick up ideas for classroom practices from one another. This session also briefly covered the effective use of TAs in delivering structured interventions out of class.

---

[10] The first four recommendation in the EEF TA Guidance report:
Recommendation 1: TAs should not be used as an informal teaching resource for low attaining pupils;
Recommendation 2: Use TAs to add value to what teachers do, not replace them;
Recommendation 3: Use TAs to help pupils develop independent learning skills and manage their own learning;
Recommendation 4: Ensure TAs are fully prepared for their role in the classroom.

In Session 4—the last SLT session—schools reviewed what they had done and shared successes and next steps. Ahead of the session, schools prepared a poster that was used as a basis for table discussion about their progress, impact, experiences, and lessons learned on their 'MITA journey'.

An additional, optional session was held in the second year in January 2019 and was delivered to help schools maintain momentum, in the absence of any planned input from MITA, and to provide some extra support based on the recently published EEF guidance report on implementation: Putting Evidence to Work. The session was held in London at UCL-IOE, lasted three hours, and focused on the principles of implementation from the EEF guidance report, Putting Evidence to Work, and was delivered by one of its authors. Twenty-four intervention schools attended. It should be noted that usually MITA is delivered in three sessions across two terms. However, for the trial, the MITA team delivered four sessions across three terms with the additional top-up session to maximise the extended timeline over two academic years and to give the intervention the best chance of success.

The CPD sessions for SLTs are referred to as 'MITA sessions'.

TA and teacher CPD

Two half-day training sessions for TAs were delivered in schools, one early in the spring term 2017 and a second one four weeks later with a gap task focused on the basic principles of MITA for TAs in between the two sessions. The two sessions totalled six hours and took place in preparation for the full implementation of the action plan and changing TA practice. The main aim of these sessions was to introduce approaches that promote effective interactions with pupils (for example, by promoting pupil independence and by applying the scaffolding framework). All TAs in the school were expected to attend.

On the same days as the TA training took place, teachers received one twilight training session on how to plan and organise classrooms effectively to make the best use of TAs' new skills and knowledge. This was delivered in spring 2017. All teachers in the school were expected to attend. Originally this had been planned to be two hours, but in reality MITA had between 60 and 90 minutes.

A member of the SLT involved in the programme was also asked to attend the teacher and TA training so that the training could be fully embedded and supported as implementation proceeded.

The training sessions for TAs and teacher are called Maximising the Practice of Teaching Assistants (MPTA) training sessions.

External consultant visits and support

External consultants were deployed in this programme to provide support to the SLT, helping to identify gaps in current practice as well as to develop and implement a change management plan. In total, there were three consultant school visits (one per term) over the 2017/2018 school year. The consultants kept a record of the planning, implementation, and change processes within a school by using a predetermined list of items in a checklist (see Appendix I). Visit 1 was a full review of current practice—leading to a report that was based on discussions with school staff—and school observations. The results were given to school leaders before CPD Session 2 to feed into the overall audit. Visit 2 was a monitoring visit to check on progress with the development of the action plan. Visit 3 was a lighter-touch review visit with a report based on a learning walk and discussions with school staff.

Gap tasks and action plans

MITA also includes structured gap tasks that occur between SLT CPD sessions with a detailed and achievable action plan as the key output. The first gap task consisted of 'auditing and visioning': a critical review of the current practice and development of a vision of what school leaders would like to see at the end of the process and of changes they expected to see along the way. Schools were provided with resources (for example, the TA Deployment Review Guide[11] and results from staff survey) to complete the self-evaluation components of the audit. The expert consultant additionally conducted an independent review of practice (including talking to staff, doing observations). The purpose of the consultant's review was to provide independent verification of the findings reported by school leaders and to work with schools to refine their self-evaluation.

---

[11] https://educationendowmentfoundation.org.uk/tools/guidance-reports/making-best-use-of-teaching-assistants/

The second gap task (between SLT CPD Sessions 2 and 3) focused on developing a detailed action plan and early piloting of new strategies using the findings of the self-evaluation to guide this process. One final task (between SLT CPD Sessions 3 and 4) involved a final light-touch review by consultants in the final term. The purpose of this final task was to ensure that schools had a realistic, actionable plan in place for the start of Phase 2 (that is, whole-school roll out from Sept 2018). There was an additional gap task for TAs between their two sessions aimed at improving TA familiarity with MITA principles. Activities were targeted to TAs' needs and were taken from the book *TA Guide to Effective Interaction* (Bosanquet et al., 2015).

Who—providers of the training

MITA was delivered by the researchers that had developed the programme, including researchers from University College London Institute of Education (UCL-IOE)[12] and London Leadership Strategy (LLS). The team at IOE had full responsibility for the delivery of the programme in this trial. LLS provided the external consultants with training and support from UCL-IOE.

How the programme changed—planned and unplanned adaptations

Planned adaptations—tailoring

Although all schools, in principle, received the same training and were supported by an external expert from the same organisation, there was some tailoring depending on the starting point for each school. For example, each school's vision and action plan, resulting from Phase 1, was adapted to each school's context and current situation. This tailoring is embedded within the structure of the programme and was expected.

Unplanned adaptations—modifications

Normally MITA is run over two terms and comprises three SLT sessions. However, for the purpose of this trial some adaptations were made before delivery to make full use of the two year evaluation (see SLT CPD). An additional SLT CPD Session 3 was added, developed in response to feedback received from the first external consultant review visits in 2017. This meant that the previous Session 3 became the new Session 4.

Owing to the complexities of the trial, the intervention and evaluation teams developed a communication and 'keeping in touch' strategy to keep schools engaged throughout the project, especially for the second year when schools were no longer receiving training. This engagement included termly newsletters, which are not normally part of the delivery of MITA. An additional, optional session was added to support schools during Phase 2 in January 2019 (see SLT CPD).

Evaluation objectives

The aim of the evaluation was to assess the extent to which MITA leads to an improvement in pupils' attainment (see Outcome Measures) when comparing MITA schools to business-as-usual schools. A full evaluation protocol and statistical analysis plan (SAP) can be found on the EEF webpage.[13]

The evaluation tested several hypotheses relating to the impact of MITA. Specifically, that MITA:

1. has a positive effect on pupils' attainment, specifically:

    a. better reading outcomes (vs controls) for Year 3 pupils; and

    b. better reading and mathematics outcomes (vs controls) for Year 6 pupils;

2. results in improved deployment of the school TA workforce;

3. results in change of school/classroom practices, specifically:

    a. practices aimed at improved interactions between TAs and pupils; and

---

[12] One of the developers at the planning stage worked at the University of East London (UEL). UEL were not, in the event, involved in the delivery of the programme. Some of the initial recruitment documents included in the appendices reflect this by including UEL in the list of project partners.

[13] **https://educationendowmentfoundation.org.uk/projects-and-evaluation/projects/maximising-the-impact-of-teaching-assistants/**

      b.   practices aimed at fostering pupil independence; and

    4. has a positive effect on pupils' engagement with learning.

Looking at the ToC (Figure 1) it is clear that deployment (hypothesis two), school/classroom practices (hypothesis three), and pupil engagement (hypothesis four) are seen as initial outcomes, while attainment outcomes (hypothesis one) are seen as longer-term outcomes.

Ethics and trial registration

The trial has been registered on the ISRCTN (International Standard Randomised Controlled Trial Number) registry, which is used to describe randomised controlled trials and efficacy trials at inception. The trial has been assigned an ID registration number: ISRCTN21056851. The trial was registered retrospectively by RAND Europe.

The ethics processes were in accordance with the ethics policies adopted by the University of Cambridge. Ethical clearance for the intervention was granted by the Cambridge University Psychology Research Ethics within the Department of Education at the University of Cambridge.

School recruitment was carried out by the delivery team. All eligible schools were invited to take part in the evaluation. The recruitment documentation including a Memorandum of Understanding (MoU), and Information Sheet are provided in Appendix C. The Methods section provides further detail about school recruitment.

None of the members of the evaluation team had any conflicts of interest in undertaking this evaluation.

Data protection

This project was set up in 2017, prior to the General Data Protection Regulation (GDPR). Therefore, in terms of fair processing of personal data, at that time the project fulfilled Condition 1 of 'processing personal data' in Schedule 2 of the Data Protection Act (DPA) on the basis that the data subjects gave their implicit consent to participate in the study via an opt-out letter to parents at the beginning of the trial.

Before pupil data was sent to the delivery team, parents or legal guardians were sent an information sheet and opt-out form by the school; parents or legal guardians had the right to opt children out of the trial at any point. Schools sent forms after the school representatives had signed the MoU that described what the trial involved. The delivery team was responsible for ensuring distribution of the information sheet and collection of withdrawal forms. Furthermore, the cover page for each survey questionnaire collected as part of the study by RAND Europe contained an informed consent sheet and data protection statement for respondents. It informed respondents that participation in the survey was entirely voluntary. Also, the surveys did not collect personal identifying information such as respondent's name, date of birth, or contact details.

As currently applicable under GDPR, the delivery and evaluation teams obtained personal data from schools and pupils as data controllers. Any data sharing required was governed by the data-sharing agreement signed between the funder (the EEF), the delivery team (UCL-IOE), and the evaluation team (RAND Europe). RAND Europe obtained baseline and pupil outcome data from its subcontractor (Australian Council for Educational Research, ACER), which acted as a processor pursuant to appropriate data-sharing terms in its subcontract. Data obtained by ACER was requested on the legal basis of legitimate interests. The request for data fell under GDPR as implemented by the Data Protection Act (2018). Data sharing between RAND Europe and ACER was governed by a contract between RAND Europe acting as data controller and ACER as data processor. A variation was made to this agreement in August 2019 to reflect and comply with changes in EU legislation (the introduction of the General Data Protection Regulation). This amendment clarified the processing duties under GDPR, obliging both parties to confidentiality and taking all needed security measures, and notifying partners and authorities in case of data breaches. Further, it required ACER to assist RAND with responding to requests made by participants of the study with regards to their data rights, and ensuring that sufficient deletion procedures were put in place.

RAND Europe obtained baseline data and outcome data for Year 6 pupils from the National Pupil Database (NPD) and for the younger cohort of pupils (Year 3 pupils in 2018/2019) from its subcontractor (ACER), which acted as a processor pursuant to appropriate data sharing-terms in its subcontract. Personal data obtained by ACER was on the basis of legitimate interests and pupils and parents were provided with age-appropriate fair processing privacy notices that explained the use, storage, and secure handling of the data. RAND Europe provided a privacy notice to schools

and asked schools to share this with parents. This privacy notice explained the trial in short and detailed what data was collected, how it was collected, why, what the legal basis for processing was, what the data was being used for, how it was shared between parties involved in the study, how it was being kept secure, and how long it was going to be kept (that is, until the end of trial) (see Appendix C).

The evaluation team has undertaken measures to ensure the trial is GDPR compliant. RAND Europe adopts good industry practices regarding the protection of personal data as part of its obligations as a data controller under the Data Protection Act 2018 and takes appropriate technical and organisational measures to protect personal data. Individuals targeted by the study have the right to oppose, have access to, rectify, or remove personal or sensitive personal data held by RAND Europe. In order to ensure GDPR compliance, all data has been only saved on GDPR-compliant, secure servers inside the EEA or U.K. RAND Europe is registered with the Information Commissioner's Office (ICO), registration number Z6947026 and is certified for adhering to ISO 9001:2015 quality management practices.

Furthermore, in order to obtain data from the selected case study schools for the implementation and process evaluation, RAND Europe, via the University of Cambridge, collected consent forms for headteachers, teachers, and TAs who volunteered to participate in an interview.

RAND will delete all data one year after the project ends. For the purpose of research, following the completion of the trial, the data will be shared with the EEF data archive at which point the EEF will become the data controller. The data will be shared with the EEF's archive manager and, in anonymised form, with the Office for National Statistics and potentially other research teams. Further matching to the NPD and other administrative data, including Key Stage 1, may take place during subsequent research.

Project team

The intervention was developed and implemented by UCL-IOE. UCL-IOE was responsible for recruitment, all aspects of programme delivery, and ensuring all prerequisites for programme implementation were in place. UCL-IOE was responsible for training school staff and providing support to all schools as per the terms of the MoU. In addition, it provided the key indicators of implementation and compliance with the intervention. It also administered the baseline school staff survey. The delivery team at UCL-IOE comprised Rob Webster (project lead and delivery), Sally Franklin (project delivery), Kelly Golding (project delivery), Paula Bosanquet (project delivery), and Aimee Shaw (project management).

The evaluation was conducted by RAND Europe in collaboration with University of Cambridge. RAND Europe was responsible for the outcome and process evaluations, trial design, analysis, reporting, and quality assurance of the evaluation. As partner, the University of Cambridge was responsible for observations and interviews as part of the process evaluation. The evaluation team in RAND Europe comprised Elena Rosa Brown (August 2019–present, project leader), Dr Sashka Dimova (project management, field work, and analysis), Dr Andreas Culora (analysis), Eleftheria Lakovidou (analysis), Dr Alex Sutherland (previous project leader, formerly RAND Europe), and both Rob Prideaux (analysis, formerly RAND Europe) and Dr Julie Belanger (IPE lead, formerly RAND Europe). The evaluation team in the University of Cambridge comprised Dr Sonia Ilie and Sara Curran (field work and analysis) and Professor Anna Vignoles (project advisor).

Methods

Trial design

The main aim of the trial was to assess the extent to which MITA leads to an improvement in pupils' attainment that is greater than that observed in business-as-usual schools (see Evaluation objectives). Given the whole-school nature of the intervention and the changes it seeks to establish, cluster randomisation with randomisation at the school level was the preferred option.

This efficacy trial was planned and executed as a stratified, two-arm, cluster-randomised controlled trial (cRCT) with schools recruited from four geographical regions: the West Midlands, Hampshire, Greater London, and Suffolk.[14] In total, 128 primary schools were randomised, however baseline data was available for 124 schools. More details on the design can be seen in Table 4 below.

Table 4: Trial design

Trial design, including number of arms		Two-arm cluster randomised controlled trial.
Unit of randomization		School.
Stratification variable(s) (if applicable)		i. Geographic area: regions—West Midlands, Hampshire, Greater London, and Suffolk; ii. prior school attainment.
Primary outcome	Variable	Pooled i. Year 3 pupils: attainment in reading; ii. Year 6 pupils: attainment in reading.
	Measure (instrument, scale, source)	i. Year 3 pupils: Essential Learning Metrics (ELM) for Reading, 0–29, ACER; ii. Year 6 pupils: Key Stage 2 reading score (KS2_READMRK), collected at the end of 2018/2019, 0–50, NPD.
Secondary outcome(s)	Variable(s)	i. Pupil engagement; ii. Change in practice measures; iii. Year 6 pupils: KS2 mathematics score (KS2_MATPOINTS).
	Measure(s) (instrument, scale, source)	i. Engagement vs. Disaffection with Learning: student-report (EvsD); ii. Staff survey items (change in practice instrument); iii. Year 6 pupils: KS2 mathematics score (KS2_MATMRK), collected at the end of the 2018/2019, 0–110, NPD.
Baseline for primary outcome	Variable	Pooled i. Year 3 pupils: attainment in reading; ii. Year 6 pupils: attainment in reading.

---

[14] Schools were recruited from areas with high rates of FSM-eligible pupils. For practical reasons, schools were clustered into regions so that schools were within reasonable travelling distance of the sessions.

	Measure (instrument, scale, source)	i. Year 3 pupils: ELMS reading tests, collected at the end of 2016/2017, 0–29, ACER;
		ii. Year 6 pupils: KS1 reading results (NPD variable: KS1_READWRITPOINTS), NPD.
Baseline for secondary outcome(s)	Variable	Mathematics attainment
	Measure (instrument, scale, source)	i. Year 6 pupils: KS1 mathematics results (NPD variables: KS1_MATPOINTS), NPD.

The trial ran over three academic years. To ensure clarity in reporting, we refer to these different phases as pre-RCT year (2016/2017 school year), Phase 1 (2017/2018 school year), and Phase 2 (2018/2019 school year).

Schools were assigned to either treatment (MITA) or control (business as usual). Schools that were assigned to treatment took part in the MITA programme that was delivered over the 2017/2018 school year (with an additional optional SLT session run in January 2019). Schools that were assigned to control received (i) newsletters from UCL-IOE about the progress of the MITA trial, (ii) SEND training (not related to MITA) delivered by UCL-IOE in summer 2018, (iii) £250 in autumn 2017, and (iv) £500 upon completion of the evaluation process.[15]

All schools signing up had a 50% chance to be assigned to the treatment group within the school geographical clusters and attainment profile (see Randomisation section below). Given that this was a whole-school intervention, all teachers and TAs (including those with different role titles but ostensibly working in pupil/classroom support roles) in treatment schools across all years were eligible for, and received, the intervention.

Given the fact that MITA's impact on pupil attainment is considered a long-term outcome (see ToC, Figure 1) it was planned to measure impact one year after delivery of the MITA programme, allowing schools one year to begin implementing their plans. Therefore, baseline assessment was undertaken in 2017 for pupils in Year 1 and Year 4 (the pre-RCT year) with follow-up occurring in 2019 for pupils in Year 3 and Year 6 (at the end of Phase 2).

The primary outcome was pupil attainment in reading at the end of Phase 2 (Year 3 pupils) as measured by an external reading test (ELMS - Reading), and reading at the end of Phase 2 (Year 6 pupils) as measured by reading results in the Key Stage 2 test. The outcome measures are described in more detail in the Outcome measures section.

Trial design updates

There were several alterations linked to several components of the study design that were undertaken since the trial was set up. The following paragraphs summarise changes related to recruitment, school incentives, trial timeline, and sample considered for the primary outcome analysis.

Recruitment and incentives

Recruitment was slower than anticipated and, in agreement with the EEF, it was extended to a fourth region (Suffolk) to help recruit the required number of schools. After the slow start, the project and evaluation teams agreed on a number of steps to support recruitment, which had a positive impact, including reducing the entry fee for treatment schools from £1300 to £650, allowing junior schools without a feeder infant school to join the trial (seven such schools were ultimately recruited), and extending the period for recruitment from the beginning until the end of June.

---

[15] It had originally been planned to include a 'widening participation' event for Year 6 pupils in control schools, however, due to the logistics of trying to arrange this, it was swapped for (ii) the SEND training

Randomisation and sample size

Randomisation was completed within one week of the closure of school recruitment and included 128 schools. For most schools, the baseline data set out in the protocol was collected before randomisation, including demographic data. However, for some schools the independent test for Year 1 pupils was not complete, which resulted in incomplete baseline data for small sample of the randomised schools. We know from the testing company that it could not organise testing in schools (n = 11) for the following reasons:

- junior schools were randomised but they did not have Year 1 cohort (seven schools);

- the school did not want to take part in testing (two schools; for more information on the reason why schools would not sign up to testing please see Attrition section below); or

- schools withdrew from the intervention and the evaluation because of the perceived burden it would place on them (two schools).

The net result of the problem was that at the point of analysis it become clear that there are some mismatches in terms of the number of schools that were randomised and the number of schools that could be considered for the primary outcome analysis. As a result of this mismatch, we consider that the maximum number of schools that could be included in the analysis is the sum of the total number of schools with complete data for the younger and older cohort at baseline (N = 117) and the number of junior schools (N = 7) for which the outcome measure is based on the attainment score for the older cohort only. Overall, 124 schools could have been considered for the primary outcome analysis. The approach undertaken to construct the primary outcome measure is described in more detail in the Outcome measures section.

Outcome measures

Some elements of the impact analysis are not run as planned at the protocol and statistical analysis plan (SAP) stages, including:

Primary outcome changes

It was agreed that the primary outcome measure described in the protocol and in the SAP should be modified in response to the updated EEF guidance. At protocol stage, a pooled construct from maths and reading attainment was specified as the primary outcome measure. However, in line with the EEF's guidance—suggesting that is preferred to avoid complex multiple outcome—it was decided to use reading attainment across Year 3 and Year 6 as the primary outcome.

Secondary outcome changes

Owing to the adaptation in the primary outcome measures, attainment in maths for the Year 6 cohort is added as an additional secondary outcome.

Additionally, a decision was made that the secondary outcome measuring change in practice should be modified due to data limitations. One of the components of the measure, quality of TA-pupil interactions, was excluded from the measure construct as it was concluded that there were no valid data available in the school staff survey to capture change (see Change in practice measure).

More information on the outcome measures is provided in the Trial design and Outcome measures sections of the report.

Trial timelines

Some elements of testing occurred slightly later than originally planned. For example, the baseline staff survey and process evaluation visits were deferred to September 2017, rather than being undertaken in the 2016/2017 summer term. This was partly due to the need to extend the recruitment period, and partly to reduce the burden on schools by collecting process evaluation survey data at the same time as other survey data required by the MITA team.

Participant selection

The following eligibility criteria for participating school applied:

- schools should not have previously engaged in MITA and/or Maximising the Practice of Teaching Assistants (MPTA) training sessions;[16]

  schools should not have taken substantial prior actions following recommendations from the EEF TA guidance or MITA or MPTA handbooks; and

- schools should not have been in special measures OR facing imminent leadership changes.

Two- or three-form entry primary or junior schools were prioritised, but one- and four-form entry schools were also allowed to take part. Similarly, schools with higher than average proportions of SEND and FSM pupils were prioritised if possible.

Schools from the following four regions were eligible for the trial:

- Cluster 1: West Midlands (principally around Birmingham and Wolverhampton).

- Cluster 2: Hampshire.

- Cluster 3: Greater London.

- Cluster 4: Suffolk.

Due to a far-reaching social media campaign, a number schools from outside these regions expressed interest. To ensure the trial had enough schools it was decided to include these schools from outside the regions provided they would be willing to travel to the nearest regional SLT session.

Participating schools were asked to sign a MoU, which outlined the roles and responsibilities of all stakeholders involved and clearly set out the requirements for schools. Given the limited training resource, school recruitment was on a 'first come first served' basis—meaning that schools were accepted on the trial once they had completed the required paperwork (that is, signing of MoU and sharing list of teachers and TAs). Given that recruitment was extended, there was not sufficient time to check if schools had completed the prerequisite tasks as outlined in the MoU—that is, provision of pupil Unique Pupil Numbers (UPNs) and baseline data—before randomisation.

After a number of broad recruitment activities were conducted, including a social media campaign and targeted emails to schools, a set of events were held in each of the four geographical clusters where the MITA team leads (UCL-IOE) presented the project and shared expression of interest (EOI) information. EOI information was also available online, with a video presentation of one of the sign-up events. The team followed up with schools that expressed interest and sent a MoU. This staged communication approach spared schools receiving too much information in the first instance.

The target number of schools required to take part in the evaluation was 100, in line with the sample size (see below) and based on the capacity of the intervention team to deliver training at scale. The resulting sample for randomisation comprised of 128 schools.

Teachers and teaching assistants

Given MITA is a whole-school intervention, all teachers and TAs (including those with different role titles but ostensibly working in pupil/classroom support roles) in treatment schools across all years, were eligible for, and received, the intervention.

Pupils

As MITA is a whole-school intervention it was felt that all years would benefit. With the aim of keep testing costs low and minimise the burden on schools, only two cohorts of pupils (that is, Year 3 and Year 6 pupils at the end of the 2018/2019 school year) took part in the data collection activities in this trial. Year 6 was selected as data is available on pupils' attainment using national, standardised KS2 tests, with results accessible via the National Pupil Database. This reduced burden on schools by removing the need for direct testing for the purposes of this evaluation. Year 3 was selected to undertake testing as this group had sufficient exposure to MITA for there to be a probable chance of effect.

---

[16] MPTA is designed for TAs to develop and apply new skills. MPTA training was offered in the MITA trial. For more information on the course see: **http://maximisingtas.co.uk/courses/maximising-the-practice-of-teaching-assistants.php**

Year 3 pupils who joined the eligible schools after baseline testing were excluded from the evaluation (but not the intervention). Parents were given the opportunity to opt out from the evaluation via a standardised EEF opt-out consent letter that was distributed by participating schools once schools had agreed to take part in the study (see Ethics and trial registration). Our approach adhered to an intention-to-treat analysis in the event of students migrating between treatment and control schools.

Outcome measures

Baseline outcome measure

The baseline primary outcome measure comprises a pooled measure of two different outcomes: for the Year 3 pupils, reading attainment at the start of the trial was measured through an external reading test (ELMS Reading—see primary outcome below), which was independently administered and invigilated by a third party provider (ACER) in June and July 2017 when these pupils were in Year 1. For the Year 6 pupils, we rely on the Key Stage 1 reading results, which reflected the performance of these pupils at the end of Year 2, two years before randomisation was conducted. These were collected from the NPD using variable KS1_READWRITPOINTS. Both baseline measures were standardised for each year respectively before being pooled for analysis (see further details below).

Additionally, we rely on KS1 results in maths (KS1_MATPOINTS) for Year 6 pupils as KS2 maths results are included as a secondary outcome measure.

Primary outcome

To increase the power of the statistical analysis, it was agreed to pool attainment in reading for Year 3 and Year 6 pupils. As a result, the primary outcome is a pooled measure for attainment based on (i) pupil attainment in reading for the Year 3 pupils and (ii) pupil attainment in reading for Year 6 pupils. For the seven junior schools (that is, those without Year 3 baseline data), the outcome is based on the older cohort only. Therefore, the pooled reading score is composed of results from all schools with complete data for Year 3 and Year 6 at baseline (N = 117) and data for Year 6 from the seven junior schools.

Outcome testing for the Year 3 pupils was completed by a third-party provider (ACER) using the ELMs Reading Comprehension test at the end of summer term 2019.[17]

The ELMs was designed for pupils from Year 2 to Year 10 and reports achievement in reading comprehension on a continuous scale. The scale is represented in both scale scores and describes 'bands of achievement', allowing progress to be monitored and mapped over time across the years of schooling. This test covers a range of text types (narrative, persuasive, informational) to assess a pupil's ability to retrieve information, interpret explicit information, and interpret by making inferences and reflecting on texts. ELMs takes place online, is standardised, can be administered to an individual or group (limited by number of computers), is not adaptive, and is untimed (but 40 to 50 minutes were recommended as this is likely to be the maximum time needed to complete the test). For this trial, the EEF required a paper version of the test to be used over concerns about online administration, particularly in schools with older IT infrastructure.

Piloting was performed by ACER in April 2017. The piloting was to assess the suitability of the ELMs reading comprehension test for baseline testing for pupils at the end of Year 1. ELMs is intended for Year 2 pupils so the piloting was used to check for floor or ceiling effects. Results from the piloting, along with the write-up of the testing provided by ACER, are included in Appendix 2 of the protocol (Sutherland 2018).

All items in the ELMs test have been reviewed by English teachers (in England) for linguistic, cultural, or curriculum bias, and all items are multiple selection responses that minimise marking bias. ELMs is designed with reference to the National Curriculum.

External examination ACER staff, who were blind to allocation, invigilated and marked the tests. Final data was then supplied to RAND Europe for analysis. Schools were not told in advance which test would be used but were informed about the general areas to be tested.

---

[17] https://elms.acer.org/about/reading-comprehension

For the Year 6 pupils, attainment was measured through their Key Stage 2 scores. Specifically, impact is based on the fine grade score for reading (variable KS2READMRKN in the NPD extract). Pupils completed this test in Year 6, at the end of the 2018/2019 school year. The KS2 test provides a reliable, efficient, and equitable way of obtaining outcome data on attainment for this group as they are national tests, marked independently. These tests have the advantage of being consistent across the school population and correlate well with KS1 results, which were used as the baseline measure attainment scores for the cohort.

For the purpose of the primary outcome analysis, the reading attainment measures for Year 3 and Year 6 pupils were standardised, with a mean of zero and standard deviation of one, then pooled and included in the same model. The coefficient for the relationship between MITA allocation and the primary outcome measure (pooled for the two cohorts) will represent the main result of the trial (see Primary analysis).

Both outcomes were also analysed independently as set out in the Additional analysis. This involves carrying out the analysis on the Year 3 and the Year 6 sample separately, and then taking the mean of the two resulting effect sizes.

Secondary outcomes

There are three secondary outcomes captured in this trial in addition to the primary outcome measure:

- Year 6 attainment in maths;
- pupil engagement in school; and
- change in practice measure.

For the Year 6 pupils, maths attainment was measured through their Key Stage 2 scores—specifically, the fine grained score for maths (variable KS2MATSCORE in the NPD extract). Pupils completed this test in Year 6, at the end of the 2018/2019 school year. As for reading, the raw KS2 test provides a reliable, efficient, and equitable way of obtaining outcome data on attainment for this group as they are national tests, marked independently. These tests have the advantage of being consistent across the school population and correlate well with KS1 results, which were used as the baseline measure attainment scores for the cohort.

It is expected that a better deployment of TAs and improved quality of interactions will contribute to improved pupil engagement. The instrument used to measure this was the Engagement versus Disaffection survey developed by Skinner et al. (2009). The scale captures behavioural and emotional engagement and dissatisfaction in the classroom and has adequate score reliability (0.79), adequate cross-time correlation (0.63), and high factor loadings on the factors (ranging from 0.55–0.84). Further details on the psychometric properties of the test are reported at length in Skinner et al. (2009).

The engagement survey was provided on paper. All questions in the survey are multiple-choice and children marked the answer by ticking a box. The questionnaire for the Year 3 cohort was invigilated by ACER staff who were blind to allocation status. For the Year 6 cohort, the questionnaire was administered by the teachers who were not blind to allocation.

The instrument was administered to a small sample of pupils at endline in order to minimise costs. Schools (N = 80) were randomly selected to take part, with randomisation being conducted by a member of the evaluation team. Fifty-four schools responded to requests for data and 26 schools chose not to participate equalling an attrition rate of 33% (for a discussion of attrition please see Analysis section). Overall, data was obtained for 1,337 Year 3 pupils from 33 schools, with 818 pupils from 20 schools in the treatment condition and 519 pupils from 13 schools in the control condition; data for the Year 6 cohort is based on 1,001 pupils from 25 schools, with 548 pupils from 12 schools in the treatment condition and 453 pupils from 13 school in the control condition. Some schools provided data for some year groups and not others.

Change in practice measure

The change in practice measure asserts changes in the following aspects of practice:

- deployment of TAs—teachers spending more time, and TAs less time, with lower-attaining and SEND pupils; and
- increased quality of preparation—in the perceived quality of TAs' pre-lesson preparation and TAs' feedback to teachers; improvements in opportunities for, and the quality of, teacher-TA liaison (see examples of questions in Appendix G).

The items used to construct the measure were taken from the TA and teacher online surveys, collected at baseline and again at the end of Phase 2. The survey items that were used for the measure construct, including the coding for the measure, are described in more detail in Appendix G: Measure development: analytical approach.

The two categories, deployment of TAs and preparation (opportunities for and quality of) receive equal weighting as part of the change in practice measure. To be able to observe change, the same items were measured at baseline and at the end of Phase 2 across intervention and control schools. The measure is constructed at school level since we do not hold personal identifiable information for school staff.

Schools that did not respond to the survey were excluded from the analysis. For those schools that responded to the survey, missing values in survey items were excluded from the analysis and scores were averaged across all staff from each school that had completed the TA and teacher surveys, respectively. For example, if one item had three responses from three different staff at the same school, the average score from across all three responses would be used; if, however, one item had two responses from three staff members (that is, one staff member did not respond to the item) the average from the two responses would be used. This approach meant that schools were not penalised if only one person provided a response to the survey: in practice this meant that if three TAs had responded to the TA survey the average of their scores was used; if only one TA had responded, a single response was used. If no one responded to the survey, then the score was coded as missing and the school would not be included in the analysis. The potential for variability in response rates means that the measure is not truly representative: to be truly representative, all respondents from each school would have needed to comment on the survey. However, given the requirements to minimise burden on schools, this approach was seen to be acceptable. As such, the measure provides a 'snapshot' at the school level.

At protocol stage a component on the quality of TA-pupil interactions was defined as a key aspect of the change in practice measure. However, the evaluation and project team agreed to exclude this component at the point of analysis as it was concluded that there was no valid data available to measure changes to the quality of TA-pupil interactions. There were some survey items that captured quality for the intervention schools, but in the absence of data for control schools there was no valid analytical approach that could be used to understand how treatment allocation is related to the outcome, regardless of how well it was measured in intervention schools. As a result, this component is not entered in the change in practice construct.

Survey data was used to populate the measure in an attempt to minimise burden and increase response. However, the use of survey data for the change in practice measure does carry some significant limitations. Firstly, there was considerable missing data with an attrition rate of 46% (59 of 128; for a discussion of attrition please see Analysis section) and relatively high differential attrition, with more schools responding at endline in MITA schools than in control schools (45 of 62 and 24 of 66, respectively). Secondly, the measure is constructed at school level since we do not hold personal identifiable information for school staff. This limits the ability of the evaluation to link TA practice to pupil outcomes. Finally, the measure was developed specifically for this trial and the MITA intervention. Given timescales, it was also not possible to pilot or validate the measure. As such, it is unclear how sensitive the measure is at capturing change.

Sample size

The initial power calculations in the protocol (Sutherland, 2018) were based on the information provided in the set-up meetings with the delivery team and the EEF. The target number of schools was a minimum of 100, based on the capacity of the intervention team to deliver training at scale. It was assumed that there were on average 33 pupils per class and that with 100 schools, two year groups per school, and two-form entry (for example, around 130 pupils per school split in four classes), data would be collected on an estimated 13,000 pupils (see Table 5).

One hundred and twenty-eight schools were randomised. The additional schools were included as the delivery team successfully over-recruited but was able to support the increase in numbers without jeopardising quality of implementation. At analysis stage, attainment score was available for 116 schools and an average of 93 pupils per schools.

Estimation of ICC

The Interclass Correlation Coefficient (ICC) for the main analysis was based on the pooled attainment measure score, and it is 0.063. The ICC was estimated using the `loneway` command in Stata. We have not made any adjustments when calculating the ICC as adjusting for covariates leads, in general, to smaller ICCs. The school-level ICC derived

from the primary outcome measure is lower that the ICC used for the MDES estimations at protocol or at randomisation stage. The power calculations at these two timepoints used an ICC of 0.13 as per EEF guidelines.

MDES calculations

The minimum detectable effect size (MDES) calculations were based on the primary outcome for this trial, the pooled measure of pupil attainment (see descriptions below).

The initial power calculations, which were based on the EEF guidelines, assumed 53% of level one variance explained by pre-test scores and the stratification variables (EEF, 2015). The assumed level two (schools) explained variance was zero. All power calculations used two-level clustered design and assumed an alpha of 5% and an intended 80% power to detect effects. MDES calculations were performed using PowerUp! (Dong and Maynard, 2013).

Using the parameters set in the study protocol and with equal allocation to treatment and control, the MDES was evaluated at d equal to 0.207. The same estimates, but with a larger number of clusters to reflect the increased recruitment, was evaluated at d equal to 0.182 at randomisation.

At analysis stage, 116 schools provided data for the construct of the pooled primary outcome measure. The school-level ICC (explained above) based on the primary outcome measure was 6.2%. This resulted in an at-analysis MDES of 0.136, smaller in size that the MDES at protocol (MDES = 0.207) and randomisation (MDES = 0.182) stages. The MDES reported for subgroups are estimated for the subgroups sample only and would yield a MDES of 0.158 for the FSM subgroup and a MDES of 0.175 for the SEND subgroup. Further detail can be found in Table 5.

Table 5: Sample size calculations

		Protocol	Randomisation	Analysis		
		Overall	Overall	Overall	Sub-group: FSM	Sub-group: SEND
MDES		**0.207**	**0.182**	0.136	0.158	0.175
Pre-test/ post-test correlations	Level 1 (pupil)	0.75	0.75	0.6	0.6	0.6
	Level 2 (class)	NA	NA	NA	NA	NA
	Level 3 (school)	0	0	0	0	0
Intracluster correlations (ICCs)	Level 2 (class)	NA	NA	NA	NA	NA
	Level 3 (school)	0.13	0.13	0.062	0.062	0.062
Alpha		0.05	0.05	0.05	0.05	0.05
Power		0.8	0.8	0.8	0.8	0.8
One-sided or two-sided?		Two-sided	Two-sided	Two-sided	Two-sided	Two-sided
Average cluster size		130	130	93.09	21.29	12.25
Number of schools	Intervention	50	64	54	54	54
	Control	50	64	62	62	62
	Total	100	128	116	116	116
Number of pupils	Intervention	6,500	8,320*	4,928	1,150	655
	Control	6,500	8,320	5,870	1,316	767
	Total	13,000	16,640	10, 798	2,466	1,422

* The number of pupils at randomisation was unknown. It was assumed that, on average, data will be available for 130 pupils from 128 schools

Randomisation

The unit of randomisation in this trial was schools with stratification according to region and prior attainment.

Simple randomisation only balances confounding factors and yields unbiased estimates on average (Morgan and Rubin, 2012). For any particular experiment, covariate imbalance may still remain after randomisation in terms of both observed and unobserved characteristics. One approach to address imbalance is stratification.

In this study, geographic area (region or cluster) and average prior attainment (measured at the school level in terms of KS2 results) were considered to be important factors in which the evaluators wanted to actively seek balance (rather than leaving this to the randomisation).

Allocation to treatment or control was conducted in Stata, per the procedure described below, on 5 July 2017, after the baseline external reading test for Year 1 had been either completed or (in a few cases) scheduled to take place, and after schools had provided complete Unique Pupil Number (UPN) list for the Year 4 pupils and returned MoUs. For schools that had not yet completed baseline testing, they were not informed of allocation until after testing had been completed. Randomisation was completed by a member of the evaluation team.

Strata were constructed from the school-cluster membership (geography-based strata, with the four regions described above) and from a mean-split school-level prior attainment. This was created by adding the school level average KS2 English and maths scores together and dividing by two. The mean of this measure was based on sample data, then schools were classified as 'low KS2' or 'high KS2' according to whether they were above or below the mean. Those schools with exactly the same mean as the average would have been allocated to 'low KS2', but there were no schools with that value. This means that, for example, a school might be from the 'West Midlands' and have a 'high' KS2 score.

Given that five schools did not have prior attainment data available, they were randomly allocated to hi/lo (via a coin flip witnessed by another member of the team) prior to randomisation taking place. This was a deviation from the randomisation plan outlined in the protocol.

To deal with unequal treatment fractions we used the command `randtreat` and the option `misfits(global)` in Stata (Carril, 2017). No other randomisation procedure was used.

Table 6 below shows actual allocations by geographic area and prior attainment. In total, 66 schools were allocated to the control condition and 62 schools were allocated to the intervention condition.

Table 6: Allocation of schools to treatment or control by geographic area and prior attainment

Region + KS2 prior attainment	Control	MITA school	Total
Greater London+ high attainment KS2	17	16	33
Greater London+ low attainment KS2	17	17	34
Hampshire+ high attainment KS2	6	5	11
Hampshire+ low attainment KS2	6	5	11
Suffolk+ high attainment KS2	2	2	4
Suffolk+ low attainment KS2	2	2	4

West Midlands+ high attainment KS2	6	6	12
West Midlands+ low attainment KS2	10	9	19
Total	66	62	128

Statistical analysis

Primary analysis

The outcome analysis was undertaken on an intention-to-treat (ITT) basis. This method compares outcome means for the treatment and comparison groups, and subjects are analysed according to their randomised group allocation. This principle is essential to ensuring non-biased intervention effect estimation and compares outcome means for the treatment and comparison groups as they resulted from the randomisation procedure. Therefore, the ITT approach is inherently conservative as it captures the averaged effect of *offering* the intervention, regardless of whether or not the participants comply with the assignment. The analysis was not blind to allocation, however bias was minimised by the provision of explicit Stata analysis code (and output). Full details of the analysis code and relevant output are included in Appendix G: Analysis code and output.

The *primary outcome* consisted of raw pupil-level test scores on the ELMs and KS2 (see outcome measures section) which were then standardised with mean 0 and standard deviation 1, and then pooled. A two-level multilevel model was used to account for clustering of data. Multilevel approaches assume that the schools in the study are a random sample of all schools and the multilevel modelling framework can flexibly handle complex variation within/between schools (Snijders and Bosker, 2011).

The main analysis consisted of the model (1) below, for outcomes of pupils nested in schools, which is:

$$Y_{ijpooled} = \beta_0 + \text{MITA}_j\tau + Z_j\beta_1 + X_{ij}\beta_2 + u_j + e_{ij} \tag{1}$$

where $Y_{ijpooled}$ is the achievement of student *i* in school *j*; MITA_j is a binary indicator of the school assignment to intervention [1] or control [0]; Z_j are school-level characteristics, here the two stratifying variables of geographical location and prior KS2 results (as used for randomisation—so a binary measure); X_{ij} represents characteristics at pupil level (pupil $_i$ in school $_j$), specifically standardised baseline pupils scores (ELMs Reading and Key Stage 1 scores, standardised and pooled as for the outcome measure); u_j are referred to as school-level residuals ($u_j \sim i.i.d\ N(0, \sigma_u^2)$) and e_{ij} are individual-level residuals ($e_{ij} \sim i.i.d\ N(0, \sigma_e^2)$). Equation (1) is known as a 'random intercepts' model because $\beta_{0j} = \beta_0 + u_j$ is interpreted as the school-specific intercept for school *j* and $\beta_{0j} \sim i.i.d\ N(\beta_0, \sigma_u^2)$ is random (as it can take any value). The total residual variance can be partitioned into two components: the between-school variance σ_u^2 and the within-school variance σ_e^2. The between-school variance (ICC) will be calculated in the first instance using a model with no predictors but accounting for the clustering of pupils in schools (the so-called empty model).

Our target parameter, that is, the focal result of the trial, τ, is the average effect of the intervention on pupil outcomes compared to control schools. All analyses were performed in Stata, versions 15.1 onwards (Heß, 2017).

Secondary analysis

This evaluation sets out three secondary outcome measures:

- Year 6 maths attainment;
- a pupil engagement measure derived from the Engagement versus Disaffection survey; and
- a change in practice measure.

For the secondary outcomes of Year 6 maths attainment and pupil engagement, we compared treatment and control classes using the same model specification as above, substituting the secondary outcome. For the maths outcome we used prior attainment on KS1 maths tests conducted when children in Year 6 were in Year 2 as the baseline

measure, with data being available in the NPD. For pupil engagement, no baselines scores were available so this was run without.

Engagement and Disaffection survey

The Engagement and Disaffection survey has positively- and negatively-worded questions, but the summed scale measures the overall level of disaffection with school—as such, higher scores mean a greater level of disaffection.

Change in practice measure

The change in practice measure is created by simple subtraction [Change] = [Endline] − [Baseline]. This can take negative values if the change goes in the opposite direction to that intended. The change measure was entered into a model at the school level with an allocation dummy, and baseline measure to be included if an imbalance was detected at baseline. Responses to baseline questions in the change in practice measure was checked for balance at baseline by allocation group. This was not done with statistical test because any difference would have by definition occurred by chance. The magnitude of the difference will be explored to consider if the difference is substantial enough.

Analysis in the presence of non-compliance

The main framework of analysis for this trial is intention-to-treat, however, at the statistical analysis plan stage it was decided to explore the effect of the intervention on schools that were allocated to the intervention group that implemented the intervention as intended, based on a compliance score.

For the purposes of this trial, 'compliance' was defined as (i) attendance at MITA SLT sessions, (ii) meetings with the external consultant, (iii) TA/teacher attendance at training, and (iv) completion of gap tasks (see Logic Model in Figure 1 above). Compliance was monitored during Phase 2 (during the 2017/2018 academic year).

The compliance measure was designed in consultation with the delivery team and involved separate elements of implementation (see Table 7), weighting some elements as more important than others and giving them a higher score. Weighted scores were applied to SLT attendance at the following activities: MITA SLT sessions, school visit meetings, and MPTA training sessions. Additionally, the following activities were included in the framework to assess compliance: organisation of, and attendance at, development team meetings, percentage of teachers and TAs completing MPTA training, and completion of school visits and associated gap tasks. It should be noted that compliance with the requirements of the programme do not equate to successful implementation of the programme or implementation with high fidelity. However, given the difficulties in collecting data on implementation quality, it was agreed that these elements provided a good understanding of the extent to which schools participated in the programme's key elements.

The measure of compliance was set at a threshold so that those schools above the threshold were regarded as compliers and those below as 'non-compliers' with a reference category of control schools (that is, a three-category variable). A range of objective quantitative measures captured implementation fidelity and compliance, including attendance at CPD sessions and completion of gap tasks. These were collected as part of the delivery of the intervention. As no measure on its own was hypothesised to be a strong indicator of compliance, the compliance score combines several measures as proxies for engagement and adherence.

Each activity was assigned a weighted score linked to the perceived importance of the activity for MITA implementation. Taken collectively, a maximum compliance score of 87 was possible with a minimum score of 70 deemed to be required for schools to be compliant with implementation. The primary compliance activities (shaded blue) are given three times the weight of other activities. If a school scored 70 or above on this measure, the delivery team would consider them to have 'complied'. Missing data on any measure was scored as zero. Schools did not have sight of the checklist used to determine compliance. As per the SAP, the analytical approach for non-compliance would consist of substituting the measure of compliance with the treatment allocation variable:

$$Y_{ijpooled} = \beta_0 + \text{Compliance}_j \tau + Z_j \beta_1 + X_{ij} \beta_2 + u_j + e_{ij} \tag{2}$$

In the end, all schools achieved a high measure of compliance and the compliance measure did not vary across schools meaning that the compliance analysis in this trial is the same as the main effects (that is, owing to no discernible differences in compliance). Therefore, it was agreed with the delivery team and the EEF that there was no need for a compliance-based analysis.

Table 7: Fidelity measures for MITA[18]

Senior Leadership Team buy-in and engagement (responsiveness)				
Measure	**Data source**	**Tasks**	**Compliance score**	**Weighted score**
1. Attendance at all MITA sessions	Register of attendance	a. Attendance at SLT session 1	2	6
		b. Attendance at SLT session 2	2	6
		c. Attendance at SLT session 3	1	3
		d. Attendance at SLT session 4	1	3
			Maximum score	**18**
2. Attendance at school visit meetings	School visit checklist	a. Attendance at Reviewer Visit 1	2	6
		b. Attendance at Reviewer Visit 2	2	6
		c. Attendance at Reviewer Visit 3	2	6
			Maximum score	**18**
3. Attendance at MPTA staff training	MPTA training checklist	a. Attendance at TA training session 1	2	2
		b. Attendance at TA training session 2	2	2
		c. Attendance at teacher training session	1	1
			Maximum score	**5**
Maximum score achievable for SLT engagement				**41**

Adherence to the programme				
Measure	**Data source**	**Tasks**	**Compliance score**	**Weighted score**
4. Development team meetings	School visit checklist	Reviewers record that at least one meeting has taken place (indicative of MITA team having formed)	2	**2**
5. Percentage of Teachers and TAs completing MPTA training	MPTA trainer checklist	a. TA training session 1		
		• 50%-80% of TAs attend	1	3
		• 81%+ of TAs attend	2	6
		b. TA training session 2		
		• 50%-80% of TAs attend	1	3
		• 81%+ of TAs attend	2	6
		c. Teacher training session		
		• 50%-80% of teachers attend	1	3
		• 81%+ of teachers attend	2	6
			Maximum score	**18**
6. Completion of school visits	School visit checklist	a. Reviewer Visit 1 delivered	2	6
		b. Reviewer Visit 2 delivered	2	6
		c. Reviewer Visit 3 delivered	1	3
			Maximum score	**15**
7. Completion of gap tasks	Audit component checklist / Returns (e.g. action plan) / School visit checklist	a. TA Audit (online) completed	2	2
		b. Completion of staff surveys	2	2
		c. Visioning exercise	2	2
		d. Action plan	2	2
		e. Reflective poster	1	1
		f. % of TAs who have **both**: • created mini-goals **and** • identified & worked on self-scaffolding targets with pupils		
		• 50%-80% of TAs	1	1
		• 81%+ of TAs	2	2
			Maximum score	**11**
Maximum score achievable for adherence				**46**

Maximum score achievable for SLT engagement	**41**
Maximum score achievable for adherence	**46**
Total compliance score achievable	**87**
Score required to be compliant	**70**

---

[18] Primary compliance measures are shaded blue and given a weighting of x3 relative to the secondary measures (unshaded). Note that maximum score is not a simple addition for Measures 5 and 7 where points awarded depend on % of teachers/TAs attending training or completing tasks.

Missing data analysis

Missing data can arise from item non-response or attrition of participants, teachers, or schools. Our analysis would always begin with an ITT approach as set out above, meaning that we would look to analyse all classes and pupils as allocated at randomisation, regardless of compliance, and then move from there depending on the extent of missingness and where it occurs in the data.

Our use of NPD data on attainment for the older Year 6 cohort reduces missingness arising from both item non-response and attrition. For the younger cohort we relied on external testing. To minimise the amount of missing data, the external testing company organised one round of mop-up testing. However, despite these precautions the amount of missing data for the younger cohort was significantly higher (see Impact evaluation results section for more details).

As set out in the statistical analysis plan (SAP), we explored attrition across trial arms as a basic step to assess bias (Higgins et al., 2011). Cross-tabulations of the proportions of missing values on all baseline characteristics (at both pupil and school level), as well as on the primary outcome measures, are provided below (see Impact evaluation results section).

To assess whether there are systematic differences between those who drop out and those who do not—and thus whether these factors should be included in analysis—we model missingness in Phase 2 as a function of baseline covariates, including treatment. The analysis model for this approach mirrors the multilevel level model given above (pupils clustered in classes), but the outcome is a binary variable identifying missingness (yes/no).

For less than 5% missingness overall, a complete-case analysis might suffice (that is, assuming data is Missing Completely at Random, MCAR) but our default will be to check results using approaches that account for missingness but that rely on the weaker MAR assumption. Our preference is to use Full Information Maximum Likelihood (FIML) over multiple-imputation because FIML can be estimated in a single model and simulation studies show that it can reduce bias as well as MI (for a discussion of FIML vs MI, see Allison, 2012).[19]

Subgroup analysis

As set out in the SAP, we report mean outcomes by sub-categories of SEND and FSM as a basic descriptive step. As an exploratory analysis, we ran subgroup analyses for SEND and FSM, acknowledging that these analyses would likely be underpowered. In practice, this was not the case (see MDES calculations).

As an exploratory modelling approach, SEND[20] was incorporated into the regression analysis as a binary variable [1] if SEND, [0] otherwise (NPD variable SENprovision_[term][yy]). The SEND indicator was then interacted with treatment allocation to assess the conditional impact of MITA on SEND pupils. We followed the same strategy for FSM pupils [yes/no] (using EverFSM_6_p in the NPD as the FSM variable).

As there may be differential effects for the two cohorts (Year 3 and Year 6) then we also conducted an exploratory analysis of the primary outcome for each year group separately using the same model.

As per the main analysis, we report point estimates and confidence intervals transformed into effect sizes.

Additional analysis

As stated in the SAP, as an additional analysis we undertook multilevel modelling for each of the components pooled in the primary outcome measure. The following measures were substituted as an outcome in equation (1):

- reading attainment for Year 3 pupils based on the ELMs Reading score, with ELMs scores at baseline used as the pre-test; and

---

[19] For missingness on outcome variables, only standard statistical packages such as Stata use ML for estimating parameters so FIML would not be necessary (Allison, 2012).

[20] We note that in DISS, significant differences were found between pupils on the SEND register who did and did not have a Statement (now EHCP). Outcomes were in a negative direction for both groups, but worse for those with a Statement. However, this was not made a focus of the current evaluation due to the underpowered nature of such an analysis. As such, SEND was defined as all pupils in the trial recorded as SEND in the NPD (that is, no distinction between pupils with SEND and those with SEND that had a Statement).

- reading attainment for Year 6 pupils based on the Key Stage 2 fine grade point score for reading (KS2READMRKN), with KS1 reading (KS1_READWRITPOINTS) used as the pre-test.

For each of the attainment scores the raw post-test score was the outcome measure and the raw pre-test score was entered in the model as a baseline measure.

In addition to what was stated in the SAP, we also conducted an additional analysis to account for multiple testing. Since the SAP was published, the EEF has updated its guidance on adjusting for multiple testing (EEF, 2018). To ensure findings are in line with other EEF impact evaluations, we have therefore decided to conduct separate analysis for the two elements of the primary outcome (that is, Year 3 reading and Year 6 reading) and combine the resulting effect sizes. We carried out the two analyses separately and take the mean of the two resulting effect sizes, calculating the variance of the combined ES using the formula in Borenstein et al. (2009, p.227) and using the correlation between the two outcomes, required by the formula, calculated at the school level.

Details of the analysis code and associated output tables for this analysis, as well as for the primary and secondary outcome analyses, are available in Appendix G: Analysis code and output.

Estimation of effect sizes

With the multilevel models, we used the effect sizes (ES) for cluster-randomised trials given in the EEF evaluator guidance. An example, adapted from Hedges (2007), is given in equation (2):

$$ES = \frac{(\bar{Y}_T - \bar{Y}_C)_{adjusted}}{\sigma^2} \qquad (2)$$

where $(\bar{Y}_T - \bar{Y}_C)_{adjusted}$ is the mean difference between intervention groups adjusted for baseline characteristics and σ^2 is the population standard deviation (variance), which we requested from the Department for Education. The ES therefore represents the proportion of the population standard deviation attributable to the intervention (Hutchison and Styles, 2010). A 95% confidence interval for the ES, that took into account the clustering of pupils in classes, is also reported and was calculated by dividing the upper and lower confidence interval bounds by the population standard deviation.

We substituted the sample-based, pooled unconditional variance (s*) in the denominator, which is an estimate of the population variance. In multilevel models this variance would have been the weighted average of the variance of treatment and control groups, as per EEF guidance (EEF, 2018, p.4, n.11). The formula for the denominator is given in equation (3):

$$s^* = \sqrt{\frac{(n_1-1)s_1^2 + (n_2-1)s_2^2}{n_1+n_2-2}} \qquad (3)$$

Implementation and process evaluation

During the initial meetings to set up this trial, all parties developed a detailed theory of change, as illustrated in Figure 1. This ToC identified the core components of the intervention, key principles against which to measure fidelity, expected moderators and mediators, and the linkages between these elements. The aim of the Implementation and Process Evaluation (IPE) was to address each of these elements through a range of methodologies, drawing on varied data sources to do so. The specific research questions answered by the IPE were as follows.

IPE research questions

RQ 1: Was the intervention implemented with fidelity in the intervention schools?

RQ 2: What factors and initial conditions appear to explain variation in fidelity of implementation?

RQ 3: What appear to be the necessary conditions for success of the intervention?

RQ 4: What were the barriers to delivery?

Research methods

To answer the IPE research questions a mixed-methods approach was applied, drawing on a combination of:

- online surveys with school staff—headteachers, other SLT members, all teachers, all teaching assistants;

- interviews with school staff in ten case study schools—five treatment, five control;

- observation of teacher and TA activities and pupil interactions with adults in classrooms in case study schools (see Appendix E for the tool used to collect this data);

- transcripts of audio recordings of TA-pupil interactions in the ten case study schools (as above); and

- observation of training sessions for school staff in ten case study schools (as above).

Table 8 provides an overview of the range of IPE methods used and how they relate to each of the IPE research questions and relevant aspects of the MITA ToC. These are discussed in turn below, grouping activities in terms of when they occurred (that is, pre-RCT year, Phase 1, or Phase 2).

Table 9 details the distribution of process evaluation activities across each stage of the intervention.

Table 8: IPE methods overview

Research methods	Data collection methods	Participants/data sources	Data analysis methods	Research questions addressed	Implementation/ToC relevance
Surveys (pre/mid/post)	Online survey	Headteachers (treatment)	Quantitative descriptive analysis including frequency counts, proportions, measures of central tendency, and variability	RQ1; RQ2; RQ3	Fidelity, reach and practitioner responsiveness, quality, barriers and facilitators, cost data
		Other SLT members (treatment)			
		Teachers (treatment)			
		TAs (treatment)			
		Headteachers; other SLT members; teachers; TAs (control)		RQ4	Business as usual
Case studies	Interviews	Headteachers	Thematic analysis; within-case analysis; cross-case analysis	RQ1; RQ2; RQ3	Fidelity, reach and practitioner responsiveness, quality, cost data, barriers and facilitators
		Other SLT members			
		Teachers			
		TAs			
	Observation (University of Cambridge)	Teachers; TAs	Coding; quantitative descriptive analysis	RQ2	Quality, changes in practice, fidelity

	Audio recording of TA-pupil interactions	TAs; pupils	Coding; quantitative descriptive analysis	RQ2	
Observations of training	Observation (University of Cambridge)	Headteachers; other SLT members; teachers; TAs	Thematic analysis	RQ2	Quality, fidelity, practitioner responsiveness

Baseline data collection—pre-RCT year

Data collection activities prior to Phase 1 (that is, baseline) consisted of surveys of school staff in treatment and control schools. The survey in the third term of the pre-RCT year (2016/2017) aimed to collect data on usual practices, attitudes towards aspects of the intervention (for example, costs, training), and perceptions of potential impact(s) of the intervention prior to implementation (see Table 10 for a breakdown of survey response rates).

Table 9: Process evaluation data collection activities by timepoint

Year→ Term → Activity↓	Baseline data collection: 2016/2017			Phase 1: 2017/2018			Phase 2: 2018/2019		
	T1	T2	T3	T1	T2	T3	T1	T2	T3
Documentary review (audit reports with external consultant)		X	X						
Baseline testing of pupils (KS1 for Y4; ACER ELMs test for YR1)			$X_{I/C}$						
Outcome testing of pupils (KS2 for Y6; ACER ELMs test for YR3)									$X_{I/C}$
Staff surveys (heads/SLT, teachers and TAs)			$X_{I/C}$			$X_{I/C}$			$X_{I/C}$
Staff interviews—3–5 interviews per school (5 intervention schools; 5 control schools)				$X_{I/C}$		X_I			$X_{I/C}$
Classroom observations (5 intervention schools; 5 control schools)				$X_{I/C}$		X_I			$X_{I/C}$
Audio recordings of TA-pupil interactions				$X_{I/C}$		X_I			$X_{I/C}$
Training sessions observations in 5 schools (SLT, teacher and TA training)				X_I	X_I	X_I			
Review of consultancy visits reports in 5 schools (2 visits per school)				X_I	X_I	X_I			
Pupil engagement assessment									$X_{I/C}$

Note: I = only intervention, I/C = both intervention and control.

The evaluation team planned to undertake a review of audit reports from external consultancy visits in the same five treatment case study schools selected for other IPE data collection activities (as described above). This review would have been used to triangulate with other IPE data sources related to implementation fidelity. However, the evaluation team faced issues in accessing the reports owing to IT issues with downloading the reports from an online platform.

Table 10: Staff survey response rates by trial arm and timepoint

	Intervention schools			Control schools		
	Baseline	Phase 1	Phase 2	Pre-trial	Phase 1	Phase 2
Headteacher	37 (34/62)	45 (36/62)	31 (30/62)	33 (28/66)	36 (27/66)	17 (17/66)

Other SLT	135 (43/62)	125 (52/62)	77 (35/62)	110 (32/66)	115 (40/66)	50 (27/66)
Teacher	316 (39/62)	490 (54/62)	291 (42/62)	291 (28/66)	361 (46/66)	219 (28/66)
TA	411 (39/62)	693 (56/62)	375 (43/62)	367 (27/66)	469 (43/66)	222 (27/66)

Note: Sample sizes in survey results in the implementation and process evaluation may deviate slightly from the figures presented above due to skipped responses. (n/N) represents the survey response rate at the school level.

Phase 1

Data collection activities during the intervention year included surveys of school staff in treatment and control schools, school visits—which involved interviews with school staff in case study treatment schools, observations of staff activities and pupil interactions with adults in classrooms, and audio recordings of TA-pupil interactions—and observations of school staff training sessions.

As with the set-up year, the school staff surveys during the intervention year were administered in the third term of the 2017/2018 academic year and collected data on compliance, usual practices in control schools and changes to usual practices in treatment schools, attitudes towards various aspects of the intervention, and perceptions of the impact(s) of MITA.

During Phase 1, school visits in case study schools were a major part of the data collection activities. School visits were undertaken in five treatment and five control schools. As stated above, school visits consisted of a Year 3 literacy and a Year 6 literacy or mathematics lesson observation in each school (to collect data on staff-pupil interactions) plus individual interviews with headteachers and the teachers and TAs taking part in the observed lessons. Interviews were conducted to explore usual practices and attitudes towards the intervention and perceptions of impact(s) in more detail. The interviews also explored factors moderating implementation fidelity (for example, SLT buy-in, quality of training, staff turnover, and so forth). In total, 42 interviews were conducted with school staff in nine of the ten case study schools (schools numbered 1 to 5 being control schools and 6 to 10, intervention schools).

Table 11 provides details on the number of schools that were visited. Schools were visited for staff interviews as follows:

- intervention schools were visited three times: terms one and three in Phase 1 (2017/2018) and once in term three of Phase 2 (2018/2019); and

- control schools were visited twice: once in term one of Phase 1 and once in term three of Phase 2.

Table 11: IPE case study schools—staff interviews

Trial arm	Headteachers/SLT	Class teachers Years 3 and 6	Teaching assistants Years 3 and 6
Control	5	9	7
Treatment	5 (2 from School 9)	8	8
Total	10	17	15

The number of schools that contributed classroom observation data was low due to low rates of participation from selected schools, which makes it difficult to extrapolate the findings to make reliable assessments of changes in practice in all participating schools (see Table 12).

Nonetheless, the data collected in the sampled schools provides useful insights on whether changes in practice in terms of the deployment of TAs and teachers in the classroom occurred as a result of MITA implementation.

Table 12: Number of schools that participated in classroom observations

	Number of schools visited at:			
	Baseline (2017/2018)	End of Phase 1 (2017/2018)	End of Phase 2 (2018/2019)	All time points
Year 3 (treatment)	5	3	4	2
Year 3 (control)	4	-	4	3
Year 6 (treatment)	5	3	3	2
Year 6 (control)	5	-	5	5

Note: Observation data was not collected in control schools during the intervention year.

One school participated in baseline data collection and Phase 1 but withdrew from the intervention at a later point, so no data from Phase 2 from this school is reported. It is noted that because of staff changes in several schools, it was often necessary in Phase 2 to observe and interview different headteachers, teachers, and TAs from those interviewed during the baseline data collection and Phase 2. The classroom observations of staff activities and interactions aimed to examine the quality of the interactions between TAs, teachers, and pupils with an aim to identify, in treatment and control schools, whether changes in practice took place over the trial. Classroom observations were conducted by the University of Cambridge and analysed by RAND Europe. Descriptive analysis using box and whisker plots were applied to explore variability in the proportion of time lower-attaining and SEND pupils spent with teachers and TAs across the timepoints (start of Phase 1 and end of Phase 2) and between treatment and control schools. According to the MITA ToC (Figure 1), we expected to observe that teachers would spend more time with lower-attaining and SEND pupils, while TAs would spend less time with this group in treatment schools following the implementation of the MITA intervention.

Observations were supplemented by audio recordings of TA-pupil interactions during the observed lessons. As a result of the MPTA training for TAs, delivered and mobilised within the context of the MITA programme, it is hypothesised that:

- there will be a decrease in correction; and

- there will be an increase in the proportion of other strategies in a repair position (as correction is replaced by other interactional turns); we would, in particular, expect an increase in prompting as this is taught as a first step response to troubles.

Analysis of the audio recordings of TA-pupil interactions allowed for an assessment of whether these hypotheses manifested in practice. TA talk was recorded during authentic classroom settings when TAs consented to this. As shown in Table 13, recordings were across different time points for the different arms.

Anonymised and allocation-blinded recordings were provided to the delivery team (the MITA team) who selected stretches of talk based on a procedure outlined below. This resulted in a sample of 40 stretches of talk being coded across seven schools, split between intervention and control schools, as per Table 13.

Table 13: TA classroom talk recordings by trial allocation and timepoint

	Coded stretches of TA classroom talk		
Trial condition/timepoint	Start of Phase 1 (2017/2018)	End of Phase 1 (2017/2018)	End of Phase 2 (2018/2019)
Control	10	0	4
Treatment	8	6	12
Total	18	6	16

A transcript of each session was made. Recordings were discarded that were not literacy or maths focused, or that were whole-class and teacher-led throughout. Recordings not useable for technical reasons (for example, inaudible or not a complete recording of the session) were also discarded. There were 20 useable recordings in total: nine from recordings at the start of Phase 1 and 11 from the end of Phase 1 and at the end of Phase 2.

The procedure for selecting stretches of talk was as follows: stretches of talk that were whole-class, teacher- or TA-led—or group teaching with little TA-pupil interaction—were discounted. Stretches of TA-pupil talk where the interaction was mainly behaviour- or organisation-based were also discounted. From this, two-minute stretches of

interaction between TAs and pupils with a learning focus were identified in each recording. These were made up of the first two-minute stretch of learning based TA-pupil interaction in the recording, and the two-minute stretch closest to the middle of each recording. These were transcribed fully, including any relevant pauses of three seconds or longer.

A coding framework was developed using categories taken from the scaffolding framework in Bosanquet, Radford and Webster (2016), which forms the basis of the MPTA training given to TAs in intervention schools as part of the EEF MITA project. Each broad category, where appropriate, has been subdivided into smaller framework categories so that each specific type of strategy within that category could be coded. This allows for a broad analysis of changes in types of interaction used by TAs, as well as an analysis of changes in specific strategies used. Nine separate strategies potentially evident in TA talk were coded using a framework developed by the delivery team at UCL-IOE from prior evidence about effective TA-pupil interactions. These nine strategies are outlined in Appendix F. Using the MITA ToC as the basis, aspects one to seven of the coding framework are hypothesised to increase in intervention schools from baseline to endline, whereas the latter two aspects are hypothesised to decrease. While the sample size did not allow for robust statistical analysis, the incidence of each of the aspects was descriptively explored, comparing control and intervention schools and their change over time.

As the scaffolding framework is designed to be used for repair sequences (where there is no response, an incorrect response, or an indication of difficulty on the part of the pupil), only TA utterances which occurred in a repair sequence were coded. Pupil talk was not coded but was used to help coders identify repair sequences and to code TA utterances (as TA utterances may perform different functions depending on the pupil turn they are responding to).

There were three coders from the delivery team at UCL-IOE involved in the coding process. The coders were experienced in analysing interactional data, with a strong understanding of the coding categories. Furthermore, a robust process to ensure reliability and consistency in the coding process across the three coders was undertaken.[21] Individual strategies were coded and analysed as a proportion of the total of utterances coded.

Observation of training sessions addressed implementation fidelity directly (with training a key part of the intervention). All training sessions (four half-day sessions for headteachers and SLTs, two half-day sessions for TAs, and one twilight session for teachers) were observed in the same five treatment schools where school visits occurred. Note-taking allowed for later thematic analysis of the observations. No video recordings of training were undertaken.

Phase 2

Once Phase 1 was complete, the following approaches were adopted to explore experiences of participation, perceived outcomes and implications of participation in the trial, and control school practices: surveys of school staff in treatment and control schools in the third term of the 2018/2019 academic year and school visits, which involved interviews with school staff in case study treatment and control schools, classroom observations in case study treatment and control schools, and audio recordings of TA-pupil interactions in treatment and control schools. The aims of each of these data collection activities were the same as above. While the intervention year survey was a useful way to stay in touch with schools during Phase 1, the Phase 2 survey was useful in understanding the perceived impact(s) of MITA in treatment schools following completion of the trial.

Cost

Average marginal costs per pupil per year for schools for the intervention were estimated in two stages: first, from a discussion and data provided by the UCL-IOE team and then using the Phase 1 and 2 IPE surveys to query school staff about various aspects related to the costs of implementing MITA. Average marginal costs per pupil per year over a three-year period were estimated in line with the convention followed by other Education Endowment Foundation projects (EEF, 2016). Separate estimates of prerequisite costs and of additional staff time will also be provided. While the EEF has recently updated its cost evaluation guidance (EEF, 2019), the cost evaluation in this report will follow

---

[21] One recording was used as a training exercise for all coders followed by a second one to carry out paired reliability checks. Two further paired reliability check recordings were used at the end of the coding process. Reliability was calculated by taking each TA utterance in repair sequences as the unit of analysis and examining the extent of agreement of the codes allocated by two coders. As utterance length varied, one/zero coding was used for reliability analysis so codes were only counted once for each utterance. A percentage agreement score was derived using (agree / (agree + disagree) x 100). An overall percentage agreement of 76% was achieved, which on the basis of the coders' experience can be considered satisfactory.

the pre-2019 guidance given that the data on costs related to the MITA programme were collected well before the updated guidance was provided (although incorporating the updated guidance where possible). The EEF cost rating is included in Appendix A.

Specific cost categories on which we will collect data include:

- the cost of three components of the intervention (MITA SLT course, MPTA course, and external consultant review) and related costs (for example, purchasing of MITA textbooks);

- prerequisite costs, that is, any costs linked to the training sessions (for example, purchasing additional resources for the sessions and venue hire for MITA SLT sessions);

- the direct costs of staff time—this will identify separately the cost of new hires, supply staff, and any extensions made to the contract hours of teachers and TAs; and

  additional (unpaid) staff time (for example, meetings) reported by teachers and TAs.

Using the IPE surveys, headteachers and other SLT members were asked questions about costs related to the three components of the intervention and prerequisite costs, while teachers and TAs were asked about costs related to staff time (for example, extra hours worked). We collected additional information from the intervention team to validate the above estimates and to ascertain whether any planned changes to make the intervention more widely available would have cost implications. These estimates together provide a general indication of the costs involved with implementing the MITA programme, though we recognise that costs differ between schools and cluster areas.

Timeline

The trial timeline is illustrated in Table 14.

Table 14: Timeline

Dates	Activity	Staff responsible or leading
December 2016–June 2017	Recruiting schools	Delivery team
May–June 2017	Baseline data collection and external testing of pupils in Year 1	RAND Europe
Early July 2017	Randomisation	RAND Europe
September 2017	Baseline interviews and classroom observations	RAND Europe and Cambridge University
September 2017–June 2018	Phase 1 (training sessions to school staff)	Delivery team/schools
September 2017–June 2018	Mid-point data collection (surveys, interviews, and classroom observations)	RAND Europe and Cambridge University
September 2018–June 2019	Phase 2 (start of implementation of action plans in school)	Delivery team/schools
May–June 2019	End of Phase 2 data collection	RAND Europe and Cambridge University
June–July 2019	Pupils outcome measures, including external testing of pupils in Year 3	RAND Europe via ACER
December 2019–November 2020	NPD application for Key Stage 2 scores	RAND Europe
November 2020	Reporting	RAND Europe

Impact evaluation

Key findings from the impact evaluation showed that:

1. There is no evidence that MITA, as implemented in this trial, had an impact on pupils' reading outcomes. There is no evidence that MITA, as implemented in this trial, had an impact on the reading outcomes of FSM pupils or those with SEND.

2. There is no evidence that MITA, as implemented in this trial, had an impact on pupils' maths attainment.

3. There is evidence that pupil engagement was higher in MITA schools compared to pupils in control schools. There is some evidence that MITA had an impact on practice, as measured by the change in practice measure. However, the extent of the missing data (46% attrition) and the marked difference in response rate between treatment and control (45 of 62 intervention schools responded compared to 24 of 66 control schools) makes it difficult to draw any firm conclusions from this analysis.

4. There is some evidence that MITA had an impact on practice, as measured by the change in practice measure. However, the extent of the missing data (46% attrition) and the marked difference in response rate between treatment and control (i.e. 45 of 62 intervention schools responded, compared to 24 of 66 control schools) makes it difficult to draw any firm conclusions from this analysis.

Participant flow including losses and exclusions

The participant flow diagram is presented in Figure 2. The reader will note that we state separately the numbers for two cohorts. As we set out below, there are problems with randomisation being complete before baseline data collection, which means that the maximum number of schools that can be included in the analysis is lower than the number of schools that were randomised. The diagram shows that around 1,000 schools were invited to take part and 128 schools agreed to take part and were randomised; 62 schools were assigned to the treatment condition, 66 to the control condition.

As explained in the trial design section, as a result of a mismatch between schools randomised and schools with available baseline data, we consider that the maximum number of schools that could be included in the analysis is the sum of the total number of schools with complete data for the younger and older cohort at baseline (N = 117) and the number of junior schools (N = 7). In total, 124 schools could have been considered for the primary outcome analysis.

Baseline data was collected for 124 out of the 128 randomised schools and for total of 12,598 students—6,766 pupils from 65 control and 5,732 pupils from 59 intervention schools.

After the baseline data collection, eight out of the 124 schools did not take part in post-trial testing. At the time of analysis, data was available from 116 schools.

Data for the primary outcome measure at endline was available for 10,777 pupils—5,857 pupils from 62 control schools and 4,920 pupils from 54 intervention schools. The primary outcome measure was based on the pooled reading attainment score from 4,788 pupils in Year 3 and 5,289 pupils in Year 6.

The minimum detectable effect size at different stages of the trial is presented in Table 5 in the Sample size section of the report.

Figure 2 : Participant flow diagram

Recruitment
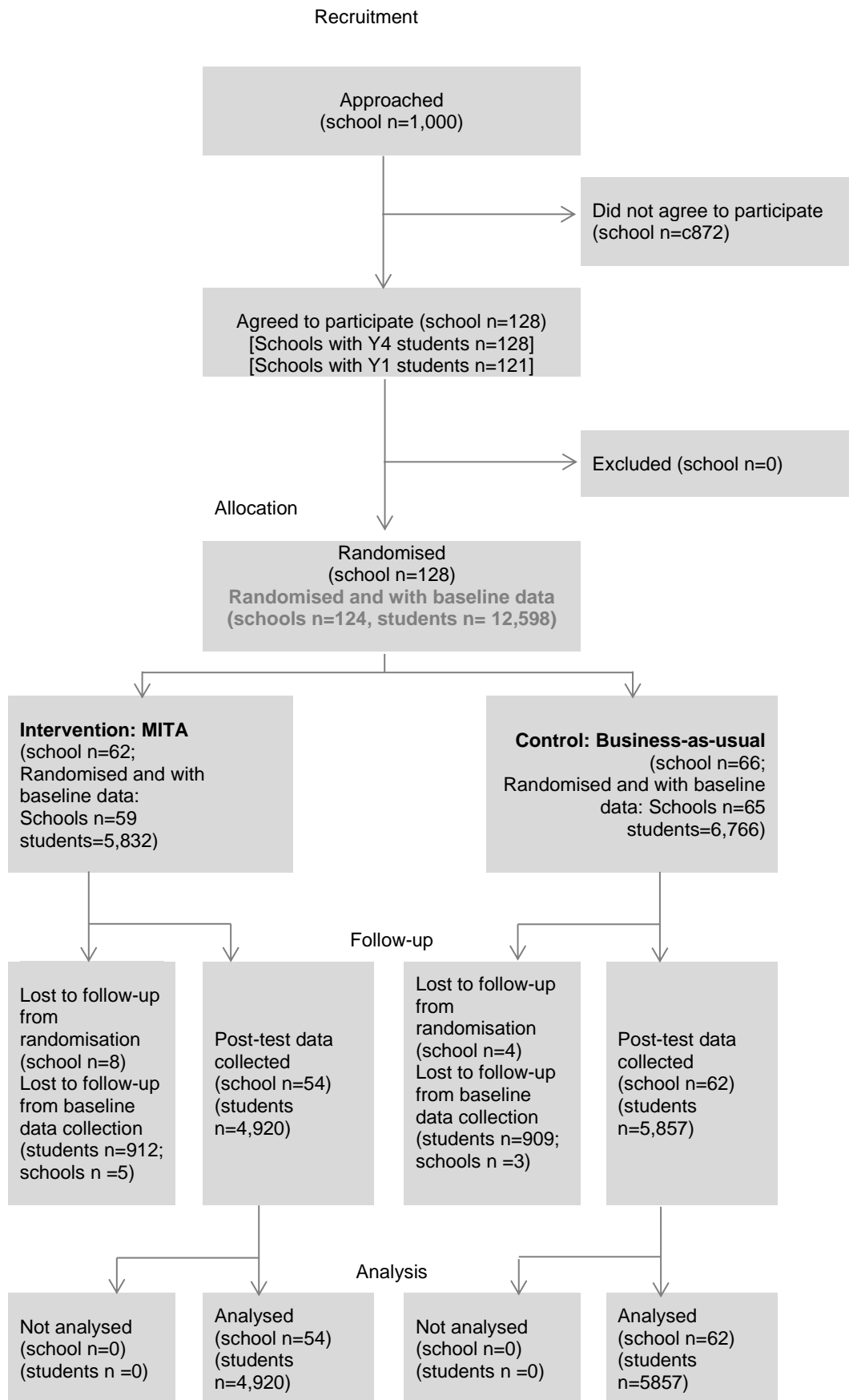
Attrition

Before baseline data collection, four schools withdrew for various reasons. Two withdrew entirely from the trial (stopped implementing MITA and did not participate at outcome testing despite attempts to schedule testing)—one because of change in leadership and concerns about their ability to engage in the programme, the other was not able to allocate time and personnel from the SLT to attend the training sessions. The other two schools did not provide a clear explanation for their withdrawal. Eight more schools are excluded from the final analysis, which have been listed under the 'lost to follow-up' category. These schools did not want to take part in post-trial testing because of staffing changes or gave no clear explanation.

The maximum number of schools with complete data was 116. Within this sample, seven were junior schools and, therefore, did not provide baseline Year 1 pupil data. For the younger cohort (Year 1 pupils at time of randomisation) complete data was available for pupils from 109 schools. In addition to the 109 schools, for the older cohort (Year 4 pupils at time of randomisation), baseline and endline data was available for seven junior schools.

The overall retention rate between baseline and outcome data analysis is 85.5%, with 10,777 pupils in the primary outcome analysis out of the 12,598 pupils with baseline data. The retention rate in the intervention group is 84.3% (an attrition rate of 15.7%), with 4,920 in the analysis out of the 5,832. In the control group, the retention rate is 86.5% (an attrition rate of 13.5%), with 5,857 pupils with primary outcome data out of the 6,766 children.

As set out in the preceding section, the study suffered problems in terms of randomising before baseline data collection was completed so we are not able to conclude what was the overall attrition between randomisation and analysis. Assuming that the average number of pupils for the cohorts analysed is 130 (in line with the assumption used for the power calculations at protocol stage) in each of the 128 randomised schools, we conclude that attrition at baseline data collection stage was approximately 35% at pupil level (see Table 15). At the pupil level, the final analysis included data from 82.15% of pupils, representing an attrition rate of 17.85% at the pupil level, At school level, the final analysis sample included data from 90% of the schools, representing an attrition rate of 10%.

The testing company ACER that coordinated testing did not keep systematic records for each child but, based on their communication with schools, the main reason pupils did not complete the ELM test were that:

- pupils had left the school;
- pupils were absent at the initial and top-up testing; or
- the school did not want to take part in follow-up testing (n = 9).

Table 15: Pupil-level attrition from the trial (primary outcome)

		Intervention	Control	Total
	Withdrew before baseline data collection	390	130	520
	At baseline (ELM)	2,753	3,353	6,106
	At baseline (KS1)	3,079	3,413	6,492
	Overall data collected (primary outcome)	5,832	6,766	12,598
	Overall maximum that could have been achieved (primary outcome)	6,222	6,896	13,118
Pupil attrition	Number analysed	4,920	5,857	10,777
	Lost from randomisation to follow-up	912	909	1,821
	Lost to follow-up	1,302	1,039	2,341
	Percentage	20.93%	15.07%	17.85%

Note: Baseline data collection was not completed at randomisation stage. To calculate attrition between randomisation and baseline data collection, we assume that the maximum number of observations for schools that withdrew between randomisation and baseline data collection is 130 pupils or, on average, there are 65 pupils in each cohort. We take this number as this is the assumed number for estimating MDES at protocol stage.

Problems with data that affect the trial results

There were several challenges with the analysis for this trial that relate to randomisation, attrition, and the final analysis, namely:

- Schools did not provide pupil data at baseline in time for randomisation. Allocation was revealed to schools before we had administered the reading attainment for the younger cohort.

- Some schools that were initially randomised did not provide pupil data for the younger cohort. In this situation we excluded from the primary outcome analysis those schools that did not supply baseline data even though they were originally included in the trial at randomisation stage.

- Two schools in the intervention arm dropped out as they did not have capacity to take part in the intervention. Whilst this presents threat to internal validity through attrition, the loss of whole schools was lessened as overall school attrition was small. Another small consolation for the loss of data is that the overall school-level attrition was distributed equally across the treatment and control schools.

- Two schools that completed endline outcome testing for the younger cohort (Year 3) did not complete testing at baseline and were excluded from the primary outcome analysis.

Pupil and school characteristics

Table 16 below shows the baseline distribution of school and pupil characteristics across the control and intervention schools using pre-randomisation data available on each respective variable.

To assess the balance of pupil characteristics at baseline in accordance with EEF and CONSORT guidelines,[22] we provide descriptive tables of the distribution of pupil characteristics in the control and treatment schools. Given appropriate randomisation procedures were followed, any differences between control and treatment groups at baseline will be, by definition, due to chance meaning that classical statistical testing is unnecessary and imbalance may be gauged from the differences in means.

Instead, tables of the means (and standard deviation, where appropriate) for each characteristic are presented. Where differences exist, and in relation to covariates that are deemed to be predictive of the outcome, the magnitude of any differences was explored (Senn, 1994).[23]

Eligibility for FSM6 (ever in the past six years) showed balanced control and intervention groups, with a difference of less than two percentage points between the intervention and control groups, with the intervention group displaying the higher proportion (23.78% compared to 21.88%).

The two groups are also balanced in terms of gender, with a difference of less than one percentage point, with more girls in the intervention group. Neither English as an additional language (EAL) or SEND show a difference of two percentage points or higher between the intervention and control groups.

In terms of school deprivation indices, the control and intervention groups were balanced at baseline with differences between them of less than five percentage points. In terms of FSM eligibility (at the time of data collection), the mean school FSM rate for intervention schools was 3.93 percentage points higher (at 17.85%) compared to the control

---

[22]**http://www.consort-statement.org/checklists/view/32-consort/510-baseline-data**
[23] There is a convention in some disciplines that a 10pp (or larger) difference in treatment and control means at baseline constitutes 'imbalance' is thus justification for including those measures in sensitivity analyses, but there are counter-arguments to this idea (see Roberts, C. and Torgerson, D. (1999) 'Baseline Imbalance in Randomised Controlled Trials', *BMJ*, 319:185; but also see de Boer et al. (2015) 'Testing for Baseline Differences in Randomized Controlled Trials: an Unhealthy Research Behavior that is Hard to Eradicate', *International Journal of Behavioral Nutrition and Physical Activity*, 12:4).

schools (at 13.92%). For Pupil Premium eligibility the difference was smaller at 1.23 percentage points with a school mean of 18.14% eligibility in the intervention group and 16.91% in the control group.

There were also no meaningful differences in terms of the by-school gender distribution with the proportion of girls in the intervention schools at 48.65% and at 48.98% in the control schools.

Balance was also observed at the school level in terms of SEND, and EAL, with differences below 0.5 percentage points in terms of school average between the control and the intervention groups. For SEND, schools in the intervention group had an average SEND percentage of 11.48%, compared to 11.07% in the control group schools. For EAL, schools in the intervention group had an average EAL percentage of 27.83% while the control schools displayed an average of 27.22%.

Analysis of Ofsted ratings reveals an imbalance across treatment and control settings at baseline. Indeed, the difference in the proportion of treatment and control schools exceeded 10% across settings rated 'outstanding' (difference of 10.54%, with more Intervention schools rated 'outstanding'), 'good' (difference of 16.61%, with more control schools rated 'good'), and 'requires improvement' (difference of 5.97%, with more Intervention schools rated 'requires improvement'). However, these imbalances may be explained by missing data on Ofsted ratings.

Relevant responses on the baseline survey were used as a baseline for the 'change in practice measure' to give an initial indication of behaviours across MITA and control schools prior to randomisation.

The control and intervention groups also show balance in terms of the baseline testing undertaken with pupils in Year 1 in the summer of 2017. The test is the ELM and was undertaken by ACER. The raw score provides the number of correct responses to the test. The scale scores are converted from the raw scores and enable over-time comparisons.

Finally, mean school scores on the baseline scaled KS1 reading point scores displayed a moderate imbalance (ES > 0.05) with 17.058 for the intervention group and 16.779 for the control group, respectively. The use of pre-tests in the analysis should mitigate against moderate differences between schools by controlling for baseline imbalances (see Hewitt and Torgerson, 2006).

Table 16: Baseline characteristics of groups as randomised

School-level (categorical)	National-level mean	Intervention group		Control group	
		n/N (missing)	Count (%)	n/N (missing)	Count (%)
School proportion eligible for FSM	15.4%	59/62 (3)	17.85%	65/66 (1)	13.92%
School proportion eligible for Pupil Premium		59/62 (3)	18.14%	65/66 (1)	16.90%
School proportion gender female	49%	59/62 (3)	48.65%	65/66 (1)	48.98%
School proportion English as an additional language	21.2%	59/62 (3)	27.83%	65/66 (1)	27.22%
School proportion Special Educational Need (any)	14.4%	59/62 (3)	11.48%	65/66 (1)	11.07%
OFSTED Rating					
1: Outstanding		15/51 (11)	29.41%	10/53 (13)	18.87%
2: Good		31/51 (11)	60.78%	41/53 (13)	77.39%
3: Requires Improvement		4/51 (11)	7.84%	1/53 (13)	1.87%
4: Inadequate		1/51 (11)	1.96%	1/53 (13)	1.87%
School type					
Primary school		58/62 (0)	93.55%	63/66 (0)	95.45%
Junior only		4/62 (0)	6.45%	3/66 (0)	4.55%
School-level (continuous)		n/N (missing)	Mean (SD)	n/N (missing)	Mean (SD)
Baseline indicators of change in practice measure (TAs and Teacher Survey)		39/62 (23)	3.26 (0.09)	56/66 (6)	3.09 (0.081)
Pupil-level (categorical)		n/N (missing)	Count (%)	n/N (missing)	Count (%)
Eligible for FSM6		1363/5,732 (0)	23.78%	1,481/6,766 (0)	21.88%

		n/N (missing)	%	n/N (missing)	%	
Gender = female		2,846/5732 (0)	49.65%	3,307/6,766 (0)	48.88%	
English as an additional language		1,718/5,732 (0)	29.97%	2,023/6,766 (0)	29.89%	
Special Educational Need (any)		761/5,732(0)	13.27%	804//6,766 (0)	11.88%	
Pupil-level (continuous)		n/N (missing)	Mean (SD)	n/N (missing)	Mean (SD)	Effect size
KS1 reading Year 4 pupils		3,079 (0)	17.058 (3.609)	3,413 (0)	16.779 (3.620)	0.08
Baseline test raw score (ELM, ACER), Year 1 pupils		2753 (0)[24]	11.65 (6.74)	3353 (0)	11.20 (6.33)	0.07
Baseline test scale score (ELM, ACER), Year 1 pupils		2753 (0)	260.46 (30.08)	3353 (0)	259.19 (27.52)	0.04

Outcomes and analysis

Primary analysis

This evaluation uses as a primary outcome measure the standardised reading variable derived as outlined in the measure development section (that is, a pooled reading score based on the standardised KS2 and ELM scores). For pupils in the final analysis (n = 10,777), the standardised pooled score had an overall mean of 0.015 and standard deviation of 0.009. At baseline, the overall mean was 0.031 and standard deviation of 0.009 while at endline, the overall mean was 0.015 and a standard deviation of 0.009. For pupils in the treatment schools the overall mean at endline was 0.038 and standard deviation 0.014 and for pupils in the control schools the overall mean was -0.004 and standard deviation of 0.013 resulting in 0.042 unadjusted difference in means. A higher score on the primary outcome variable indicates a better reading skills outcome. The primary reading outcome measure was correlated to the reading attainment baseline measure with r = 0.601. The distribution of the primary outcome measure at endline and baseline is illustrated in Figure 3 and Figure 4.

[24] ELM ACER test data is not available for junior schools as there is no Year 1 group.

Figure 3: Primary outcome measure—distribution of outcomes at endline
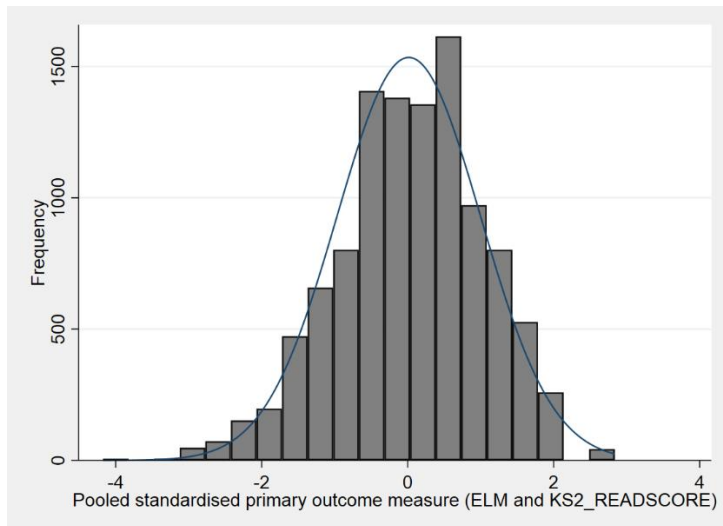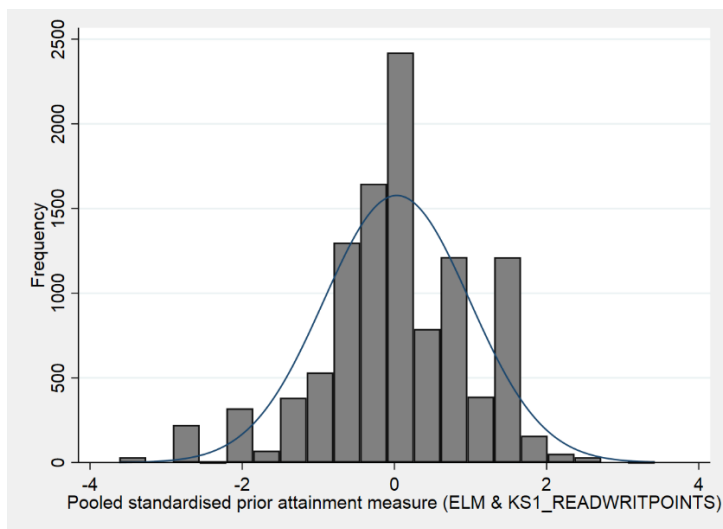

Figure 4: Distribution—primary baseline measure

As outlined in the Methods section, the primary analysis took an intention-to-treat approach with all stratification variables included in the randomisation also present in the analysis. Multilevel models were used to assess the effectiveness of the intervention so as to account for the clustering of children in schools. The details of the model for the primary outcome analysis are reported in Table 17.

In the multilevel models that accounted for the clustering of pupils in schools and also accounted for the pre-test, this difference between intervention and control pupils *was not different from zero*. The adjusted difference in means obtained from the multilevel model was 0.005. The effect size associated with this adjusted difference in means is -0.00 (Table 18). The full ITT model results are given in Appendix H.

Table 17: Primary outcome analysis results

			Intervention group		Control group		
Outcome	Unadjusted difference in means	Adjusted difference in means	n (missing)	Variance of outcome	n (missing)	Variance of outcome	Pooled variance
Primary outcome: reading attainment	0.042	0.005	4,920 (912)	0.951	5,857 (909)	0.975	0.964

Table 18: Effect size estimation—primary outcome analysis

	Intervention group		Control group		Effect size		
Outcome	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n (intervention; control)	Hedges g (95% CI)	p-value
Primary outcome: reading attainment	4,920 (912)	0.0644 (0.0369; 0.0918)	5,857 (909)	0.0032 (-0.0210; 0.0270)	10,777 (4,920; 5,857)	0.00 (-0.07; 0.07)	0.98

The conclusion of the primary outcome analysis is, therefore, that MITA did not have impact on pupils' reading attainment.

Secondary analysis

There are three secondary outcome measures: first, maths attainment deriving from KS2 scores, second, pupil engagement survey, and, third, change in practice measure. The results of these analyses are presented here in turn for the three outcomes.

Maths attainment

For the analytical sample, mathematics scores had a mean of 79.36 and standard deviation of 0.296 at endline. The unadjusted difference in means between pupils in the treatment and control group was 0.615 (Table 19).

The distribution of the maths attainment at endline is illustrated in Figure 5.

The outcome variable was normally distributed.

Figure 5: Secondary outcome measure—distribution of maths Key Stage 2 scores at endline
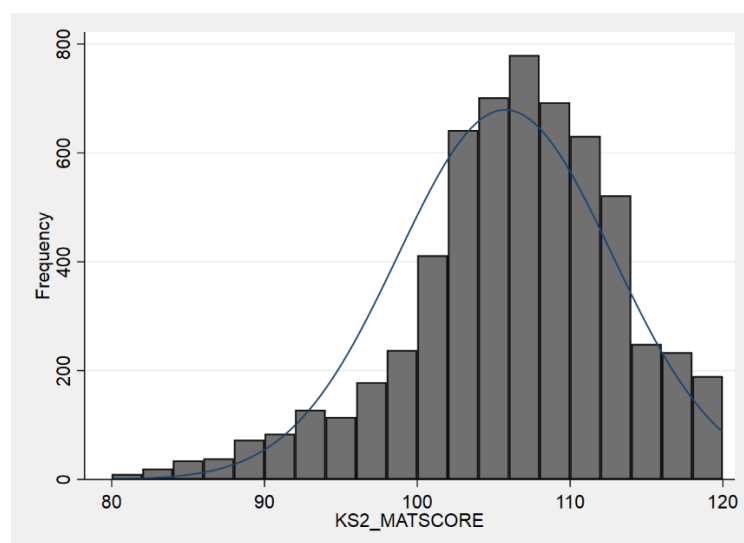

Table 19: Secondary outcome analysis—maths attainment

			Intervention group		Control group		
Outcome	Unadjusted difference in means	Adjusted difference in means	n (missing)	Variance of outcome	n (missing)	Variance of outcome	Pooled variance
Secondary outcome: maths attainment	0.615	-0.848	2,789 (0)	502	3,193 (0)	542	523

Table 20: Effect size estimation, secondary outcome analysis—maths attainment

	Intervention group		Control group		Effect size		
Outcome	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n (intervention; control)	Hedges g (95% CI)	p-value
Secondary outcome: maths attainment	2,789 (0)	79.69 (78.86; 80.52)	3,193 (0)	79.07 (78.27; 79.88)	5,982 (2,789; 3,193)	-0.04 (-0.14; 0.07)	0.49

The effect size associated with this adjusted difference in means is -0.04 and the overall difference is insignificant (Table 20). Therefore, the results of this secondary analysis indicate that MITA did not have impact on pupil's maths attainment.

Pupil engagement

The second secondary outcome measure in this trial was pupil engagement as assessed through the Engagement versus Disaffection survey (EVDwLq). The EvDwLq has positively- and negatively-worded questions, but the summed scale measures the overall level of disaffection with school: a lower score is indicative of a lower level of disaffection.

Engagement data for pupils was collected at endline only for a small sample of Year 3 and Year 6 pupils (see Outcomes section). The extent of the missing data (equal to 33% attrition) introduces bias into the design and reduces the extent to which we can make precise estimates, particularly given the relatively small sample size of the outcomes (that is, 80 schools randomly selected). However, results are presented to give indications of potential changes in pupil engagement.

For the Year 3 analytical sample, engagement scores had a mean of 68.28 and standard deviation of 12.65 while the Year 6 cohort had a mean of 87 and standard deviation of 11.6. The distribution of this measure is provided in Figure 6 and Figure 7 suggesting sufficiently normal distribution.

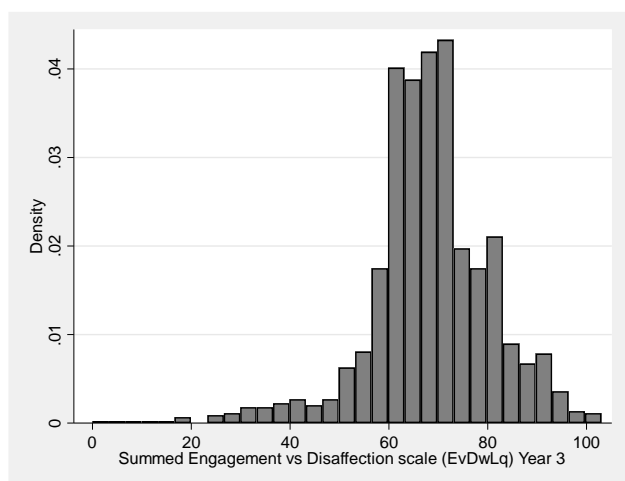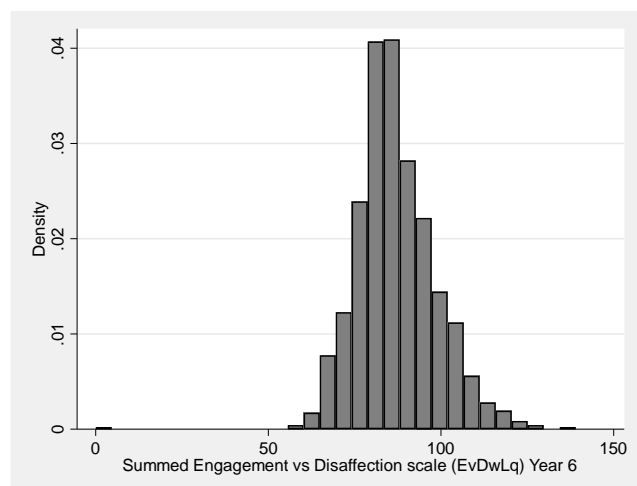Figure 6: Secondary outcome measure—EvDwLq Year 3

Figure 7: Secondary outcome measure—EvDwLq Year 6

We compared treatment and control classes using the same model specification as for the primary outcome, substituting the secondary outcome, and without baseline attainment in the model as baseline scores are not available.

The adjusted mean difference for the Year 3 cohort between the intervention and control group was -2.62 and was statistically significant at $p < 0.05$ (Table 21). The effect size associated with this difference was -0.20 (Table 22). The adjusted mean difference for the Year 6 cohort between the intervention and control group was -2.473 (Table 23) and was statistically significant at $p < 0.05$. The effect size associated with this difference was -0.28 (Table 24).

Given that a higher score on the EVDwLq indicates increased disaffection, the negative effect size results of this analysis indicate that MITA had a positive effect on pupil engagement as captured by the EVDwLq, that is, on average, across the small sample of schools with data, we observe a moderate positive impact on pupil engagement for pupils in MITA schools. However, given the limitations discussed above, this should not be taken as conclusive.

Table 21: Secondary outcome analysis—pupil engagement Year 3

		Intervention group		Control group		
Outcome	Differences in means	n (missing)	Variance of outcome	n (missing)	Variance of outcome	Pooled variance
Secondary outcome: engagement	-2.62	818 (0)	151.83	519 (0)	158.12	154.38

Table 22: Effect size estimation, secondary outcome analysis—pupil engagement Year 3

	Intervention group		Control group		Effect size		
Outcome	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n (intervention; control)	Hedges g (95% CI)	p-value
Secondary outcome: engagement	818(0)	67.53 (66.66; 68.39)	519 (0)	69.587 (68.52; 70.65)	1337 (818; 519)	-0.20 (-0.37, -0.05)	<0.001

Table 23: Secondary outcome analysis—pupil engagement Year 6

		Intervention group		Control group		
Outcome	Differences in means	n (missing)	Variance of outcome	n (missing)	Variance of outcome	Pooled variance
Secondary outcome: engagement	-2.473	548(0)	112.15	453(0)	145.40	127.4

Table 24: Effect size estimation, secondary outcome analysis—pupil engagement Year 6

	Intervention group		Control group		Effect size		
Outcome	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n (intervention; control)	Hedges g (95% CI)	p-value
Secondary outcome: engagement	548	86.3 (85.43; 87.22)	453 (0)	88.09 (86.98; 89.21)	1,001 (548; 453)	-0.28 (-0.45; -0.11)	<0.001

Change in practice measure

The change in practice measure is created by subtracting the change in practice measure score at endline from the score at baseline. Positive change indicates improvement in the perceived deployment of TAs or lesson preparation (opportunities for and quality of).

The extent of the missing data (46% attrition) and the marked differences in responses between treatment and control (45 of 62 intervention schools responded compared to 24 of 66 control schools) makes it difficult to draw any firm conclusions from this analysis. There is not enough data to estimate with sufficient precision differences between control and intervention schools. Missing data also introduces bias into the design, which makes interpretation difficult—for example, did the most enthusiastic schools take part? However, results are presented to give indications of potential changes in practice.

Figure 8: Secondary outcome measure—change in practice measure at baseline by treatment
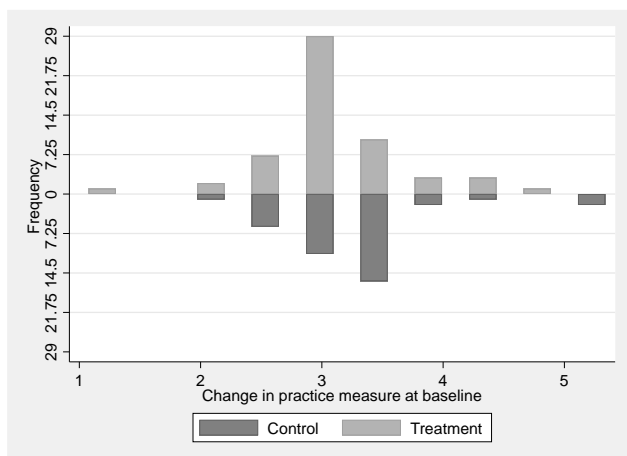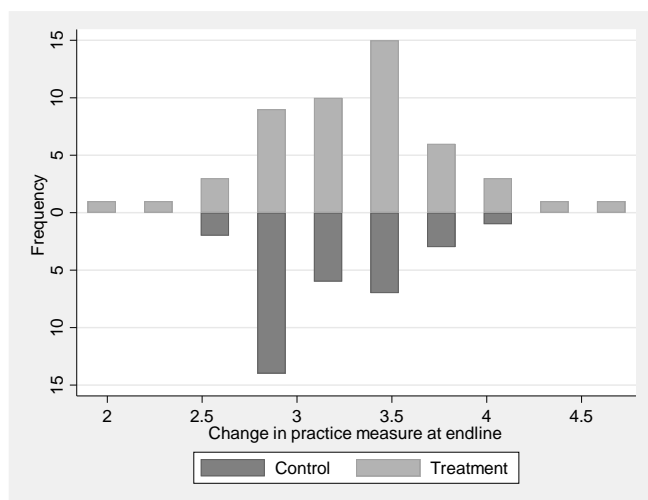
Figure 9: Secondary outcome measure—change in practice measure at endline by treatment

The change measure was entered into a model, at the school level, with an allocation dummy. Table 25 shows the result for the change in practice measure. The results indicate that there *was an observable difference* in change in practice between the treatment and control schools. The associated effect size estimation is 0.36 (Table 26). However, this should not be taken as conclusive given the magnitude of missing data for this analysis.

Table 25: Secondary outcome analysis—change in practice measure

		Intervention group			Control group			
Outcome	Differences in means	n (missing)	Mean (95% CI)	Variance of outcome	n (missing)	Mean (95% CI)	Variance of outcome	Pooled variance
Secondary outcome: change in practice measure	0.253	45 (17)	0.83 (-0.14; 0.31)	0.560	24 (42)	-0.17 (-0.43; 0.09)	0.389	0.508

Table 26: Effect size estimation, secondary outcome analysis—change in practice

	Intervention group		Control group		Effect size		
Outcome	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n (intervention; control)	Hedges g (95% CI)	p-value
Secondary outcome: Change in practice measure	45 (17)	0.083 (-0.14; 0.31)	24 (42)	-0.170 (-0.43;0.09)	69 (45; 24)	0.36 (-0.09; 0.60)	0.15

Compliance analysis

Given the high compliance across all schools as derived with the compliance measure (as noted above in Analysis in the presence of non-compliance), we did not undertake compliance analyses. For more information on compliance please see the section on Compliance in the Implementation and process evaluation section.

Missing data analysis

Missing data and the missing pattern may impact on the robustness of the findings, particularly if the pattern of missingness varies between the arms. Overall, the proportion of missing data from baseline to endline was 13.5% at pupil level and 9.4% at school level (12 of 128 missing data at the school level) between randomisation and follow-up analysis stage. The four schools that did not provide baseline data are not included in the calculation of missingness as these were considered as not compliant with the parameters of the evaluation. Furthermore, as we do not have data from these schools we cannot conduct an analysis of baseline characteristics associated with missingness.

In the first instance, a logistic regression model (Appendix H) was used as a first step to understand missingness was an issue in the primary reading attainment outcome variable and to assess whether this was associated with any other pupil- or school-level characteristics (as specified in the statistical analysis plan). This model used the following predictors: regional indicator, school prior attainment, FSM eligibility, SEND status, and prior attainment. The results show no significant difference in missingness by allocation condition, suggesting that, at a first glance, there are no systematic differences in missingness between the arms.

The odds of missingness as seen in the odds ratio were lower for pupils with lower prior attainment (OR=0.27), with narrow intervals suggesting that this point estimate was well supported by the data (lower bound 95% interval estimate=0.22, upper bound 95% interval estimate=0.32). While the odds ratio suggests that the difference in missingness was minimal, a p-value of 0 suggests that the probability of these results being observed due to statistical uncertainty was low. Results from the multi-level binary logistic regression model also show that the odds of missing data were substantially higher among SEND pupils as compared to other pupils. The wide intervals suggest that the point estimate was not well supported by the data, however the p-value for this model estimate was 0, indicating that the probability of these results being observed due to statistical chance or uncertainty was very low.

Given that the proportion of missing primary outcome data exceeded 5%, we pursued an analytical approach to understand if the results from the complete case analysis model will differ from an approach that account for missingness. In line with the SAP, due to missingness being above the 5% threshold, a FIML analysis was carried out. Results of this analysis suggest that there is a small negative impact of MITA on the primary outcome (Coefficient for allocation= -0.01; p= 0.42; CI (-0.04; 0.02)). The direction of the effect is negative, but very small in magnitude suggesting that there are no differential treatment effects when we account for missingness. The results of the FIML analysis are provided in Appendix H.

Subgroup analysis

We pre-specified that we would look at subgroup effects for FSM-eligible pupils and SEND pupils. To examine FSM and SEND subgroup effects, we ran the models specified for the primary outcome, but adding an interaction for FSM-ever eligibility or SEND status and the treatment indicator (a cross-level interaction in a multilevel model). For both FSM and SEND subgroups the results reflected the ITT analyses above: there were no differences between control and treatment FSM pupils and we did not find any difference between control and treatment SEND pupils. The results for the FSM subgroup analysis are presented in Table 27 and Table 28.

The results for the SEND subgroup are given in Table 29 and Table 30.

Table 27: Primary outcome analysis results—FSM subgroup

			Intervention group		Control group		
Outcome	Unadjusted difference in means	Adjusted difference in means	n (missing)	Variance of outcome	n (missing)	Variance of outcome	Pooled variance
Primary outcome: reading attainment	-0.003	-0.015	1,150 (213)	0.99	1,316 (165)	1.03	1.011

Table 28: Effect size estimation, primary outcome analysis—FSM subgroup

	Intervention group	Control group	Effect size

Outcome	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n (intervention; control)	Hedges g (95% CI)	p-value
Primary outcome: Reading attainment	1,150 (213)	-0.272 (-0.327; -0.217)	1,316 (165)	-0.269 (-0.326; -0.211)	2,466 (1,150; 1,316)	-0.02 (-0.11; 0.08)	0.75

Table 29: Primary outcome analysis results—SEND subgroup

			Intervention group		Control group		
Outcome	Unadjusted difference in means	Adjusted difference in means	n (missing)	Variance of outcome	n (missing)	Variance of outcome	Pooled variance
Primary outcome: reading attainment	0.059	0.052	655 (106)	1.05	767 (37)	1.19	1.12

Table 30: Effect size estimation, primary outcome analysis—SEND subgroup

	Intervention group		Control group		Effect size		
Outcome	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n (intervention; control)	Hedges g (95% CI)	p-value
Primary outcome: reading attainment	655 (106)	-0.802 (-0.880; -0.724)	767 (37)	-0.861 (-0.939; -0.784)	1,422 (655; 767)	0.05 (-0.07; 0.17)	0.43

Additional analysis

We undertook one specification check where we re-ran the main ITT models separately for the two cohorts, and then we combined the effect size. The combined effect size is -0.09. This did not change the substantive conclusion of 'no difference' for the primary outcome of reading attainment. Results for the ELM (

Table 31; Table 32) and the KS2 reading (Table 33; Table 34) analysis are reported below.

Table 31: Additional analysis results—ELM

			Intervention group		Control group		
Outcome	Unadjusted difference in means	Adjusted difference in means	n (missing)	Variance of outcome	n (missing)	Variance of outcome	Pooled variance
Primary outcome: reading attainment	0.106	-0.262	2,128 (625)	37.86	2,660 (693)	37.65	37.746

Table 32: Effect size estimation, additional analysis—ELM

	Intervention group	Control group	Effect size

Outcome	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n (intervention; control)	Hedges g (95% CI)	p-value
Primary outcome: reading attainment	2,128 (625)	19.408 (19.146; 19.669)	2,660 (639)	19.302 (19.069; 19.535)	4,788 (2,128; 2,660)	-0.04 (-0.13; 0.05)	0.35

Table 33: Additional analysis results—KS2 reading (ks2_readmrk)

			Intervention group		Control group		
Outcome	Unadjusted difference in means	Adjusted difference in means	n (missing)	Variance of outcome	n (missing)	Variance of outcome	Pooled variance
Primary outcome: reading attainment	0.656	0.201	3,079 (0)	86.68	3,413 (0)	94.88	90.98

Table 34: Effect size estimation, additional analysis—KS2 reading (ks2_readmrk)

	Intervention group		Control group		Effect size		
Outcome	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n (intervention; control)	Hedges g (95% CI)	p-value
Primary outcome: reading attainment	3,079	34.477 (34.148; 34.806)	3,413	33.821 (33.495; 34.148)	6,492	0.02 (-0.06; 0.11)	0.62

Implementation and process evaluation

In the following sections we discuss the findings in relation to compliance with the core MITA activities (school staff CPD sessions, gap tasks, and school visit meetings with external consultants), implementation fidelity, perceived impact of the intervention, and usual practice. Compliance deals with the question of 'did schools participate in MITA activities and gap tasks?', whereas fidelity looks at the question of 'did schools do what they were supposed to do (with the people and in the way they were supposed to)?'. The section on pupil outcomes discusses the extent to which MITA activities, as delivered in the trial, led to specific implementation outcomes (that is, improved pupil engagement and changes in TA and teacher practice). Finally, the usual practice section looks at the extent to which MITA differs to what was happening before MITA was implemented (at planning year) and what was being delivered in control schools (at endline).

It should be highlighted here that the findings reported in this section draw largely on insights drawn from analysis of surveys (headteachers, other senior leadership team members, teachers, and TAs) and interviews in ten selected case study schools (five MITA schools and five controls schools), which represent respondents' self-reports and perceptions (see Table 11 for details on the number of staff that were interviewed): these may, therefore, not be representative of the study sample as a whole. With the surveys, while the same question was often asked across the three timepoints, it was not possible to track individual respondents across the surveys. However, this self-reported data is supplemented with a range of other data sources: observations of teacher and TA activities in classrooms, audio recordings of TA-pupil interactions, and observations of school staff training.

Finally, as part of the IPE, school staff were asked about ways to improve MITA. Where relevant to the larger IPE research questions, we have included these in the main body of the report.

Compliance

Key findings for compliance included:

1. Attendance at across all staff CPD sessions (SLT, TA, and teachers) was generally high as reported by participants. In a few schools, some SLT members did not attend all sessions as intended.

2. Only around half of the headteachers and one-third of other SLT members reported attending all of the SLT CPD sessions. Just over one-third of non-headteacher SLT staff attended visits with external consultants.

3. Compliance with the gap tasks was generally very high among schools and across the different gap tasks, with over one-third of schools achieving the maximum compliance score for these tasks (11 of 11), and just over half scoring 8 to -10 of 11.

Compliance with the MITA intervention was measured in accordance with the intervention ToC (Figure 1) as set out in the protocol and the methodology sections of this report (see Analysis in the presence of non-compliance).

While the compliance measure provides a good starting point to assess compliance to the intervention, some areas of uncertainty exist. For example, for SLT attendance at SLT CPD sessions, there was ambiguity as to whether one member of the SLT or more needed to attend to be considered compliant (that is, to achieve the maximum weighted score). The compliance measure construct in the evaluation does not penalise for share of SLT members attending training, however it does score on the proportion on TAs or teachers attending training. Nonetheless, findings from the compliance measure indicate that schools complied with the core activities of MITA as intended. All but three of the 59 schools for which this data was collected met the minimum score for compliance (minimum compliance was set at 70 and the total achievable score was 87) with 49 schools achieving a score of 80 and above. Two of three schools that were not compliant did not meet the required score narrowly (69 and 65 of 87) while only one school achieved a score that was substantially below the compliance threshold (56). At a high level, then, compliance with the core activities of MITA was high among participating schools.

The rest of this section describes these elements in further detail utilising a combination of data from the compliance measure and staff self-reported compliance in the surveys to do so.

Attendance at MITA SLT sessions

As specified in the ToC (Figure 1), at least one member of the SLT from treatment schools in each cluster were asked to attend four half-day SLT sessions. Generally, MITA SLT CPD sessions were well-attended, although there was some discrepancy between the compliance measure and self-reported attendance in the surveys. The compliance measure is measured in real-time data using a checklist completed by consultants during their visits while survey responses are self-reported after training has been completed, which may increase error. According to the compliance measure, schools could achieve a maximum weighted score of 18 if all MITA SLT sessions were attended (weighted scores of six apiece for attending SLT Sessions 1 and 2, and weighted scores of three apiece for attending SLT Sessions 3 and 4). Of the 59 schools that completed this data, 49 (83.1%) achieved the maximum score of 18 for attendance at all four MITA SLT sessions, seven (11.9%) achieved a score of 15, two (3.4%) achieved a score of 12, while just one school (1.7%) achieved a score of 9. Overall, then, data from the compliance measure indicates that attendance at SLT sessions was generally very high.

However, according to intervention year survey responses, just over half of headteachers (51.2%, 21 of 41) and only around one-third of other SLT members (34.4%, 43 of 125) attended all four SLT CPD sessions. A further 12 of 41 (29.3%) headteachers and 21 of 125 SLT members (16.8%) reported having attended three SLT sessions. Only a minority of headteachers (6 of 41, 14.6%) and around one-third of other SLT members (31.2%, 39 of 125) attended one or two sessions while a small minority of headteachers (4.9%, 2 of 41) and some other SLT members (17.6%, 22 of 125) did not attend any MITA SLT sessions.

For headteachers and other SLT members that did not attend any SLT sessions, a number of reasons were provided as open responses in the intervention year surveys. These included: another member of the SLT attending the sessions, excessive travel to the sessions, not being aware of, or invited to, the sessions, attendance not being perceived as part of their role, and other factors such as being on annual or maternity leave at the time of SLT sessions.

School visit meetings with external consultants

In total, there were three school visits (one per term during the intervention) from external consultants to each school. It was intended that headteachers and at least one other member of the SLT would attend these visit meetings.

According to the compliance measure, schools could achieve a maximum weighted score of 18 if school visit meetings were attended (scores of six apiece for each visit meeting attended). All 59 schools that supplied data for the compliance measure achieved the maximum score of 18, indicating complete compliance with this aspect of the MITA intervention.

Similarly, self-reported attendance at these three school visit meetings was high among headteachers and other SLT members, although perhaps not to the same degree as indicated from data on the compliance measure. The majority of headteachers (70.7%, 29 of 41) reported attending all of them, with just one headteacher reporting that they attended only one meeting and one headteacher reporting they did not attend any. Around one-quarter of headteachers reported attending two sessions (24.4%, 10 of 41). Less than half of other SLT members (38.2%, 47 of 123) noted that they had attended all three meetings, and 49.6% (61 of 123) reported that they attended one or two with only a minority (12.2%, 15 of 123) noting that they did not attend any.

When asked to specify the reason(s) for not attending external consultant school visit meetings, the one headteacher who did not attend any meetings was not sure what the meetings were and thought that the question was related to school training. For other SLT members, reasons provided were similar as for the SLT sessions: not invited to attend, timetabling issues, meetings being attended by other SLT members, and not aware of the meetings.

Attendance at TA and teacher CPD sessions

In preparation for implementing the action plan and changing TA deployment and practice, there were two half-day CPD sessions for TAs. At the same time, teachers also received twilight training on how to plan and organise classrooms effectively to make the best use of TAs' new skills and knowledge. The headteacher and/or a member of the SLT were also asked to attend TA and teacher training sessions.

According to the compliance measure, schools could achieve a maximum weighted score of 18 if 81%+ of TAs attended both TA training sessions and 81%+ of teachers attended the teacher training session (scores of six for attendance at each of these three training sessions). Additionally, schools could achieve a maximum weighted score of five if the school's SLT attended TA and teacher CPD sessions (scores of two apiece for the two TA training

sessions, and a score of one for attendance at the teacher training session). In total, then, schools could achieve a maximum weighted compliance score of 23 for all activities related to TA and teacher CPD for MITA.

Data from the compliance measure indicates good overall compliance with this aspect of the MITA intervention: 37 out of the 59 schools (62.7%) that supplied this data achieved the maximum weighted score of 23. A further 12 of 59 schools (20.3%) achieved a very high score of 20 or 21 while 8 of 59 schools (13.6%) scored between 13 and 19. Just one school apiece scored 6 and 0. Overall, then, compliance to the TA and teacher CPD aspect of the MITA intervention was generally high, although there was some variation among schools.

Similarly, in the self-reported data the vast majority (84.4%, 585 of 693) of TAs reported attending both TA CPD sessions. A minority of TAs (11.0%, 76 of 693) attended one session with a smaller minority (4.6%, 32 of 693) not having attended any. The reasons given for not attending any included not being aware of the training sessions, working in the Early Years team, not being chosen to attend, being new to the post, having worked in another school during that school year, and other factors such as maternity or long-term sick leave.

Headteacher attendance at TA CPD sessions was mixed. Just under half of headteachers (43.9%, 18 of 41) attended both sessions, a further 10 of 41 (24.4%) attending one session, and approximately one-third (31.7%, 13 of 41) did not attend any. Attendance was lower among other SLT members. Approximately one-third of other SLT members (35.2%, 43 of 122) attended both CPD sessions, with just over a quarter of other SLT members (27.9%, 34 of 122) stating that they attended one session. Just over one-third of other SLT members (36.9%, 45 of 122) noted that they did not attend any CPD sessions for TAs.

For the headteachers and other SLT members that did not attend any CPD sessions for TAs, reasons specified in open-ended responses to the intervention year survey included:

- another SLT member attended instead;

- a Special Educational Needs Co-ordinator attended instead;

- teaching commitments;

- limited capacity within the school;

- wanting TAs to be able to speak freely at the training sessions without headteachers or SLT members being present;

- not perceiving attendance to be necessary for headteachers or other SLT members; and

- not being invited or aware of the training.

The majority of teachers (85.7%, 419 of 490) attended the CPD session for teachers although a minority (14.3%, 70 of 489) reported that they did not. Interestingly, three of eight interviewed teachers in the case studies (across Schools 6, 7, and 8) reported at endline that they had not attended the CPD session for teachers. When explored in detail, the lack of attendance was revealed to be mainly an issue of staff turnover. Indeed, three teachers from two of the case study schools had missed the teacher CPD session as they were newly in post. Other reasons provided by surveyed and interviewed teachers for not attending the training sessions included not working on the day of training, other absences (on annual or maternity leave, on a part-time contract, unwell, or long-term sick leave), or being a recent joiner to the school (as indicated in the case studies).

According to the surveys, attendance at the teacher CPD session was high among headteachers (82.9%, 34 of 41) and other SLT members (91.8%, 112 of 122). For those headteachers (17.1%, 7 of 41) and other SLT members (8.2%, 10 of 122) that did not attend the teacher training session, reasons provided in open-ended responses to the intervention year survey included other commitments, other members of the SLT attending, attended the MPTA training for TAs instead, not aware of the training, and limited capacity.

Finally, it is interesting to note that only one treatment case study school achieved 100% attendance at the TA and teacher CPD sessions, with its headteacher and Special Educational Needs Co-ordinator (SENCo) also attending each one.

In summary, attendance at CPD sessions for TAs was high among TAs but mixed among headteachers and other SLT members though the expectations regarding SLT attendance were made clear throughout. Attendance at MPTA training sessions for teachers was high among teachers, headteachers, and other SLT members.

Completion of gap tasks

Evidence from the compliance measure indicates that most schools completed the majority of the MITA gap tasks. Six core activities were to be completed:

- an online TA audit (weighted score of 2);

- staff surveys (weighted score of 2);

- a visioning exercise (weighted score of 2);

- the action plan (weighted score of 2);

- a reflective poster (weighted score of 1); and

- homework—creating mini goals and self-scaffolding targets with pupils.

(A weighted score of 1 was given if 50-80% of TAs had completed these activities; weighted score of 2 if 81%+ had completed these activities). These activities totalled to a combined weighted score of 11 if schools were totally compliant. A considerable proportion of participating schools achieved the maximum (38.9%, 23 of 59) while over half achieved a compliance score of between eight and ten (54.2%, 32 of 59). Just four schools recorded a compliance score considerably below 11, two of which scored only six and five.

Compliance was generally very high across the activities. The TA audit and surveys were the gap tasks that schools were most compliant with, recording an average score of 2.0 (the maximum score for each task) among all participating schools. Compliance with the homework gap task was also very high, recording an average score of 1.8 among schools (indicating that in most schools, 81% of TAs or more had completed both activities), while schools were generally very compliant with the action plan and visioning exercises with schools recording an average compliance score of 1.6 on both of these gap tasks. Finally, compliance with the poster gap task was also very high, with an average score of 0.9 across schools (the maximum weighted score was one).

Among the schools that achieved a compliance score of five or six out of 11 for the gap tasks, it was most common for them to be non-compliant with the action plan (all four schools), the visioning exercise (two schools), and the homework task (two schools).

Implementation fidelity

Key findings from this section included:

1. Generally, findings suggest that staff CPD sessions were delivered well, were well received, and were key factors in supporting school staff to implement changes at their school in line with MITA guidance. Similarly, schools were overwhelmingly positive about the support offered by the external consultants during their school visits.

2. The attitudes of headteachers and other SLT members are crucial to embedding MITA successfully. In particular, headteachers that introduced and managed change were able to gain staff support and overcome staff resistance. Similarly, the willingness of headteachers and other SLT members to positively engage with the core principles of MITA was linked to successful implementation, even in the face of changes in staffing.

To understand better how MITA worked in practice, we identified several elements where fidelity would be of key importance: (i) the delivery of MITA CPD for all staff and (ii) external consultant visits. When exploring these elements, we focused on exploring the quality, content, and appropriateness. Following on from this, we looked to understand what (if any) enablers and barriers existed and any adaptations or deviations from the original design of the intervention that may have taken place. These are discussed in turn below.

Delivery of CPD and external consultant visits

Generally, findings suggest that staff CPD sessions were delivered well, were well received, and were key factors in supporting school staff to implement changes at their school in line with MITA's aims. Similarly, schools were overwhelmingly positive about the support offered by the external consultants during their school visits.

SLT CPD

The vast majority of headteachers and SLT members who had been involved in MITA SLT sessions reported positive views about the impact of these for implementing specific activities and changes in their school. All headteachers (39 of 39) and the vast majority of other SLT members (95.1%, 98 of 103) responding to the intervention year survey agreed that the SLT sessions had helped implement changes at their school.

More specifically, a slightly lower majority of headteachers (92.3%, 36 of 39) and other SLT members (88.3%, 91 of 103) reported in the intervention year survey that the SLT CPD sessions had helped them to support teachers to plan for TAs in the classroom while a similarly high proportion of headteachers (94.9%, 37 of 39) and other SLT staff (91.3%, 94 of 103) indicated that the sessions had helped them to support teachers to deploy TAs in the classroom. There was a similar level of agreement with the statement that the CPD sessions had helped headteachers (97.4%, 38 of 39) and other SLT members (97.1%, 100 of 103) to support TAs to change the way that they interact with pupils.

The positive views expressed in the surveys were supported by findings from observations of the SLT CPD sessions. The observer noted that the information presented at the training sessions was very clear. Participants were able to ask questions and were perceived to be engaged in the process. The observer also noted that all the intended aims of the training were achieved by the end of the session.[25]

Interestingly, a follow-up interview in one of the five case study schools suggests that not all aspects of the programme were embedded with all attendants as successfully as they could have been. The SENDCo at one case study school left a clear impression of a staff member unfamiliar with MITA and of someone who, having initiated other interventions and activities in the school, was focusing on these instead. During the training year, she had attended the same MITA CPD sessions as her headteacher but commented on this only in the broadest of terms, without mentioning any MITA concepts:

> 'The one I saw was ... useful, yeah. It was along the lines of what you do in your PGCE, wasn't it, so that's ... advice. Always useful' (School 8 SEDNCo).

Teacher and TA CPD

Generally, both teachers and TAs reported positive views on the impacts of the CPD sessions across most of the key outcomes of interest on the ToC (see Figure 1), namely deployment, preparation, and TA-pupil interactions.

For teachers responding to the intervention year survey, almost two-thirds (64.7%, 273 of 422) indicated that the teacher CPD sessions changed the way that they planned for TAs in their classroom, while a similar proportion (66.1%, 279 of 422) suggested that the CPD changed the way that they deployed TAs in their classroom. There was a stronger consensus with regards to TA-pupil interactions, with over four-fifths of teachers (81.5%, 344 of 422) reporting that their training had helped them to support TAs to change the way that they interacted with pupils. In one case study school (School 9), one Year 3 teacher said that the training had helped to solidify her practice, describing MITA as a sort of approbation of it, without having to second guess everything.

TAs reported similarly positive views of their CPD sessions in the intervention year survey. Indeed, the vast majority agreed that the training sessions helped them to support pupil independence (92.5%, 613 of 663) and change the way that they interact with pupils (90.5%, 600 of 663). Case study interviewees also mentioned improved interactions with pupils as an outcome of the MITA CPD, as shown by examples from School 7 and School 8:

> 'It feels more comfortable leaving children to think after asking a question. Before, I probably would have been too hasty to jump in' (School 7, Year 6 TA).

> 'I reduced the number of interventions [where pupils are withdrawn from class]; [MITA] helped me re-evaluate what I was doing' (School 8, Year 6 TA).

Observations at training supported the notion that staff CPD sessions were well attended and delivered with fidelity. At one observed TA CPD session, attendance was almost 100%; it included the headteacher (newly in post) and SENCo (due to take up her post at the beginning of the following academic year). Topics discussed included pupil

---

[25] There were eight areas covered by the MITA SLT CPD session: (1) schedule for the year ahead and define expectations relating to participation in the MITA project, (2) the research evidence on TA deployment and impact on learning, (3) the wider context in which MITA sits and its relevance to the project's aims and purpose, (4) the key principles underpinning the MITA approach (the EEF recommendations), (5) the critical role of leadership in implementing the MITA approach, (6) how to access and use project resources, (7) the homework tasks: auditing and visioning, and (8) scheduling first external consultant visit.

independence, TA and teacher support for all pupils, TA-teacher equity, and the prioritisation of pupils understanding over task completion. The rationale underpinning these was explained clearly and discussed interactively. Staff were engaged and attentive with well over half contributing to the session. The trainer asked TAs to pilot some of the strategies discussed with pupils, feeding the results back to the group at the next training session before putting the most effective strategies into practice. The headteacher encouraged staff to express their views openly and appeared keen to establish consistent practices across the school.

External consultant visits

The majority of surveyed headteachers and other SLT members indicated that they viewed external consultant visits positively. Namely, respondents felt that recommendations made were (i) relevant to their school (86.7%, 39 of 45 headteachers; 90.4%, 113 of 125 other SLT members), (ii) helpful for introducing change in the school (86.7%, 39 of 45 headteachers; 89.6%, 112 of 125 other SLT members), (iii) easy to implement (91.1%, 41 of 45 headteachers; 82.4%, 103 of 125 other SLT members), and (iv) clear (93.3%, 42 of 45 headteachers; 89.6%, 112 of 125 other SLT members).

The positive views expressed by headteachers and other SLT members in the surveys were perhaps somewhat linked to the mostly positive findings emerging from the observation of external consultant training. It was reported that the information provided to external consultants from the trainers was clear, the session was interactive and allowed for participants to engage in discussions, and the trainers themselves were knowledgeable about MITA for the most part. Additionally, the aims of the external consultant training session were achieved according to the report from the observer of the training.[26]

Perceived outcomes associated with MITA

Key findings from this section include:

1. Evidence suggests that TAs spent much less time with lower-attaining pupils, however, evidence on TAs spending less time with pupils with SEND is more mixed. This is somewhat in line with the MITA ToC, which suggests TAs should be working less with these groups.

2. Overall, there is little evidence to suggest that teachers spent more time with lower-attaining and SEND pupils over the course of the trail. This is not in line with the MITA ToC, which suggests that teachers should be increasing their time working with these groups.

3. Pupil independence improved in line with the MITA ToC and that these gains were largely maintained through to the end of the trial. Teachers felt that TAs were an important part of that improvement.

4. Findings suggest that MITA facilitated a shift in how teachers and TAs interact, with a reduction in brief, ad hoc communications and an increase in the proportion of teachers and TAs that indicated that they had scheduled time each week for communication. Teachers also strongly felt that MITA improved TA's' ability to know what feedback teachers required, though this was less strongly felt by TAs.

5. Evidence from the classroom observations broadly suggest that TAs increasingly used effective scaffolding strategies as the trial progressed. Furthermore, teachers perceived that the TAs' knowledge of effective interactions improved during the trial, particularly during Phase 1.

6. The majority of teachers reported that TAs had a positive impact on various aspects of participating pupils' development (confidence, motivation, and attendance). However, gains were relatively modest (with the exception of attention for pupils without SEND) perhaps linked to the fact that views of TA impact were already quite positive at baseline.

---

[26] There were five aims of the external consultant training session: (1) to explore the role of an external consultant in MITA, (2) outline the research background to the MITA Review, (3) explain the EEF project and involvement, (4) give external consultants the knowledge and coaching skills necessary to conduct MITA visits, and (5) create a collaborative partnership with external consultants, the project coordinators, the EEF, and RAND Europe.

7. MITA had a positive impact on TA confidence between baseline and the end of Phase 2 with TAs reporting they felt 'very confident'. Interestingly, less fewer TAs reported feeling 'very confident' at the end of Phase 1 than they did compared to baseline.

8. The way in which head headteachers introduced and managed change (e.g. for example, gaining staff support, addressing staff resistance, and implemented any necessary alterations) across the school was of crucial importance to the success of MITA, particularly, in the face of concerns from staff, or staff turnover.

This section will explore the perceived outcomes of MITA on various aspects related to the intervention ToC (Figure 1). These outcomes are related to (i) the deployment of teachers and TAs, (ii) processes of preparation, communication, and feedback among TAs and teachers, (iii) the perceived outcomes of MITA on pupils, and (iv) TA confidence.

Deployment of teachers and TAs

MITA aims to change how teachers and TAs work together in the classroom. Classrooms following MITA principles should show the following characteristics: (i) teachers spend more time with lower-attaining and SEND pupils while TAs spend less time with the same pupils, (ii) lower-attaining and SEND pupils spend more time working without adult supervision, and (iii) TAs do more team teaching with the classroom teacher and spend less time listening to the teacher teach. These will be discussed in turn below.

Teachers spend more time with lower-attaining and SEND pupils while TAs spend less time with the same pupils

One of the core aspects of the MITA ToC (Figure 1) is that teachers and TAs fundamentally shift *who* they work with and *how* they work with these pupils. With regards to who, a key outcome of MITA is that teachers will spend more time with lower-attaining and SEND pupils while TAs will spend less time with these pupils and more time with other pupils. To understand this better, data was collected throughout the trial as part of the surveys, school visits, and observations.

In surveys, TAs were asked to report on the groups of pupils that they spent the most time supporting in the last three lessons (Table 35). At baseline, the majority of TAs reported that they spent the most time supporting lower-attaining pupils (39.7%, 155 of 390) and pupils with SEND (33.3%, 130 of 390). By the end of Phase 1, views were more mixed with TAs indicating that they spent the most time supporting pupils of mixed ability (32.9%, 228 of 693), pupils with SEND (29.9%, 207 of 693), and lower-attaining pupils excluding SEND (23.8%, 165 of 693). This same trend was observed in Phase 2 (32.0%, 120 of 375, reporting pupils of mixed ability, 27.7%, 104 of 375, reporting pupils with SEND, and 25.1%, 94 of 375, reporting lower-attaining pupils excluding SEND).

Table 35: TA survey responses on pupil groups supported in the last three lessons

Timepoint →	Baseline		Phase 1		Phase 2	
Activity ↓	Longest time	Second longest time	Longest time	Second longest time	Longest time	Second longest time
Higher-attaining pupils	1.3% (5 of 390)	6.0% (23 of 384)	2.7% (19 of 693)	5.1% (35 of 693)	4.3% (16 of 375)	3.7% (14 of 375)
Average-attaining pupils	7.4% (29 of 390)	14.6% (56 of 384)	10.7% (74 of 693)	20.6% (143 of 693)	10.9% (41 of 375)	21.1% (79 of 375)
Lower-attaining pupils	39.7% (155 of 390)	32.3% (124 of 384)	23.8% (165 of 693)	32.3% (224 of 693)	25.1% (94 of 375)	30.4% (114 of 375)
Pupils with SEND	33.3% (130 of 390)	21.6% (83 of 384)	29.9% (207 of 693)	15.3% (106 of 693)	27.7% (104 of 375)	18.1% (68 of 375)
Mixed-attaining pupils	18.2% (71 of 390)	25.5% (98 of 384)	32.9% (228 of 693)	26.7% (185 of 693)	32.0% (120 of 375)	26.7% (100 of 375)

Note: TA baseline survey, n = 390; TA midline survey, n = 693; TA endline survey, n = 375. Question: 'Thinking about what you did in your last three lessons, which two groups of pupils did you spend the MOST time supporting?' Question was asked consistently across the three timepoints.

An analysis of differences between baseline and the end of Phase 2 suggests that there were marked decreases in the time TAs spent with lower-attaining pupils—a 14.6% reduction in reported longest time spent with this group; there were also decreases in the time spent working with SEND pupils—a 5.6% reduction. This was offset by an increase in the proportion of time reported to be spent working with mixed ability groups—a 13.8% increase in reported longest time spent with this group. This indicates that the behaviour of TAs throughout the trial was consistent with the intervention ToC, whereby TAs spent much less time with lower-attaining and, to a certain extent, SEND pupils and more time with other pupil groups, particularly mixed ability groups.

Teachers were also asked to indicate which groups of pupils they spent the most time with throughout the trial. At baseline, the majority reported that they supported lower-attaining pupils excluding SEND (44.2%, 130 of 294), mixed attainment pupils (24.8%, 73 of 294), or pupils with SEND (16.0%, 47 of 294). By the end of Phase 1 this had decreased for lower attaining pupils excluding SEND (33.3% or 163 of 490) and increased for mixed attainment pupils (30.0% or 147 of 490). By Phase 2, the majority of teachers reported that they spent the longest time supporting mixed-attaining pupils (35.4% or 103 of 291) and average-attaining pupils (17.2%, 50 of 291), lower attaining pupils excluding SEND (29.9%, 87 of 291), and pupils with SEND (13.7%, 40 of 291).

When trends from baseline to endline are analysed, teachers reported spending 14.3% less time with low-attaining pupils and 2.3% less time with SEND pupils. This suggests that teachers spent less time with lower-attaining and SEND pupils over the course of the trial. This is not in line with the 'deployment' aspect in the MITA ToC, which suggests that teachers should be increasing their time working with these groups. However, it could support the idea that pupils are self-scaffolding (working independently) in the 'TA-pupil interaction' section of the ToC. Without detailed lesson observations it is difficult to suggest what is happening in practice.

These survey findings were partly supported by the analysis of case study interviews, which indicated that TAs began to work with a wider range of pupils as the intervention developed. Conversely, analysis of interviews suggests that teachers began to work with SEND and low-attaining pupils, which is not in line with survey findings. In one treatment school, as a result of MITA, TAs began to work with more able children, with pupil groupings showing greater flexibility. The class-based work of the Year 6 TA now encompassed the ability range with her teacher assigning her to work with a higher-level maths group. She stated that 'MITA has put us more or less on an equal level in terms of [sic] my teacher will accept my opinions more [on children's ways of working]'. This way of working was echoed by the SENCo in another school who stated that TAs were now working across the whole class.
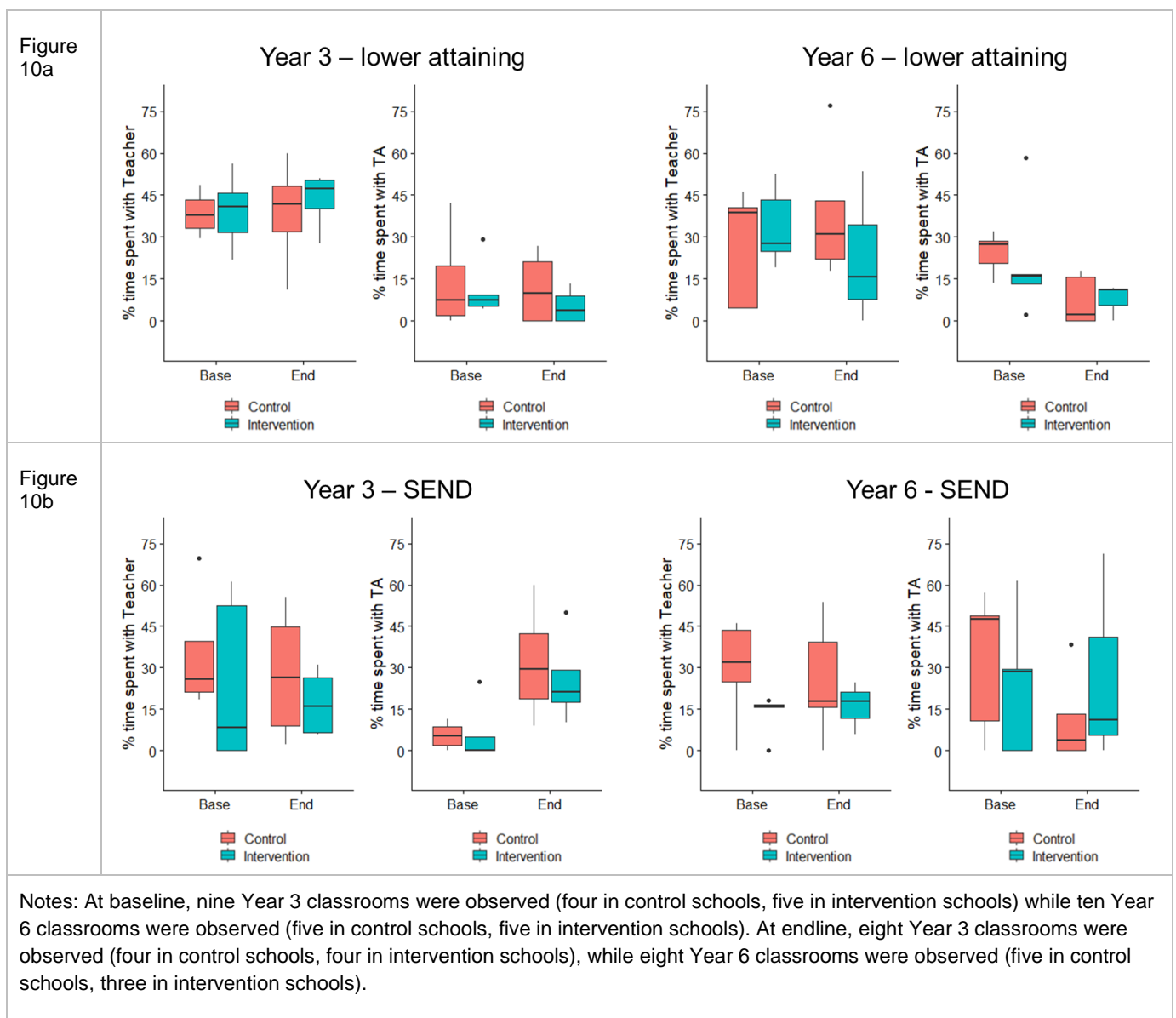
However, in another intervention case study school, teachers spent the majority of their time with the class while TAs worked with pupils with additional needs. In a Year 3 lesson observation, the TA (who, new in post, had not received

MITA training or any formal induction in the intervention) worked with two such pupils continuously. The school's headteacher, however, reported that TAs, following MITA training, were able to work across the ability range or take charge of a whole class but that they were occasionally required to work with pupils with additional need due to lack of funding.

As another measure of changes in teacher and TA deployment as a result of MITA implementation, classroom observations were used to analyse the proportion of time pupil groups spent interacting with teachers and TAs at baseline and at the end of Phase 2 (hereafter 'endline' for this analysis). The data was disaggregated by year group (Year 3 and Year 6) and for lower-attaining and SEND pupils (Figure 10).

Based on the MITA ToC, the observable trend in treatment schools would be that TAs would work less with lower-attaining and SEND pupils while teachers would spend an increased amount of time with these pupil groups. A number of interesting patterns emerge from this data in relation to teacher and TA deployment in intervention schools during the implementation of MITA.

Figure 10: Lower-attaining (10a) and SEND (10b) pupils' time spent with TAs and teachers, disaggregated by Year 3 and Year 6 pupils

Notes: At baseline, nine Year 3 classrooms were observed (four in control schools, five in intervention schools) while ten Year 6 classrooms were observed (five in control schools, five in intervention schools). At endline, eight Year 3 classrooms were observed (four in control schools, four in intervention schools), while eight Year 6 classrooms were observed (five in control schools, three in intervention schools).

Considering lower-attaining pupils first, quite different trends can be observed across the year groups (Figure 10a). For Year 3 lower-attaining pupils, there was an increase of six percentage points in the proportion of time spent with teachers between baseline and endline. Additionally, there appeared to be a decrease of three percentage points in the proportion of time that these pupils spent with TAs. While relatively small in magnitude, these changes are consistent with the MITA ToC. Time TAs spent with lower-attaining Year 6 pupils also decreased between baseline

and endline, falling by five percentage points (a decrease from 16% to 11%). This is consistent with the MITA ToC. Interestingly, the time lower-ability pupils in Year 6 spent with teachers also dropped by 12 percentage points between baseline and endline (decreasing from 28% to 16%). In one school, the proportion of observed time that Year 6 lower-attaining pupils spent with teachers fell from 25% to 0%. These are less consistent with MITA's ToC. However, as the data comes from a relatively small number of observations in a small number of schools, conclusions drawn from this data are rather limited.
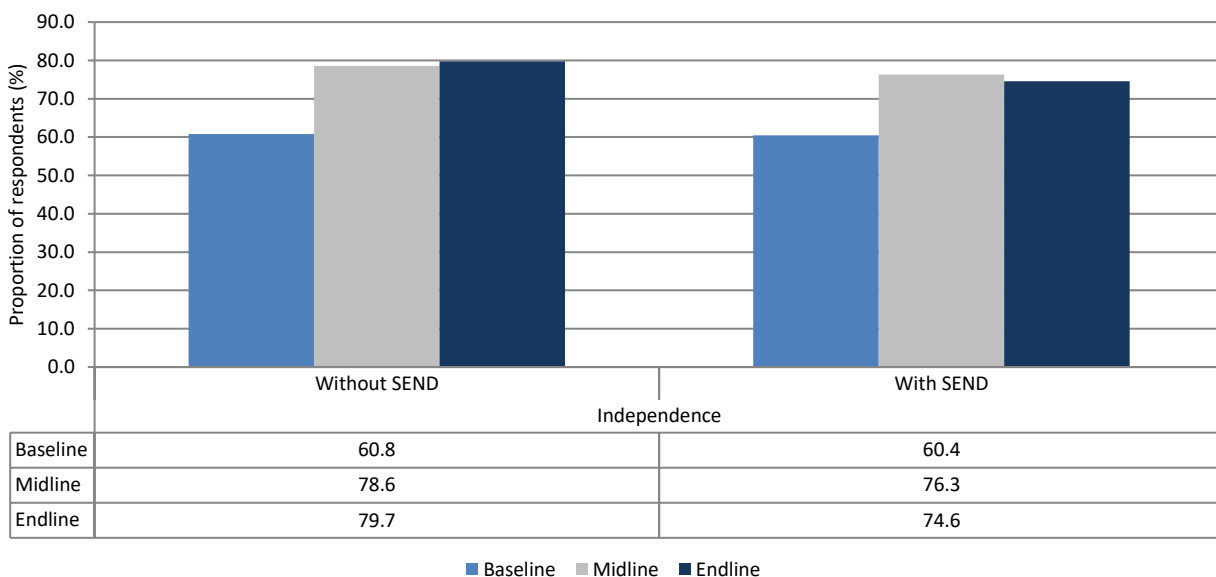
Observation data for Year 3 SEND pupils further suggest that MITA had an effect on the deployment of teachers and TAs (Figure 10b).

Time spent with teachers increases by eight percentage points between baseline and endline. While positive, it should be noted that there was a high degree of variability in the baseline data of intervention schools. For TAs, the proportion of their time spent with SEND pupils increased by 21 percentage points between baseline and endline. This increase is not in line with the MITA ToC, though as the data comes from a relatively small number of observations in a small number of schools, conclusions drawn from this data are rather limited. For Year 6 SEND pupils, the time spent with teachers showed a relatively small increase of two percentage points (the median value increased slightly from 16% to 18%). For time spent with TAs, results were inconclusive. While the median value decreased by 18 percentage points, it is important to note that only three intervention schools were observed at endline, and the three schools produced very different results in terms of time spent with TAs (0%, 11%, and 71%).

While mixed, the results suggest that TAs reported changes to their deployment in that they were working less with lower-attaining pupils and SEND pupils, which is line with MITA's ToC. The results from the teacher survey and observations are not always in sync, though this could be because observations are drawn from a relatively limited sample. For example, both surveys and observations support the notion that TAs are decreasing their time spent with lower-attaining pupils; however, the observations suggest that TAs are increasingly spending time with pupils with SEND, which is not supported by the survey evidence.

Lower-attaining and SEND pupils spend more time working without adult support

Figure 11: Proportion of teachers reporting that TAs had a significant or mostly positive impact on pupil independence

	Without SEND	With SEND
Baseline	60.8	60.4
Midline	78.6	76.3
Endline	79.7	74.6

■ Baseline ■ Midline ■ Endline

As mentioned above, pupil independence is one of the main outcomes defined in the MITA intervention ToC (Figure 1). It is important, therefore, that Figure 11 (proportion of teachers reporting that Tas had a significant or mostly positive impact on pupil independence) shows a noticeable improvement in the proportion of teachers who reported that TAs had a significant or mostly positive impact on pupil independence. This improvement was particularly noticeable between baseline and the end of Phase 1 (midline). The proportional increase was similar for pupils without SEND (60.8%, 178 of 293 at baseline; 78.6%, 385 of 490 at midline) and pupils with SEND (60.4%, 177 of 293 at baseline; 76.3%, 374 of 490 at midline). In Phase 2 (endline) there was a marginal increase for pupils without SEND (79.7%, 232 of 291) and a marginal decrease for pupils with SEND (74.6%, 217 of 291).

An analysis of data from baseline to the end of Phase 2 shows marked gains in teachers reports of TA impact on pupil independence, with a 31.2% increase for pupils without SEND and a 23.4% increase for pupils with SEND. The impact of MITA was seemingly important here as the vast majority of TAs reported in the end of Phase 2 surveys that the training sessions that they had attended as part of the programme had helped them to support pupil independence (92.5%, 613 of 663).

Teachers were also asked to estimate the proportion of their pupils that had difficulties working independently from adults. On average, the proportion reported by teachers decreased between baseline (20.5%), Phase 1 (18.8%), and Phase 2 (16.5%), indicating that pupil independence improved steadily across the duration of the intervention.[27]

An analysis of open-ended responses to the intervention year survey was undertaken to assess the use of keywords related to MITA's underlying principles of pupil independence ('independence' and 'prompting'). While the conclusions that can be drawn from this are somewhat limited, use of these key terms was relatively common in open responses from staff in treatment schools but not mentioned by any staff in control schools. This indicates that the concepts and ideas related to promoting pupil independence were generally well understood by staff in treatment schools.

As part of the IPE research activities, classroom observations were also employed to assess the percentage of time that lower-attaining and SEND pupils in Year 3 and Year 6 spent working independently from TAs and teachers, both in treatment and control schools (Figure 12 and Figure 13). Two main trends can be observed in the treatment schools. First, for SEND pupils in Year 3 and lower-attaining pupils in Year 6, there was a marked increase in the percentage of time spent working independently from TAs and teachers between the start and the end of Phase 1 followed by a decrease between Phase 1 and Phase 2 (although not enough of a decrease to offset the initial increase). This trend would indicate that gains made in Phase 1 were not maintained to the same extent in Phase 2.

Figure 12: Year 3 lower-attaining and SEND pupils' time spent working independently

---
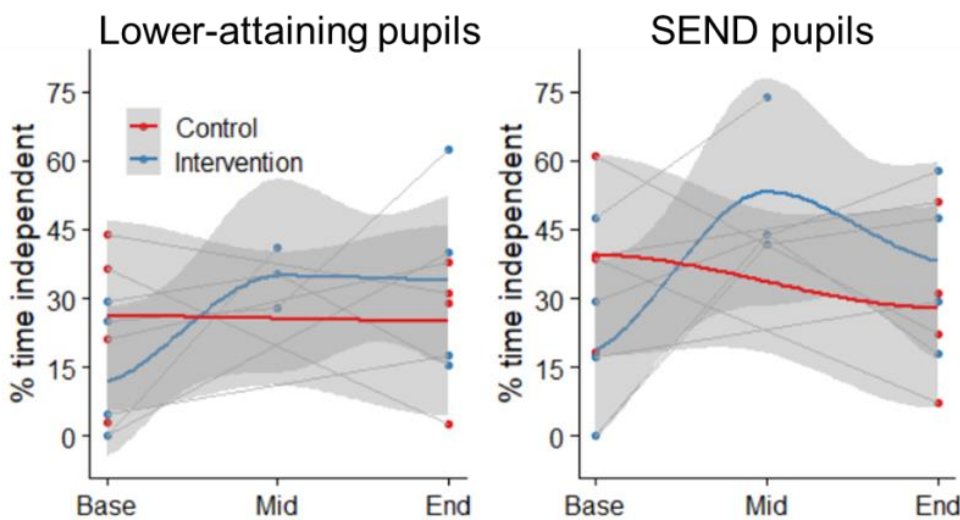
[27] Teacher baseline survey, N=292; Teacher midline survey, N=490, Teacher endline survey, N=291. Question: "Thinking about your last lesson, approximately what percentage (%) of pupils in the class had difficulties working independently from adults?".

Figure 13: Year 6 lower-attaining and SEND pupils' time spent working independently
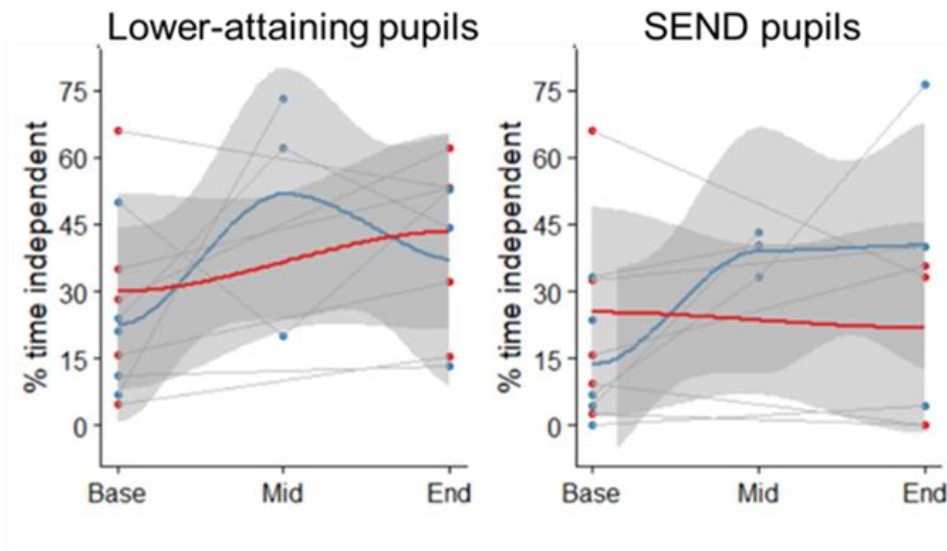
Note: At baseline, 9 Year 3 classrooms were observed (4 in control schools, 5 in intervention schools), while 10 Year 6 classrooms were observed (5 in control schools, 5 in intervention schools). At endline, 8 Year 3 classrooms were observed (4 in control schools, 4 in intervention schools), while 8 Year 6 classrooms were observed (5 in control schools, 3 in intervention schools).

Second, for lower-attaining pupils in Year 3 and SEND pupils in Year 6, a similarly pronounced increase in the time pupils spent working independently from adults was observed between baseline and the end of Phase 1: this was maintained between the end of Phase 1 and Phase 2 (although there was a very minor decrease for lower-attaining pupils in Year 3 and a minor further increase for SEND pupils in Year 6). It is unclear why the principle of pupils working more independently appeared to be more persistent in these two groups.

In summary, overall, the findings from the surveys indicate that pupil independence improved in line with the MITA ToC and that these gains were largely maintained through to the end of the trial. It is clear that teachers felt that TAs were an important part of that improvement.

Team teaching

Interestingly, TAs reported mixed views on delivering lessons—co-teaching. While it seemed most common for this activity to rank lower down in the planning year (72.0%, or 286 of 397 TAs ranking this activity a three or lower), the two most common ranks in Phase 1 and Phase 2 were sixth followed by first. Furthermore, the proportion of TAs who reported this as the activity that they spent the most, or the second-most, time completing in the last three lessons increased throughout the timepoints (28.0% or 111 of 397 in the pre-RCT year, 30.6% or 212 of 693 in Phase 1, and 36.2% or 136 of 375 in Phase 2). This suggests that TAs were increasingly used to co-deliver lessons as the intervention progressed, as per the intervention ToC.

Processes of preparation, communication, and feedback between teachers and TAs
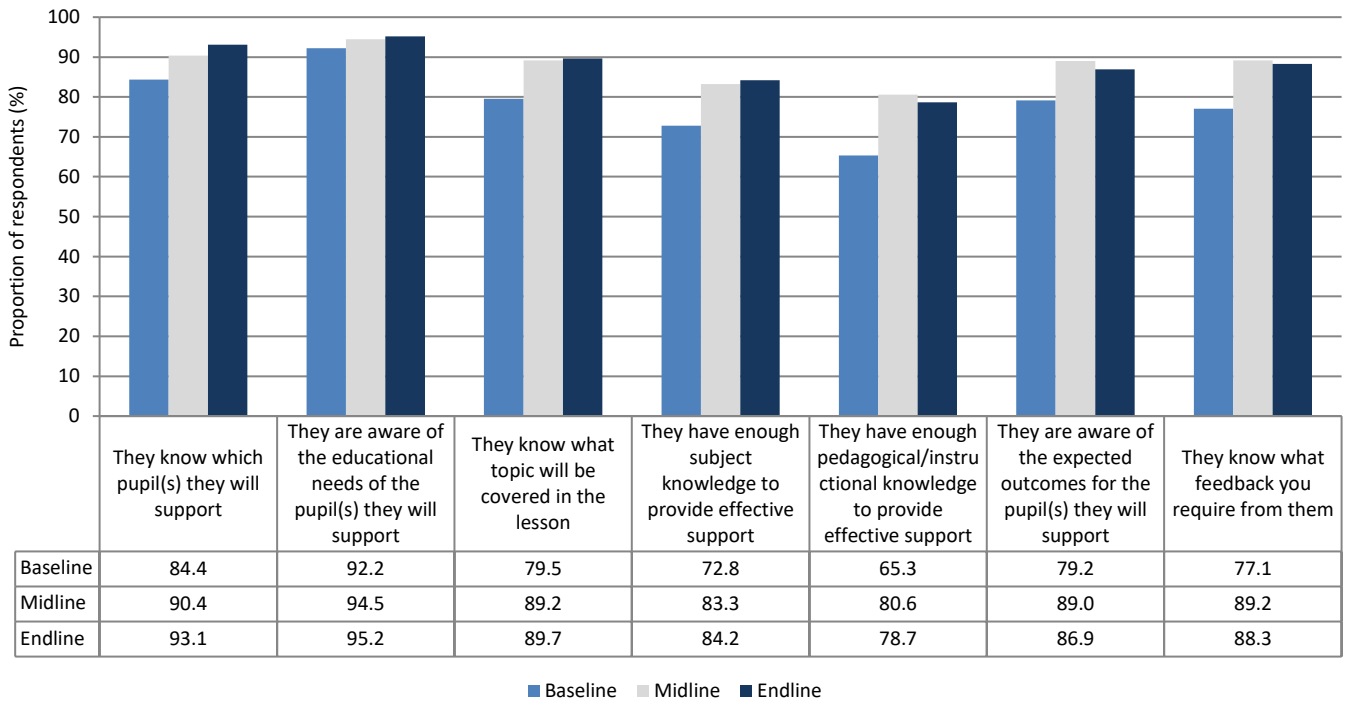
One of the core aspects of the MITA ToC is that several TA-teacher processes are improved, including the quality of TA preparedness to teach lessons, opportunities for teachers and TAs to liaise on elements that will support teaching and learning (such as lesson plans), and the quality of TA feedback to teachers. To understand this better, data was collected throughout the trial as part of the surveys, case study school visits, and observations.

Pre-lesson preparation

Overall, the proportion of teachers who reported that TAs do not plan or prepare for lessons fell substantially between the timepoints (42.9%, 124 of 289 at baseline; 31.5%, 154 of 489 in Phase 1; 28.9%, 84 of 291 in Phase 2), although there was not much change among TAs' responses (17.1%, 65 of 381 at baseline; 18.3%, 127 of 693 in Phase 1; 17.3%, 65 of 375 in Phase 2). This suggests that either teachers did not have a clear picture of what TAs were doing, or that TAs had a different definition of what 'planning and preparation' entailed.

Figure 14: Teachers' views on the preparedness of TAs for lessons

	They know which pupil(s) they will support	They are aware of the educational needs of the pupil(s) they will support	They know what topic will be covered in the lesson	They have enough subject knowledge to provide effective support	They have enough pedagogical/instructional knowledge to provide effective support	They are aware of the expected outcomes for the pupil(s) they will support	They know what feedback you require from them
Baseline	84.4	92.2	79.5	72.8	65.3	79.2	77.1
Midline	90.4	94.5	89.2	83.3	80.6	89.0	89.2
Endline	93.1	95.2	89.7	84.2	78.7	86.9	88.3

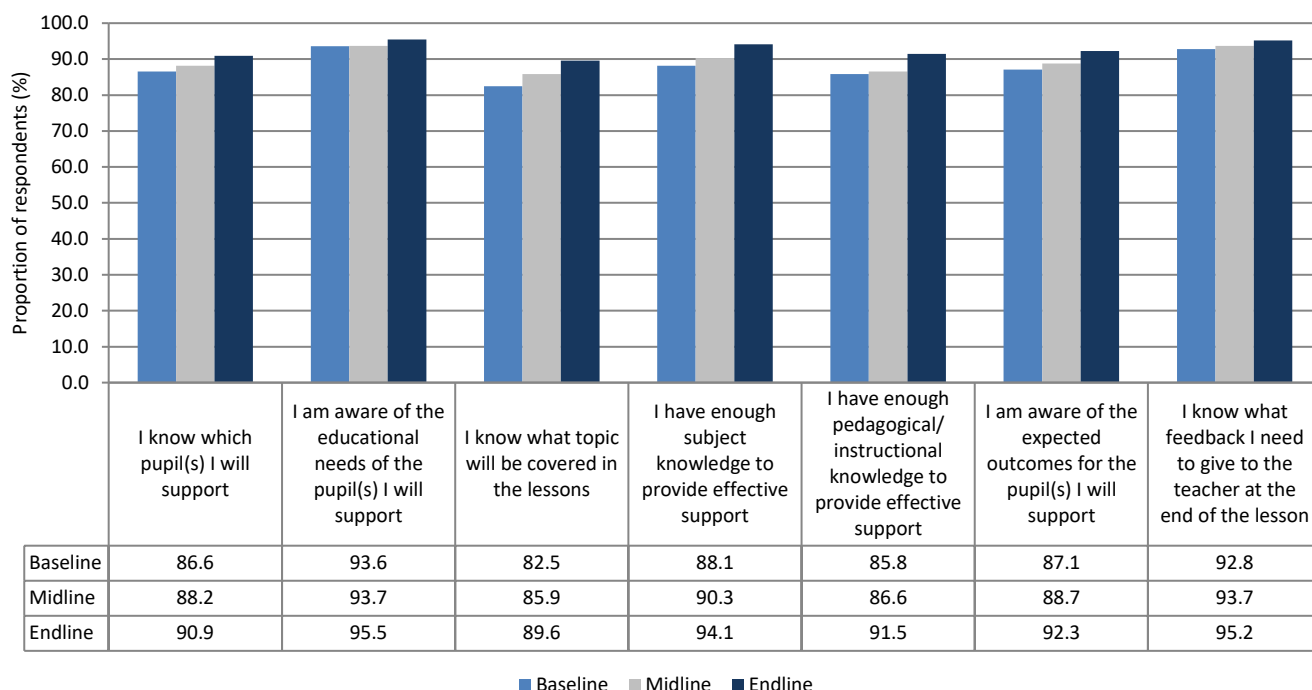■ Baseline ■ Midline ■ Endline

Note: Teacher baseline survey, n = 309; teacher midline survey, n = 490; teacher endline survey, n = 291. Question: 'There are a number of things that can help TA(s) to be effective in lessons. For each of the areas listed below, please indicate, on average, how prepared you feel TA(s) are when they come into your lessons.' The figure reports on the proportion of respondents that responded 'always' or 'often' to these questions. The number of respondents at planning varied by question between 269 and 309. The data table below the graph shows the proportion of respondents who responded in this way to each of these questions across the three timepoints.

As shown in Figure 14, teachers generally reported positive views on the preparedness of TAs to be effective in lessons across the three timepoints. For example, while just under 80% (245 of 308) of teachers felt that TAs 'always' or 'often' knew what topic would be covered in the lesson at baseline, this increased substantially at the end of Phase 1 (89.2%, 437 of 490). These findings were sustained in Phase 2, with some marginal increases (89.7%, 261 of 291). Similarly, between all evaluation timepoints, the proportion of teachers who felt that TAs always or often knew which pupil(s) they will support increased from 84.4% (227 of 269) to 90.4% (443 of 490) in Phase 1 and further to 93.1% (271 of 291) in Phase 2. Around two-thirds of teachers (65.3%, 181 of 277) reported at baseline that TAs always or often had enough pedagogical/instructional knowledge to provide effective support, with this increasing noticeably by the end of Phase 1 (80.6%, 395 of 490). However, this was followed by a minor decrease at the end of Phase 2 (78.7%, 229 of 291). Similarly, when asked to comment on TAs' awareness of the expected outcomes of the pupils that they supported, there was a substantial increase in the proportion of teachers who reported that TAs are always or often aware of this between baseline and at end of Phase 1 (79.2%, 224 of 283, and 89.0%, 436 of 490, respectively), albeit followed by a minor decline at the end of Phase 2 (86.9%, 253 of 291).

TAs reported similarly positive views about their preparedness for coming into lessons. Interestingly, while the main trend among teachers' responses was one of increase between baseline and end of Phase 1 followed by a decline at the end of Phase 2, TAs often reported modest increases between baseline and the end of Phase 1 and a more substantial increase between Phase 1 and Phase 2. Indeed, as shown in Figure , there was a particularly strong majority of TAs (over 90% across the three timepoints) who agreed that they were always or often aware of the educational needs of the pupils they supported and knew what feedback they needed to give to the teacher at the end of the lesson. The majority of TAs also reported that they always or often knew which pupils to support, had enough pedagogical knowledge to provide effective support, and were aware of the expected outcomes for the pupils they supported.

Figure 15: TAs responses to questions about their preparedness for lessons

	I know which pupil(s) I will support	I am aware of the educational needs of the pupil(s) I will support	I know what topic will be covered in the lessons	I have enough subject knowledge to provide effective support	I have enough pedagogical/ instructional knowledge to provide effective support	I am aware of the expected outcomes for the pupil(s) I will support	I know what feedback I need to give to the teacher at the end of the lesson
Baseline	86.6	93.6	82.5	88.1	85.8	87.1	92.8
Midline	88.2	93.7	85.9	90.3	86.6	88.7	93.7
Endline	90.9	95.5	89.6	94.1	91.5	92.3	95.2

■ Baseline ■ Midline ■ Endline

Note: TA baseline survey, n = 388; TA midline survey, n = 693; TA endline survey, n = 375. Question: 'Thinking about your daily work, for each of the areas listed below please indicate, on average, how prepared do you feel when you come into lessons? Please mark one choice in each row.' This question was asked consistently across the three timepoints. The figure reports on the proportion of respondents that responded 'always' or 'often' to these questions. The data table below the graph shows the proportion of respondents who responded in this way to each of these questions across the three timepoints.

While there was some agreement among TAs around this point at planning, by Phase 2, a majority of TAs reported that they always or often knew what topic would be covered in the lessons they were involved in. This is supported by findings in the case study schools where TAs noted the impact of the additional time on communication:
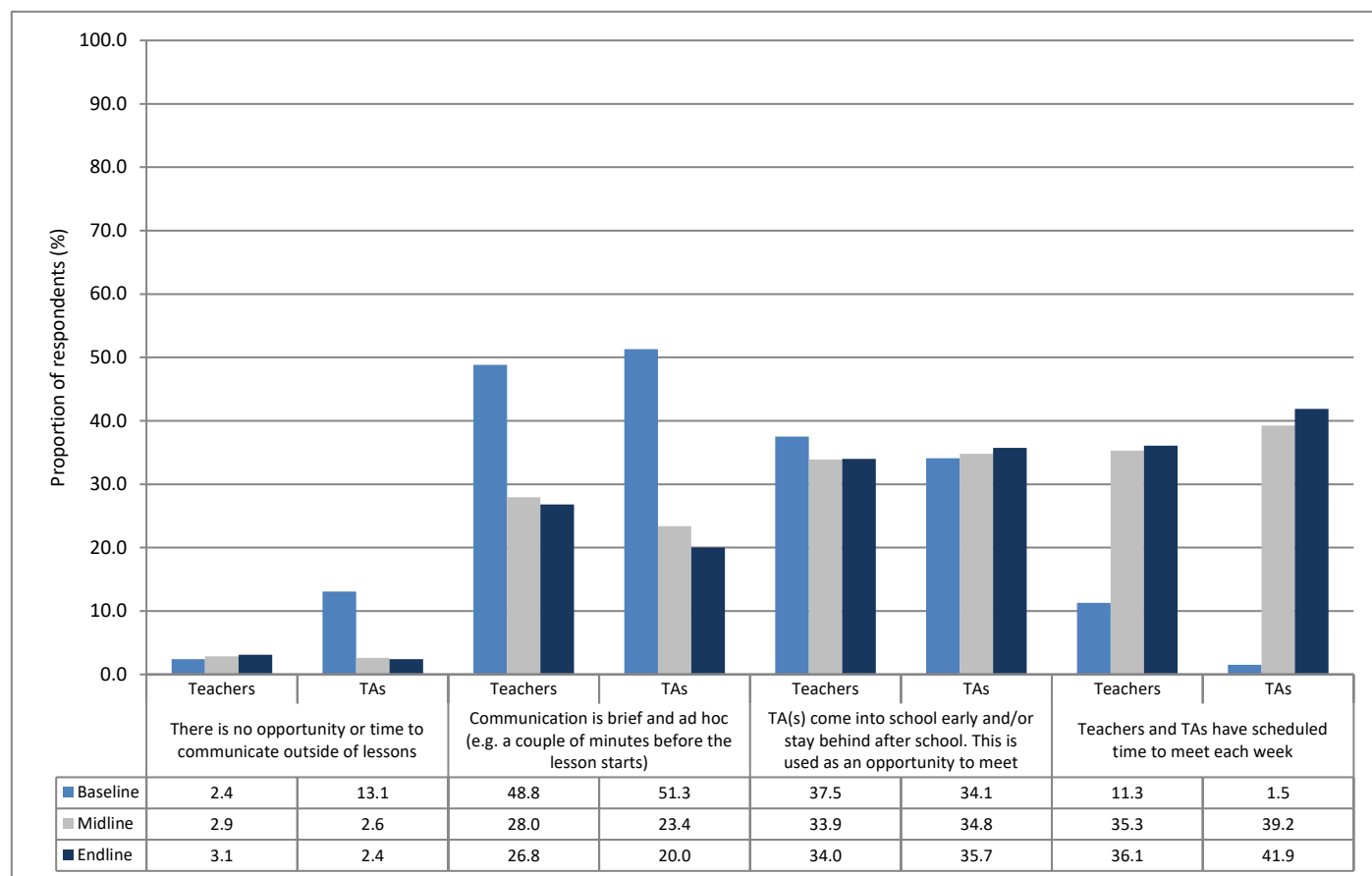
> 'It was very useful; I was given a lot of strategies to help the child solve the problem theirself [sic] before I jumped in … one of our weakest areas when MITA arrived was the lack of communication between the teacher and the TA, not getting any planning at all, being thrown in at the deep end when you walk in the classroom … TAs … now know exactly what they are doing and are prepared for lessons' (School 6, Year 6 TA).

Overall, then, teachers and TAs reported (generally increasingly) positive views on the preparedness of TAs in the classroom as the MITA intervention progressed.

Opportunities for teacher-TA liaison

Evidence from the surveys indicates that teachers and TAs consistently had opportunities to interact meaningfully to support teaching and learning across the timepoints. As shown in Figure , the proportion of teachers and TAs reporting that they had no opportunities to communicate outside of lessons was very low across the three timepoints. This was consistently low among teachers (2.4%, 7 of 293 at baseline; 2.9%, 14 of 490 in Phase 1; 3.1%, 9 of 291 in Phase 2) and TAs (1.5%, 6 of 390 at baseline; 2.6%, 18 of 693 in Phase 1 and; 2.4%, 9 of 375 in Phase 2).

Figure 16: Teachers' and TAs' views on communication

	Teachers	TAs	Teachers	TAs	Teachers	TAs	Teachers	TAs
	There is no opportunity or time to communicate outside of lessons		Communication is brief and ad hoc (e.g. a couple of minutes before the lesson starts)		TA(s) come into school early and/or stay behind after school. This is used as an opportunity to meet		Teachers and TAs have scheduled time to meet each week	
Baseline	2.4	13.1	48.8	51.3	37.5	34.1	11.3	1.5
Midline	2.9	2.6	28.0	23.4	33.9	34.8	35.3	39.2
Endline	3.1	2.4	26.8	20.0	34.0	35.7	36.1	41.9

Note: Teacher baseline survey, n = 293; teacher midline survey, n = 490; teacher endline survey, n = 291. TA baseline survey, n = 390; TA midline survey, n = 693; TA endline survey, n = 375. Question: 'We would like to know about the opportunities you have to meet and communicate with the TA(s)/teachers you work with. Please select the statement below which best describes your experience.' Questions were asked consistently across the timepoints.

There was a dramatic reduction in the proportion of teachers and TAs who reported that communication was brief and ad hoc—particularly between baseline and Phase 1. This was reported by 48.8% of teachers (143 of 293) and 34.1% of TAs (133 of 390) TAs) at baseline—the most common response among both surveyed staff groups. At Phase 1, the figures had reduced to 28.0% of teachers (137 of 490) and 23.4% of TAs (162 of 693). There was a further decrease in the proportion of teachers (26.8%, 78 of 291) and TAs (20.0%, 75 of 375) reporting this in Phase 2. This is in line with the ToC.

It is interesting to note that TAs reported an increased need to come in early or stay behind after school to provide time to meet, while the opposite was true for teachers. Between baseline and the end of Phase 2 there was a slight but overall increase of 5% of TAs reporting they would come in early or stay afterschool compared to a 9.1% reduction of this behaviour in teachers. This could suggest that TAs needed to find ways to create more time to liaise and communicate with teachers, though the increase in this reported behaviour is minimal.

Arguably the most striking trend—presented in Figure 16—is the fact that there was an increase in the proportion of teachers and TAs that indicated that they had scheduled time each week for communication across the three timepoints. This is most noticeable between baseline (11.3%, 33 of 293 teachers; 1.5%, 6 of 390 TAs) and the end of Phase 1 (35.3%, 173 of 490 teachers; 39.2%, 272 of 693 TAs). There was a further increase in both staff group respondents at the end of Phase 2 (36.1%, 105 of 291 teachers; 41.9%, 157 of 375 TAs). Overall, this represents a net increase between baseline and endline of 24.8% for teachers and 40.3% for TAs.

This trend was also reflected in the case study analysis. Indeed, through MITA, three of the four intervention schools (6, 7, and 9) now included time for teachers and TAs to meet within TAs contracted hours. Well before lessons, teachers shared lesson plans, going on to discuss pupil groupings, progress, feedback, and individual support plans. One of these schools also included scaffolding and resourcing guidance for all ability groups. Three teachers

commented that TA feedback was useful in informing lesson planning. These meetings enabled misconceptions to be clarified, gaining a clearer understanding of both lesson objectives and pupil progress:

> 'When I feed back to the teacher, the teacher respects far more, I think now, that … using the MITA strategies is more a true reflection of where the child really is in their learning' (School 9, Year 6 TA).

Two schools chose short, frequent (daily) meeting times while a third used teachers' planning, preparation, and assessment (PPA) time for more extended meetings. The fourth set no specific time aside for meetings; these took place in the TAs' own (unpaid) time: both TAs interviewed arrived early to school to discuss which children they would be working with, having previously received a timetable of interventions from the SENDCo.

Early in the training year, an observed review visit at this school consisted of Key Stage 1 and 2 lesson observations, meetings with TAs and teachers, and with the headteacher and SENDCo. The consultant noted that the headteacher and SLT were already proactively working towards timetabling 'planning and feedback' meeting times for teachers and TAs and for TAs to work with pupils of all abilities.

Feedback between TAs and teachers

One important aspect of MITA is improved communication between TAs and teachers. Findings from the survey suggest that there was an increase in the proportion of TAs indicating that they received feedback from teachers. The proportion of TAs reporting that they always or often receiving feedback from teachers increased across all the timepoints (63.5%, 244 of 384 at baseline; 65.2%, 452 of 693 at the end of Phase 1; 71.7%, 269 of 375 at the end of Phase 2). Overall, this represents an increase from baseline to endline of 12.9%. Conversely, the proportion of TAs indicating that teachers rarely or never provided feedback fell noticeably between Phase 1 and Phase 2 after a slight increase earlier in the trial (10.4%, 40 of 384 at baseline; 11.1%, 77 of 693 at the end of Phase 1; 6.9%, 26 of 375 at the end of Phase 2).

Overall, the vast majority of TAs reported at baseline that they always or often knew what feedback to give to the teacher at the end of the lesson—and this improved somewhat throughout the trial (92.8%, 360 of 388 at baseline; 93.7%, 649 of 693 at the end of Phase 1; 95.2%, 357 of 375 at the end of Phase 2). Teachers also reported increasingly positive views on the TAs' ability to know what feedback teachers required from them. Again, there was a noticeable increase in the proportion of teachers who reported that this was always or often the case between baseline (77.1%, 225 of 292) and the end of Phase 1 (89.2%, 437 of 490), followed by a minor decrease at the end of Phase 2 (88.3%, 257 of 291). Overall, this represents an increase of 14.5% from baseline to endline, suggesting that TA-teacher feedback markedly improved over the course of the trial.

In summary, these findings suggest that, overall, MITA improved feedback between TAs and teachers, particularly in terms of TAs reporting that teachers provided feedback and teachers reporting that TAs knew what feedback was required. Interestingly, at baseline, TAs reported they always or often knew what feedback to give to the teacher at the end of the lesson. This increased by 2.6% between baseline and endline. This is in contrast to teacher views, which suggest that TAs markedly improved their ability to know what feedback teachers required from them over the course of the trial (10.2% increase from baseline to endline). This suggests that teacher views and TA views of appropriate feedback were not aligned and that reports of improvements in this domain vary between the two groups, with teachers suggesting more marked improvements than TAs.

Quality of TA-pupil interactions

One of the outcomes specified in the intervention ToC (Figure 1) is an increase in the quality of TA-pupil interactions, specifically increases in TAs' use of effective scaffolding strategies (that is, giving pupils more 'wait time', the use of prompts and clues, and reduced use of correction) and pupils' self-scaffolding strategies. To assess this, data on TAs' interactions with pupils were captured via audio recordings of TAs and pupils during observed lessons (see the sub-section on Research methods for more information) at the start and end of the Phase 1 (hereafter baseline and midline respectively for this analysis) and at the end of Phase 2 (hereafter endline for this analysis). Interviews in case study schools also provided some insights on changes to usual practice in TA-pupil interactions.

As can be seen from Table 36, most of the predicted TA behaviours improved from baseline for the first seven behaviours (prompting, clueing, and modelling) and decreased for the correcting behaviours. Overall, the trends support the conclusion that TAs changed behaviour in line with the MITA ToC. Prompting overall increased from 22% at baseline to 49% at the end of Phase 2, as did clueing overall with an increase of 26% to 45%. Interestingly, modelling did not change.

Table 36: TA-pupil interactions in MITA schools as a proportion of total number of utterances coded

	Baseline	End of Phase 1	End of Phase 2
Prompting overall	**22%**	**66%**	**48%**
Prompting waiting	4%	21%	15%
Prompting verbal	18%	44%	34%
Clueing overall	**26%**	**16%**	**45%**
Clueing information	5%	7%	15%
Clueing questions	11%	8%	23%
Clueing choices	0%	0%	1%
Clueing incomplete utterances	9%	2%	7%
Modelling	**2%**	**2%**	**2%**
Correcting overall	**51%**	**16%**	**4%**
Correcting answer	42%	2%	1%
Correcting instruction	9%	15%	3%

In terms of decreases in behaviour, in line with the MITA ToC, TA overall correcting behaviours reduced between baseline and the end of Phase 2, with a striking decrease from 51% to 4%. Taken together, this suggests that some elements of MITA may have been more embedded than others, but in general TA behaviour was coded as being in line with the ToC.

In the case study analysis of interviews, one school in particular stood out in terms of the changed nature of its TA-pupil interactions. Using a hierarchy of strategies, its TAs now gave the least amount of help first. All staff understood this. They also understood the need for providing thinking time for pupils before giving prompts (wait time is in itself a type of prompt), having become comfortable with questioning and then waiting:

> *'The children are doing more of the talking, the children are doing more of the working ... it looks like, if they were being observed, that they weren't actually doing much ... actually, while you're doing that wait time, you're processing what you think about what this child is thinking and what this child is saying as well and ... unravelling that for yourself while you're actually giving that time to the child' (School 9, SENDCo).*

This school's headteacher also observed that TAs' classroom practice had changed significantly, with different forms of questioning, clueing, and prompting now being used regularly.

The Year 6 TA in another school readily used such strategies as clueing, prompting, peer support, and modelling. She also encouraged pupils to refer to classroom resources independently, increasing their self-reliance as learners.

The headteacher confirmed that TAs now worked with more able children and that there was more fluidity and flexibility in teachers' and TAs' ways of working within individual classrooms.

Initially, several TAs reported that they found ensuing silences involved in providing sufficient 'thinking time' for pupils somewhat uncomfortable. However, with support and reinforcement from staff, TAs were able to become more comfortable in giving prompts and questioning pupils further. Moreover, this silence also permitted staff their own 'thinking time':

> *'Previously I used to find myself jumping in, saying "oh, you'll find that in there", whereas now I'll say, "Oh, what could you use to find that information?"' (School 6, Year 3 TA).*

Even in schools where effective scaffolding strategies were in place, MITA supported these to be embedded further. For example, in one school many of the MITA principles were already in place because of ideas contained within its School Improvement Plan (SIP). However, after MITA training one of its TAs, used to 'back and forth' interactions with pupils, realised she was not applying some of them as much as she thought and consequently adjusted her practice.

In summary, overall, findings from case study schools suggest that TAs were using the effective scaffolding strategies outlined in MITA.
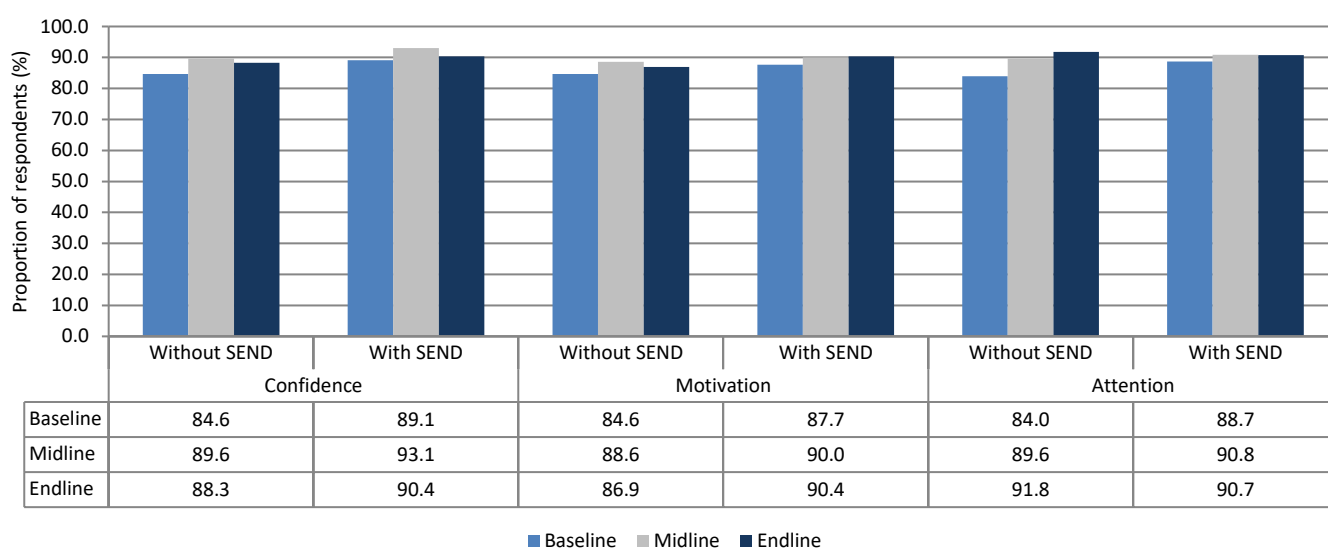
Pupil outcomes—intended and unintended consequences

Teachers in treatment schools were asked about the impact of TAs on the development of pupils across the three timepoints in three domains: confidence, motivation, and attention. This was to explore both intended and unintended consequences. Teachers were asked specifically about the impact of TAs on the development of pupils with and without SEND.

As shown in Figure 17, survey responses from teachers on this impact were positive. The proportion of teachers who responded positively to these survey questions increased between baseline and the end of Phase 1. In terms of pupil confidence, the proportion of teachers that reported TAs had a significantly, or mostly, positive impact on pupils' confidence increased both for pupils without SEND (84.6%, 248 of 293 at baseline; 89.6%, 439 of 490 at the end of Phase 1) and pupils with SEND (89.1%, 261 of 293 at baseline; 93.1%, 456 of 490 at the end of Phase 1). However, for both groups, this was followed by a proportional decrease by follow-up (to 88.3%, 257 of 291 and 90.4%, 263 of 291, respectively) although still representing a strong majority of respondents. Overall, this represents an increase from baseline to the end of Phase 2 of 4.3% for pupils without SEND and 1.5% for pupils with SEND. These are slightly lower than the magnitude of difference between baseline and the end of Phase 1, which was 5.9% for pupils without SEND and 4.5% for pupils with SEND. This suggests that perhaps the magnitude of change observed at the end of Phase 1 is not maintained to a certain extent at the end of Phase 2.

For pupil motivation, the proportion of teachers who responded positively to these survey questions increased for both pupils without SEND (84.6%, 248 of 293 at baseline; 88.6%, 434 of 490 at the end of Phase 1; 86.9%, 253 of 291 at the end of Phase 2) and for pupils with SEND (87.7%, 257 of 293 at baseline; 90.0%, 441 of 490 at the end of Phase 1; 90.4%, 263 of 291 at the end of Phase 2). Overall, this represents an increase from baseline to the end of Phase 2 of 2.7% for pupils without SEND, which is slightly lower than the magnitude of difference between baseline and the end of Phase 1, which was 4.7%. This trend is similar to pupil confidence. Interestingly, for pupils with SEND, gains were slightly more pronounced at the end of Phase 2 compared to the end of Phase 1 (3.0% and 2.6% respectively), however, at 0.4% these differences are relatively marginal.

Arguably the most marked trend, shown in Figure 17, is that of teachers' views on the impact of TAs on pupil attention for those without SEND. Indeed, between baseline and the end of Phase 1, there was a substantial increase in the proportion of TAs who reported that their impact on pupil attention was significantly or mostly positive (84.0%, 246 of 293 at baseline; 89.6%, 439 of 490 at the end of Phase 1). This increased further by the end of Phase 2 (91.8%, 267 of 291). This represents an overall increase of 9.3% between baseline and the end of Phase 2, and unlike pupil confidence and motivation of pupils without SEND, increased between Phase 1 and Phase 2.

Figure 17: Proportion of teachers reporting in surveys that TAs had a 'significantly positive' or 'mostly positive effect' on aspects of pupil development

	Confidence		Motivation		Attention	
	Without SEND	With SEND	Without SEND	With SEND	Without SEND	With SEND
Baseline	84.6	89.1	84.6	87.7	84.0	88.7
Midline	89.6	93.1	88.6	90.0	89.6	90.8
Endline	88.3	90.4	86.9	90.4	91.8	90.7

■ Baseline   ■ Midline   ■ Endline

Note: Teacher baseline survey, n = 293; teacher midline survey, n = 490; teacher endline survey, n = 291. Question: 'In general, when a TA is in the classroom, how would you describe their impact on the following aspects of pupil development? FOR PUPILS WITHOUT/WITH SEND.' Questions were asked consistently across the time points. The data table below the graph shows the proportion of respondents who responded in this way to each of these questions across the three timepoints.

Figure 17 highlights that there was an increase in the proportion of teachers who reported a significant or mostly positive impact on the attention of pupils with SEND between baseline (88.7%, 260 of 293) and the end of Phase 1 (90.8%, 445 of 490) that was maintained at the end of Phase 2 (90.7%, 264 of 291).

Overall, these findings show that the majority of teachers reported TAs to have a positive impact on pupil confidence, motivation, and attention and, in half of the cases, these positive views strengthened across the timepoints. It should be noted that across all findings, views of TA impact were already quite positive at baseline—between 84% and 88% of respondents claimed that TAs had a significant of mostly positive effect—and that, with the exception of the marked increase in attention for pupils without SEND, gains were relatively modest (between 1.5% and 4.3%).

There was nothing in the findings to suggest that there were unintended consequences.

TA confidence

Generally, schools felt that MITA had positive impact on a wide range of behaviours in terms of TA confidence and teaching skills. Headteachers in case study schools also reflected positively on the impact of MITA training on TAs in their school. One reported that TAs received the training positively and welcomed the opportunity to develop new skills. TAs' comments in School 9 indicated that MPTA training had highlighted the importance and relevance of such skills as resilience, careful listening, and independent learning. This TA was now much more aware of the degree and nature of pupils' different understandings. The school's Year 3 TA remarked:

> 'You're allowing the children to develop into the child that that they can be. They have to find their own ways and you have to find your own skill set, but you just need to promote independence and those connections that they know' (School 9, Year 3 TA).

At another school, the SENDCo felt that TAs who had undergone MITA training seemed to be more confident and were quite skilled-up in various areas now. The SENDCo commented that TAs felt more professional about their practice and were keen to take on more responsibilities.

These views are supported by the survey results, which show an overall increase in TAs feeling 'very confident' that they can carry out their role effectively, a gain of 7.9% between baseline and the end of Phase 2. Conversely, there was a 8.2% decrease in TAs reporting that they were 'confident' or 'somewhat confident' during the same time period. Interestingly, there appears to be a dip of 6.5% between baseline and the end of Phase 1 in TA's reporting they felt 'very confident' that they can carry out their role effectively of 6.5%. Linked to this is the fact that 6.3% more TAs reported they were 'confident' or 'somewhat confident' during the same time period. This suggests that gains in TA

confidence are most marked in Phase 2. Reasons for this are unclear from the data that was collected but one hypothesis is that MITA becomes more embedded in schools during Phase 2 allowing TAs to develop their skills, which is in line with the ToC.

More generally, open-ended survey responses revealed that MITA benefitted schools in a number of ways: by raising the profile of TAs, promoting TA inclusion in the school, changing wider practices throughout the school regarding professionalism and deployment of school staff, reconsidering scaffolding approaches, shaping staff-pupil interactions and promoting pupil independence, reviewing practices within the school, and establishing a shared vision within the school on staff deployment.

Mediating and moderating factors

During data collection and analysis of IPE activities, an exploration of mediating and moderating factors was undertaken and are discussed below. MITA aims to better deploy TAs and improve pupil outcomes through higher quality TA-pupil interactions, improved classroom management and lesson planning, and allowing classroom teachers to work more with lower-achieving pupils. However, a number of key issues emerged within the analysis of case studies which seemed to affect the implementation of MITA. These included the management of changes to usual practice, the needs of the class and its implications for funding availability, senior staff buy-in to MITA's core principles, and staff turnover.

It is important to note here that two other moderating factors are mentioned in the ToC: level of prioritisation over other demands and travel distance to schools with exemplary practices. However, these themes will not be discussed here as they did not emerge in the process evaluation activities as factors affecting implementation.

Management of changes to usual practice

The introduction of MITA inevitably involved changes to usual practice in treatment schools. The way in which headteachers introduced and managed change, gained staff support, addressed staff resistance, and implemented any necessary alterations across the school was of crucial importance to the success of MITA. Their readiness to explain the rationale underpinning change and an empathetic willingness to listen to staff concerns at the project's outset increased the likelihood of positive outcomes. For example, headteachers in two of the intervention case study schools had a clear purpose for introducing MITA and its associated changes, stressed the benefit that class teachers would be more able to deliver lessons exactly as they had planned them, and ensured staff knew that fair remuneration for everyone, including TAs, was important. The staff of these two schools welcomed change through their headteachers' demonstrating faith and confidence in their staff's ability to implement change.

In a third school, some staff resistance at the beginning of Phase 1 was managed through meetings between the headteacher, teachers, and TAs. These clarified expectations and explained the rationale underlying the change. This headteacher predicted that change then should happen within a reasonably short time. In the fourth school, the change in TA deployment was described by its headteacher as 'quite a battle', with several TAs and some teachers resisting it. Improving the situation took time. A SENDCo, appointed prior to the start of the trial, provided strong leadership and improved communication, disseminating minutes from school leadership team meetings to TAs and staff, ensuring that changes were ultimately successfully implemented. In addition, the headteacher attended all TA meetings, enabling them to talk directly to the SENDCo and raise their concerns. Relationships improved and the professionalism of the TA team increased.

In another case study school, the headteacher indicated that some teachers were initially sceptical about changes in practice as a result of implementing MITA but weekly meetings had provided opportunities to address their concerns. In another school, while the headteacher and SENDCo initially experienced negativity from some TAs, this lessened as time went on. Support was gained through continuous emphasis being laid upon the ultimate benefits to the children and staff of using MITA approaches in the classroom.

Another school's headteacher, deputy, and SENDCo had all proactively engaged with MITA principles from the start, successfully gaining staff support and managing resistance to change in the way they presented MITA to staff and explained the necessity for change, together with its likely ensuing benefits. Overall, then, the amount of time and effort needed to manage the changes to usual practice brought on by MITA by headteachers and SLTs should not be underestimated; indeed, this is a key moderator in the ToC (see Figure 1).

Nature and needs of class cohort and implications for funding availability

Interestingly, in the observation of MITA SLT CPD sessions it was reported that participants mainly agreed that TAs are a primary way that SEND pupils are included in the classroom. They indicated that sometimes this can be at odds with MITA principles because some children with behavioural problems do need one to one support otherwise they are too disruptive to the class. This may help explain any lack of changes in the deployment of TAs in some cases, as discussed below (see section on Deployment of teachers and TAs).

This was evident in one case study school. At the end of Phase 2, the headteacher of the school, in a relatively affluent geographical area, had few pupils receiving Pupil Premium funding but many with other additional needs: this limited the school's funding. Generally positive towards MITA, the headteacher had provided—within their contracted hours—time for teachers and TAs to meet and talk, pre- and post-teaching. Commenting that the MPTA CPD training had professionalised TAs and given them more confidence, the headteacher also reported that TA numbers were restricted through lack of funds, despite the needs of pupils. The headteacher acknowledged that 'handing over SEND children to the teacher is still an issue we are working on' (School 7, headteacher). In this school, the specific needs of children within one class provided significant challenges to its teacher's and TA's ways of working. Their teacher's practice had not changed:

> 'I have not implemented [MITA] at all this year because I haven't been able to. … I'm not sure how it checks in with the reality of teaching, if I'm honest with you … this class this year just doesn't fit it at all. I can't make it work. If I was to leave those two children [with special educational needs] on their own, they would do nothing. One of them can't write at all, so therefore he can't do anything without somebody's help' (School 7, Year 3 teacher).'

Senior staff buy-in to MITA's core principles

According to some interviewees in case study schools, the willingness of headteachers and other SLT members to positively engage with the core principles of MITA was important for effectively implementing change. Headteachers' perceptions of the usefulness of MITA approaches in improving teaching quality across all ability levels, and their ability to communicate these to staff, were important factors in gaining staff support.

One school's interim headteacher reported that their predecessor had engaged and motivated staff by presenting the principles underpinning the MITA programme, gaining staff support through fast-tracking many of the MITA practices 'early on'. As a result, staff were better able to withstand the challenges ensuing from the leadership change, which followed shortly afterwards. Training content for new staff was shared and the interim headteacher and several staff remain motivated to continue practising MITA approaches. Without any prompting at interview, teachers and TAs alike talked naturally about using specific MITA approaches in class, demonstrating a continuing awareness of them. Their interim headteacher said:

> 'We intend to continue to use the aspects of it … keep it alive, so to speak' (School 6, interim headteacher).

While headteacher buy-in is important, it is also important to note that this extends to all senior staff. At another school, the positive engagement of the headteacher, deputy, and SENDCo, their willingness to proactively engage with MITA principles, and their positive presentation of MITA and its likely ensuing benefits to staff successfully gained their staff's support and managed resistance to change.

It is clear from one case study school that positive attitudes from other SLT members can help overcome challenges arising when first adopting MITA principles. School 9's SLT experienced initial resistance from some TAs who saw MITA as an implicit slight upon their competence and practice. Although two TAs eventually left, the SLT's enthusiasm and commitment to embedding MITA principles in classroom practice diminished overall staff resistance:

> 'I think we are completely sold on [MITA] and every time we do lesson observations—that's me, the deputy, the SENDCo—we are looking to see this happening and we nearly always do' (School 9, headteacher).'

By contrast, at another case study school, the SENDCo's responses suggested strongly that MITA principles were not being championed at a senior level or embedded across the school. Although MITA was already in progress, in this school, staff changes resulted in new initiatives being introduced. Not only had the headteacher changed, but a new SENDCo had been appointed shortly afterwards. They introduced further initiatives concerning emotional literacy and curriculum development. During the SENDCo's interview, although repeatedly encouraged to talk about MITA concepts in practice, responses often concerned these other initiatives. In mentioning that TAs wanted to 'skill up' as

a result of MITA, the SENDCo did not specify which skills would increase and did not, despite prompting, mention any MITA-related concepts. The focus on non-MITA initiatives, coupled with a lack of understanding about key MITA principles, suggests that lack of buy-in at the senior level will have diminished MITA's successful implementation in this school. This demonstrable importance of senior leader buy-in is line with the ToC.

Staff turnover

Staff turnover emerged as a key theme affecting the ability of schools to embed MITA principles. Interestingly, this was true for staff at the senior (SLT) level and classroom (teacher and TA) level.

Changes to staffing at the senior level led to significant difficulties with embedding MITA in schools. Three of the five intervention case study schools were affected by changes in their school SLT. These led to one school withdrawing from the project at the end of Phase 1 and to two others experiencing some difficulty in embedding MITA's core principles. The headteacher of one of these schools, a relatively junior staff member at the beginning of the MITA project in their school, was given the post of interim headteacher and matters of leadership took priority over MITA during Phase 1.

Similarly, another school's headteacher left suddenly, but immediately after Phase 1. Most of the CPD and gap tasks had been completed and so staff were able to implement many of the MITA principles in their classes, although those new to the post were working with little guidance aside from that shared by their teaching or TA colleagues.

> 'Support for MITA went on the back burner; it had to at that time, but I think at the point that that happened, our TAs were skilled enough, they'd learnt so much … in such a short space of time' (School 6, interim headteacher).

Another school, which experienced a change in headteacher, withdrew from the evaluation. While the previous headteacher had appeared to be enthusiastic about the intervention and was 'on track' at previous visits, the new headteacher did not feel the project was successful.

Similarly, classroom-based staff changes also hindered the long-term likelihood of success of the MITA intervention in some case study schools. In two schools there was no induction or training provided for new staff on the principles underpinning MITA. School 7's headteacher acknowledged this 'flaw in our system', adding, 'Any new scheme takes ages to embed. Consistency is key.' Although MITA had been 'transformational' and fitted in with the school's development plan, they admitted that the TA in the observed lesson (untrained in MITA) showed the need to ensure an induction process was in place for all new staff. Similarly, in another case study school there was no sharing of MITA practices to new staff, so the (non-MITA trained) teacher's practice regarding resources and grouping were different to those of the (MITA trained) TA, providing a 'minor source of mild conflict' and that their work together in class 'could be improved upon' (School 8, Year 6 TA).

However, two case study schools showed that it was possible to mitigate against lessening of MITA principles in the face of changes in classroom staff. After two TAs decided to leave School 9, newly recruited staff were given MITA training upon taking up their posts and received regular, ongoing input from the SLT on MITA's principles. Another school suggested that issues with staff changes could be overcome through appropriate induction and a cycle of observation and feedback.

Usual practice

Key findings from this section include:

1. Overall, it appears that the majority of control schools were actively seeking to improve their TA practice and that in many cases there was an overlap with many of the same resources used in the delivery of MITA.

2. While evidence from schools' TA training suggests that the control schools were actively engaged with MITA resources, evidence on TA deployment, TA preparedness, and TA-teacher communication suggests that teachers and TAs in control schools did not make substantial changes to their behaviour over the course of the evaluation. Comparison of changes over time further suggest that MITA schools tended to change behaviour in line with MITA's ToC, while control schools did not.

3. Findings suggest that teachers in control schools were less likely to agree that TAs had 'significant' or 'mostly positive' impact on the attention of pupils with and without SEND and the confidence, motivations, and

attention of pupils without SEND compared to teacher reports of TA impact in MITA schools. This further suggests that while control schools may have been actively engaged with MITA resources, this did not translate into a change in practice in line with the MITA ToC.

For the purposes of this evaluation, usual practice was explored in two ways: looking at the context of what treatment and control schools were doing prior to delivering MITA and also at what control schools were doing instead of delivering MITA. This supports an understanding of context to assess what elements are in place that might facilitate delivery of the programme as well as an understanding of how active schools are in terms of establishing the counterfactual. These will be discussed in turn below.

Usual practice in all schools at baseline

Deployment of TAs in the classroom

As shown in Table 37, the deployment of TAs—according to survey responses—was similar across treatment and control schools at baseline. This suggests that schools were very similar in their approach to TA deployment at the start of the trial.

It is most noticeable that the majority of TAs reported being very involved in mentoring pupils one to one and supporting pupils to achieve their learning goals and to understand instructions. The most common response among TAs in treatment and control schools was that they were very involved in preparing resources and materials to use in lessons, were involved in delivering learning activities, and that they were somewhat involved in delivering lessons and co-teaching. However, around half of TAs in both trial arms reported not being involved at all in the development of lesson plans.

Table 37: Most common responses among TAs to survey questions about their involvement in classroom activities at baseline

	Most common response	
Classroom activities	MITA schools (out of 378)	Control schools (out of 352)
Mentoring pupils one to one	Very involved (38.9%, 147)	Very involved (38.9%, 137)
Development of lesson plans	Not involved at all (50.0%, 189)	Not involved (53.4%, 188)
Preparing resources/materials to use in lessons	Very involved (36.2%, 137)	Involved (35.8%, 126)
Delivering lessons/co-teaching	Somewhat involved (29.9%, 113)	Somewhat involved (29.5%, 104)
Delivering learning activities	Involved (41.3%, 156)	Involved (37.5%, 132)
Providing advice and guidance to other colleagues	Somewhat involved (39.4%, 149)	Somewhat involved (41.8%, 147)
Supporting pupils to achieve their learning goals	Very involved (71.2%, 269)	Very involved (66.8%, 235)
Supporting pupils so that they understand instructions	Very involved (75.9%, 287)	Very involved (75.9%, 267)

Note: Treatment TA baseline survey, n = 378; control TA baseline survey, n = 352. Question: 'How involved are you in the following activities? Please mark one choice in each row.' Questions were asked consistently across treatment and control schools.

When asked to report on the pupils that they spent the longest time with in classrooms at baseline, TAs in both trial arms reported spending the most time with lower-attaining and SEND pupils, though there was a difference in the groups they spent the most time with. In treatment schools, the most common response was that they spent the longest time with lower-attaining pupils (39.7%, 155 of 390) followed by pupils with SEND (33.3%, 130 of 390). In control schools, this was reversed with just over one-third (36.6%, 130 of 355) reporting that they spent the most time with pupils with SEND followed by lower-attaining pupils (31.8%, 113 of 355). In both trial arms, the next most common response was that TAs spent the longest time with mixed ability pupils (18.2%, 71 of 390 in treatment schools; 20.0%, 71 of 355 in control schools). Overall, the deployment of TAs in the classroom was similar among treatment and control schools at baseline.

Usual practice in control schools during the trial

Activities to improve TA deployment and training

During Phase 1 and Phase 2, headteachers and SLT members across control schools were asked about whether their school had undertaken any other activities to improve TA deployment or training in the relevant academic year (2017/2018 for Phase 1, 2018/2019 for Phase 2). Across both timepoints, the majority of headteachers (72.2%, 26 of 36 in Phase 1; 88.2%, 15 of 17 in Phase 2) and other SLT members (73.9%, 85 of 115 in Phase 1; 76.0%, 38 of 50 in Phase 2) indicated that they had done so. This was supported by findings from the case study analysis, which indicated that all case study schools in the control arm had provided some form of TA training. In one case, TAs' contracted hours in one school were changed enabling them to attend five professional development days.

Particularly relevant is the fact that during Phase 1 two thirds of SLT members reported using TA guidance and resources produced by the EEF (66.7%, 18 of 27 headteachers; 46.4%, 39 of 84 other SLT members), and one third of headteachers (9 of 27) and almost a fifth of SLT members (17.9%, 15 of 84) indicated that one of the activities they had engaged in to improve TA deployment and training was the use of books or resources produced by MITA (for example, resources from **maximisingtas.co.uk**).

In general, it is clear that control schools were very actively engaged in improving TA practice. During Phase 1, the two most commonly reported activities by headteachers and other SLT members in control schools were training from an external provider to improve TAs' practice (70.4%, 19 of 27 headteachers; 72.6%, 61 of 84 other SLT members) and in-house training for TAs to improve their practice (92.6%, 25 of 27 headteachers; 91.7%, 77 of 84 other SLT members). Additionally, four headteachers and 11 other SLT members indicated at intervention year that they had engaged in other activities to improve TA deployment and training. These other activities included increasing the role of teachers in training and deploying TAs, the provision of more detailed guidance on how TAs should provide support for pupils with SEND, arrangements for TAs to visit other schools to see good practice, and TA peer review processes. Three control case study schools introduced performance management for TAs, with regular meetings between them and a senior teacher, in which a skills audit was carried out and any further training agreed.

Overall, it appears that the majority of control schools were actively seeking to improve their TA practice. Importantly, at the end of Phase 2, 13% of headteachers (2 of 15) and 8.3% of other SLT members (3 of 36) in control schools reported that they used books and resources produced by MITA, with both headteachers and two other SLT members indicating that these resources had a mostly positive impact on TA deployment within their school. Two-thirds of control school headteachers (10 of 15) and half of other SLT members (18 of 36) also indicated at follow-up that their school had used TA guidance and resources provided by the EEF, with most (7 of 10 headteachers; 14 of 18 other SLT members) reporting that this had a mostly positive impact on TA deployment within their school. As noted earlier, this suggests that control schools were actively using resources used in the delivery of MITA and based on the same principles as MITA.

By Phase 2, around two-thirds of headteachers (66.7%, 10 of 15) and other SLT members (69.4%, 25 of 36) reported that TAs in their school had received training from an external provider to improve their practice during the 2018/2019 academic year. Furthermore, 8 of the 15 headteachers and 18 of the 25 other SLT members indicated that this activity had a mostly positive impact on TA deployment within the school, while 2 (1 headteacher, 1 other SLT member) thought it had a small positive impact. Additionally, all 15 headteachers and the vast majority of other SLT members (91.7%, 33 of 36) indicated that TAs had received in-house training to improve practice during the 2018/2019 academic year. The majority of headteachers (60.0%, 9 of 15) and other SLT members (69.7%, 23 of 33) thought that this had a mostly positive impact on TA deployment in the school, with some headteachers (20.0%, 3 of 15) and other SLT members (15.2%, 5 of 33) reporting that it had a significant positive impact.

Taken together, this evidence suggests that any impact findings may underestimate the effect of MITA given the similarity between treatment and control conditions during the trial. Business as usual, therefore, is not the absence of the use of MITA or other similar programmes; instead, it may cover the use of some MITA resources or other programmes. It is possible that such engagement with MITA resources in the control schools may partially explain the null results. To explore this theme further we first undertook an analysis of the behaviour of control schools followed by a comparison of behaviours between MITA and control schools.

Deployment of TAs and teachers in the classroom

At baseline, TAs in control schools spent the longest time working with pupils with SEND (36.6%, 130 of 355) followed by lower-attaining pupils (31.8%, 113 of 355). One-fifth of TAs also reported working with mixed ability pupils for the longest time (20.0%, 71 of 355). At the end of Phase 1 TAs spent the longest time with SEND pupils (38.8%, 182 of

469) followed by lower-attaining pupils (31.3%, 147 of 469) and mixed ability pupils (21.5%, 101 of 469). At the end of Phase 2, there was a further proportional increase in TAs reporting spending the longest time with pupils with SEND (41.0%, 91 of 222) while the proportion of TAs reporting spending the longest time with lower-attaining pupils decreased marginally (29.3%, 65 of 222). There was a slight decrease in the proportion of TAs reporting that they spent the longest time with mixed ability pupils (18.5%, 41 of 222). Overall, between baseline and the end of Phase 2 there was a slight decrease in times TAs spent with lower-attaining pupils (7.9%) and mixed ability pupils (7.5%) and an increase in the time that TAs spent with SEND pupils (12%).

This is sharp contrast to schools in the treatment arm. TAs in control schools were still more likely to work with SEND pupils (increase of 12% between baseline and endline, compared to a 16.8% decrease in MITA schools) and while TAs in control schools decreased the amount of time they spent working with low-attaining pupils, this decrease was less marked than in MITA schools (7.9% and 36.8%, respectively). TAs in control schools also decreased the time they spent with mixed ability pupils by 7.5% whereas TAs in MITA schools increased the amount of time they spent with mixed ability groups by 75.8%. While evidence from schools' TA training suggests that the control schools were actively engaged with MITA resources, evidence on TA deployment suggests that this did not translate into changes in practice in line with MITA's ToC.

Data from the classroom observations in control schools presents a mixed image on the deployment of TAs and teachers. For lower-attaining pupils in Year 3 (see

Figure 10), there was little change observed in the proportion of time that was spent with teachers between baseline and Phase 2 (the median value increased from 38% to 42%) and TAs (the median value increased from 7% to 10%). In Year 6 classrooms, there was a noticeable decrease in the time that lower-attaining pupils spent with teachers (the median value decreased from 39% to 31%) and TAs (the median value decreased from 27% to 2%) for the same period. In Year 3 classrooms, there was very little change in the time SEND pupils spent with teachers from baseline to Phase 2 (median value remained at 26%, although there was more variability in the data at endline). There was a substantial increase in the proportion of time spent with TAs (the median value increased from 5% to 29%) for the same period. In Year 6 classrooms, both the proportion of time that SEND pupils spent with teachers (the median value decreased from 32% to 18%) and TAs (the median decreased from 48% to 4%) decreased between baseline and Phase 2.

This suggests that TAs in Year 6 were less likely to be working with lower-attaining pupils and SEND pupils (decrease of 25 and 44 percentage points, respectively). These trends are also mirrored in similar (though smaller) reductions for teachers across the same time points for the same groups of pupils (decrease of 8 and 14 percentage points respectively). Meanwhile, TA time spent working with Year 3 pupils increased markedly for those with SEND (24 percentage points) and marginally for lower-attaining pupils (3 percentage points). There is some evidence from reductions of time TAs in Year 6 spent with SEND pupils and pupils with lower attainment that MITA principles were applied in control schools. However, the fact that teachers also report decreases (though smaller in scale) and the fact that observations of other work in other groups and in other years are not consistent with MITA's approaches, provide little evidence to suggest that control schools were systematically applying the principles of MITA.

During the trial, TAs in control schools were asked to report on their time spent on specific activities through the surveys. Their responses were remarkably similar to TAs in treatment schools and did not change much as the trial progressed. Across the timepoints, the majority of TA time was spent (on average) on working directly with pupils (79.4% of TA time at baseline; 78.4% of TA time at the end of Phase 1; 77.8% of TA time at the end of Phase 2). TAs in control schools reported spending similar amounts of time liaising with teachers (10.7% of TA time at baseline; 12.6% of TA time at the end of Phase 1; 12.0% of TA time at the end of Phase 2) and engaging in other non-contact activities (9.9% of TA time at baseline; 11.2% of TA time at the end of Phase 1 and Phase 2). Overall, then, the evidence from the survey and observations of classroom activities was as expected for control schools: over the course of the trial, there was little evidence to suggest that lower-attaining and SEND pupils were spending less time with TAs and more time with teachers.

Similar to treatment schools, TAs in control schools were asked to rank six activities that they completed in their last three sessions based on the amount of time spent on each activity (Table 38).

At baseline, the TAs were more likely to report working one to one with a pupil, or working with a pair of pupils, while the activities that they reported doing the least were delivering lessons or co-teaching, listening to other teachers teach, and other activities. These trends remained largely the same at the end of Phase 1 and Phase 2. However, at the end of Phase 1, over one-fifth of TAs reported that delivering lessons or co-teaching was their most common activity in the last three lessons, with this being the second-most common rank at the end of Phase 2. TAs also,

seemingly, engaged more in the activity of listening to teachers teach as the trial progressed—this was ranked most commonly as the fifth activity that TAs engaged in within the last three lessons but the second-most common rank shifted from sixth at baseline to fourth at the end of Phase 1 and third at the end of Phase 2. Overall, these findings indicate that TAs in control schools were used in a wider range of roles as the trial developed: their core activities remained the same, but they were increasingly engaging in other activities that were not reported so much at baseline, for example, delivery of lessons and co-teaching. As previously shown in Table 37, these findings are largely similar to that reported by TAs in treatment schools.

Table 38: Time spent on activities in the last three lessons from control TAs

Timepoint →	Baseline (out of 359)		End of Phase 1 (out of 469)		End of Phase 2 (out of 222)	
Activity ↓	Most common rank	Second-most common rank	Most common rank	Second-most common rank	Most common rank	Second-most common rank
Working one to one with a pupil	1 (31.2%, 112)	2 (29.2%, 105)	1 (32.2%, 151)	3 (18.6%, 87)	1 (31.5%, 70)	3 (18.9%, 42)
Working with a pair or group	2 (38.2%, 137)	1 (36.8%, 132)	1 (35.2%, 165)	2 (30.1%, 141)	1 (38.7%, 86)	2 (21.6%, 48)
Walking around the classroom (monitoring/briefly supporting pupils)	3 (33.7%, 121)	4 (25.9%, 93)	3 (25.4%, 119)	4 (19.4%, 91)	3 (31.1%, 69)	2 (19.8%, 44)
Delivering lessons/co-teaching	6 (25.3%, 91)	5 (19.8%, 71)	1 (22.0%, 103)	5 (22.0%, 103)	5 (23.0%, 51)	1 and 6 (18.0%, 40)
Listening to teachers teach	5 (30.4%, 109)	6 (19.8%, 71)	5 (22.6%, 106)	4 (22.2%, 104)	5 (26.6%, 59)	3 (18.9%, 42)
Other (admin, marking)	6 (47.6%, 171)	5 (28.7%, 103)	5 (27.9%, 131)	6 (20.3%, 95)	6 (26.7%, 100)	5 (21.9%, 82)

Note: Control TA baseline survey, n = 359; control TA midline survey, n = 469; control TA endline survey, n = 222. Question: 'Thinking about what you did in your last three lessons, please order the following five activities by the amount of time spent on each from 1 to 5, where 1 is the activity you spent the MOST time doing in those lessons, and 5 is the activity you spent the LEAST amount of time doing.' Question was asked consistently across the time points.

These survey findings were largely consistent with what was found in case study control schools. TAs were rarely deployed for delivering small group interventions as these were felt to be more effectively delivered by class teachers, who provided favourable feedback concerning this strategy. TAs still provided one to one support or were deployed in the delivery of speech and language programmes. Across the five schools, however, there was a general downward trend of withdrawing pupils from class to receive TA-led interventions.

Overall, these findings across the different IPE data collection activities would suggest that as the trial progressed, the role of TAs in control schools began to diversify, working with a wider range of pupils than that reported at planning year.

Preparation, communication, and feedback

Teachers and TAs in control schools were asked several questions in the surveys about the preparation of TAs to work in the classroom as well as about the processes of communication and feedback between other members of staff (teachers in particular) and the TAs.

Figure 18: Control Teachers' and TAs' views on the TAs' preparation to work in the classroom
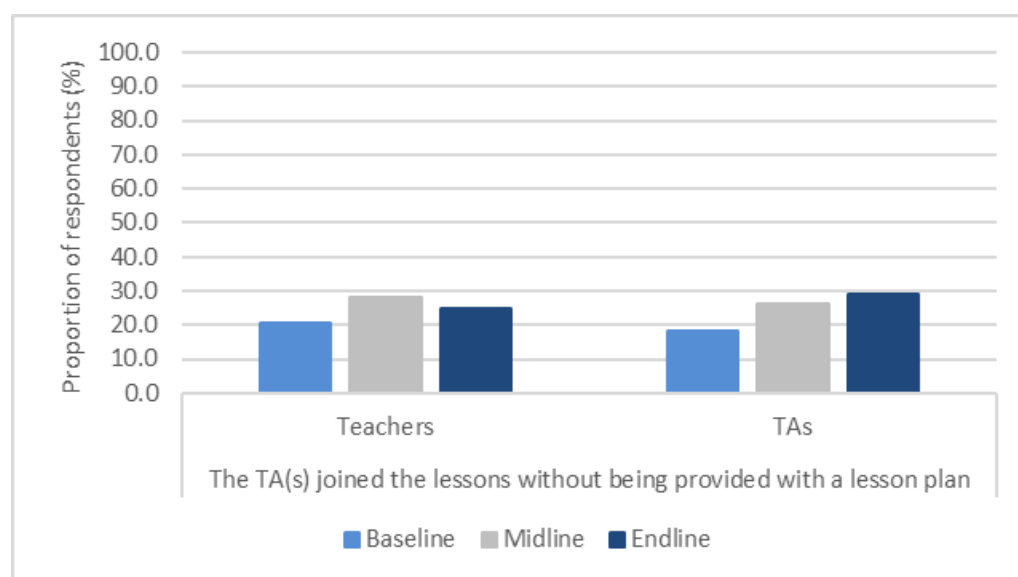
Note: Control teacher baseline survey, n = 279; control teacher midline survey, n = 361; control teacher endline survey, n = 219. Question: 'Reflecting on the last three lessons in which you had TA support, please select the option that best describes the preparation of TA(s) for these lessons'; control TA baseline survey, n = 352; control TA midline survey, n = 469; control TA endline survey, n = 222. Question: 'Reflecting on the last three lessons, please select the option that best describes your preparation for these lessons.' Questions were asked consistently across the timepoints.

Evidence from the surveys presents a mixed picture. As can be seen in Figure 18, there was a noticeable increase in the proportion of TAs reporting that they joined the last three lessons without being provided a lesson plan (18.2%, 64 of 352 at baseline; 26.0%, 122 of 469 at the end of Phase 1; 28.8%, 64 of 222 at the end of Phase 2). Conversely, TAs reported decreases in the extent to which they were provided with lesson plans and had clear information about their role (65.3% at baseline; 57.6% at the end of Phase 1; 55.4% at the end of Phase 2). The majority of TAs reported that they planned and prepared to work with specific pupils with some general guidance from teachers (44.3.8% at baseline; 42 at the end of Phase 1; 136.5 at the end of Phase 2). This decreased slightly as the trial progressed (loss of 7.8%). Almost a quarter of TAs reported that they had planned and prepared with detailed guidance from teachers (22.2%, 78 of 352 at baseline; 24.5%, 115 of 469 at the end of Phase 1, 25.2% 56 of 222 at the end of Phase 2) and this did increase somewhat over the course of the trial (gain of 3.1%). A small proportion of TAs reported that they planned with no input from teachers (12.8% at baseline, 12.2% at the end of Phase 1, 15.3% at the end of Phase 2). This increased slightly by 2.5% between baseline and end of Phase 2.

The majority of TAs across MITA and control schools at the end of Phase 2 reported joining lessons with clear lesson plans and having clear information about their role (65.1% and 55.4%, respectively). However, a comparison of trends over time suggests that TAs in MITA became generally more prepared for lessons and joined lessons with lesson plans more frequently than TAs in control schools.

As can be seen in Table 39 at baseline, TAs in control schools had similar responses to TAs in MITA schools in terms of preparedness in planning. However, by the end of Phase 2, TAs in controls schools were more likely to join in lessons without a lesson plan or clear guidance, compared to TAs in MITA schools. Between baseline and the end of Phase 2, TAs in control schools increased the number of lessons they joined without lesson plans (a 58.2% increase, compared to a reduction of 10.2.% reported by TAs in MITA schools) and decreased their reports of joining lessons with clear information about their role (reductions of 15.2% compared to an increase of 6.6% reported by TAs in MITA schools).

Table 39: TA reports of preparedness and planning, treatment and control schools

|	MITA schools		Control schools	
	Baseline	End of Phase 2	Baseline	End of Phase 2
Preparedness				
I joined the lessons without being provided with a lesson plan	23.5%	21.1%	18.2%	28.8%
I joined the lessons with a lesson plan, but had no information about my role/objectives for the lesson	2.6%	4.0%	5.1%	5.4%
I joined the lessons with a lesson plan, but had limited information about my role (e.g. only a list of pupils to support)	12.8%	9.9%	11.4%	10.4%
I joined the lessons with a lesson plan and had clear information about my role (e.g. outcomes/objectives for pupils)	61.1%	65.1%	65.3%	55.4%
Planning				
I planned and prepared with very little/no input from teachers	11.8%	9.6%	12.8%	15.3%
I planned and prepared with some general guidance from teachers	50.7%	44.0%	44.3%	36.5%
I planned and prepared with detailed guidance from teachers	20.5%	29.1%	22.2%	25.2%

TAs in control schools were also increasingly more likely to plan and prepare lessons with little or no input from teachers (19.5% increase from baseline to end of Phase 2 comparted to a reduction of 18.6% reported by TAs in MITA schools). In contrast, there were increases in the number of reports that TAs planned and prepared with detailed guidance from teachers (gains of 13.5% between baseline and end of Phase 2), which is in line with trends in MITA schools though much smaller in magnitude (gains of 41.9% between baseline and the end of Phase 2). While evidence from schools' TA training suggests that the control schools were engaging with MITA resources, evidence on TA preparedness suggests that this did not consistently translate into changes in practice in line with MITA's ToC.

Teachers and TAs in control schools were also asked about the nature of communications with one another throughout the trial. As shown in Figur, both teachers and TAs tended to indicate that their communications with TAs were brief and ad hoc—and the consensus among teachers strengthened over the timepoints (42.2%, 119 of 282 at baseline; 47.4%, 171 of 361 at the end of Phase 1; 50.2%, 110 of 219 at the end of Phase 2). Around one-third of TAs agreed with this view on communication with teachers across the three timepoints (31.3%, 111 of 355 at baseline; 29.6%, 139 of 469 at the end of Phase 1; 34.2%, 76 of 222 at the end of Phase 2).

Importantly, Figur shows that only a small proportion of teachers and TAs reported that there was no opportunity or time to communicate outside of lessons, although these proportions did increase between baseline and Phase 2 among both groups. Finally, a higher proportion of TAs (20.0%, 71 of 355 at baseline; 21.1%, 99 of 469 at the end of Phase 1; 18.9%, 42 of 222 at the end of Phase 2) reported that they had scheduled time to meet with teachers each week compared to the teachers themselves (13.5%, 38 of 282 at baseline; 10.8%, 39 of 361 at the end of Phase 1; 16.4%, 36 of 219 at the end of Phase 2).

Figure 19: Control teacher and TA views on communications
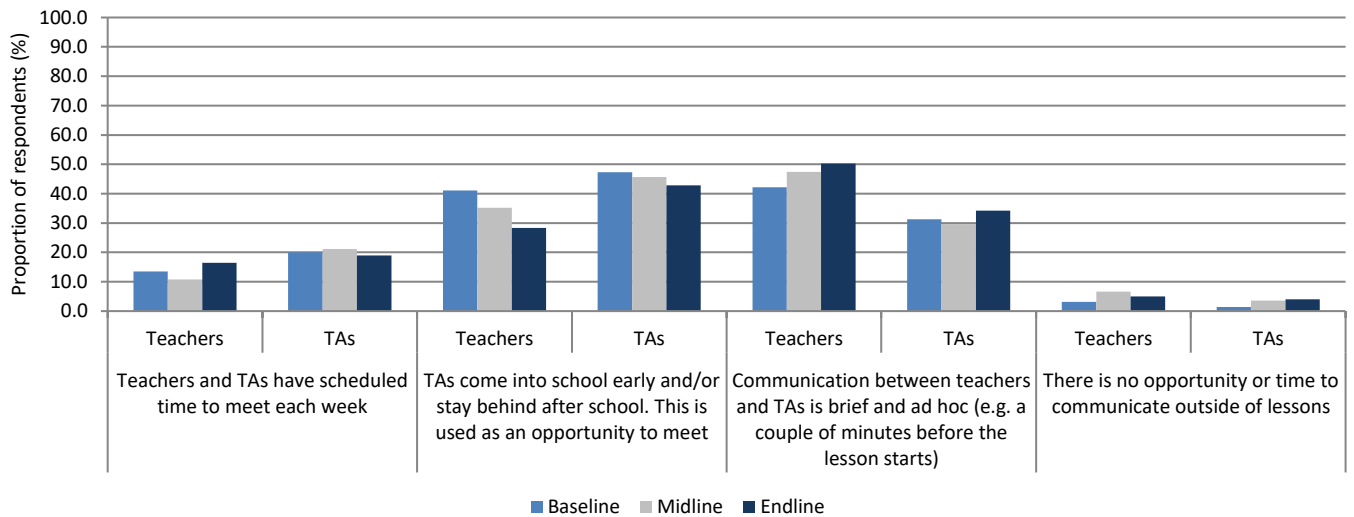
Note: Control teacher baseline survey, n = 282; control teacher midline survey, n = 361; control teacher endline survey, n = 219. Control TA baseline survey, n = 355; control TA midline survey, n = 469; control TA endline survey, n = 222. Teacher question: 'We would like to know about the opportunities you have to meet and communicate with the TA(s) you work with. Please select the statement below which best describes your experience.' TA question: 'We would like to know about the opportunities you have to meet and communicate with the teachers you work with. Please select the statement below which best describes your experience.' Questions were asked consistently across the three time points.

The extent to which feedback was used varied over the course of the trial. Feedback from teachers to TAs as reported by the TAs themselves increased between the planning and intervention year but decreased somewhat by Phase 2 (59.4%, 211 of 355 at baseline; 64.0%, 300 of 469 at the end of Phase 1; 57.2%, 127 of 222 at the end of Phase 2).

Interestingly, a comparison across control and treatment schools (see Table 39) suggests a marked discrepancy in behaviours reported by TAs at baseline. TAs in control schools were more likely to agree than those in MITA schools that there was scheduled time to meet (20% and 1.5%, respectively) and disagree that there was no opportunity to communicate with teachers (1.4% and 13.1%, respectively) suggesting that TAs in control schools felt they had opportunities to meet and communicated with teachers. TAs in control schools were also less likely than MITA TAs at baseline to report communication with teachers was brief and ad hoc (31.3% and 51.3%, respectively). This further suggests that TAs in control schools were comfortable with the level of communication from teachers at baseline. Based on these discrepancies at baselines, one hypothesis could be that control schools were already acting in line with MITA principles and that changes in the impact evaluation were not detected because control schools were very active (that is, acting in line with MITA principles). However, a comparison of teacher reports at baseline suggests more similarity between control and MITA schools, with teacher reports across both arms being very similar.

Table 40: TA and teacher reports of TA-teacher communication, treatment and control schools

	MITA schools		Control schools	
	Baseline	End of phase 2	Baseline	End of phase 2
TA				
The teacher(s) and I have scheduled time to meet each week	1.5%	41.9%	20.0%	18.9%
There is no opportunity or time to communicate with teacher(s) outside of lessons	13.1%	2.4%	1.4%	4.1%
My communication with teacher(s) is brief and ad hoc (e.g. a couple of minutes before the lesson starts)	51.3%	20.0%	31.3%	34.2%
Teacher				

The TA(s) and I have scheduled time to meet each week	11.3%	36.1%	13.5%	16.4%
There is no opportunity or time to communicate with TA(s) outside of lessons	2.4%	3.1%	3.2%	5.0%
My communication with TA(s) is brief and ad hoc (e.g. a couple of minutes before the lesson starts)	48.8%	26.8%	42.2%	50.2%

Note: These numbers are based on rounded figures; differences may not always be equal to the figures presented at baseline and the end of Phase 2.

Further comparison across MITA and control schools suggests that changes were substantially more marked in MITA schools compared to control schools and that changes in MITA schools generally were in line with the MITA ToC compared to control schools where they were not. For example, in treatment schools, both TAs and teachers reported marked increases in scheduled time to meet each week (increase from 1.5% to 41.9% and 11.3% to 36.1% respectively between baseline and endline). In fact, by the end of Phase 2, 41.9% of TAs and 36.1% of teachers felt they had scheduled time to meet each week—markedly higher than their counterparts in control schools (18.9% of TAs and 16.4% of teachers).

A comparison of TA and teacher reports of opportunities to communicate outside of lessons suggests that MITA schools made more gains in making opportunities available for TAs and teachers to communicate outside lessons by the end of Phase 2 compared to control schools. This was particularly noted in TA responses to 'there is no opportunity or time to communicate with teachers outside of lessons', where TAs in MITA schools reported a 82.2% reduction in their agreement to this statement between baseline and the end of Phase 2 and TAs in control schools reported a 56.3% rise. At the end of Phase 2, TAs in control schools were slightly more likely to agree to the statement (4.1%) compared to TAs in MITA schools (2.4%). Teachers in both groups were more likely to report they had no opportunity to communicate with TAs than TAs themselves. There was some variation, with teachers in control schools slightly more likely to agree to the statement at endline (5%) compared to TAs in MITA schools (3.1%). It is also interesting to note that while both groups increased their reporting, control schools showed higher increases compared to treatment (56.3% and 29.2%, respectively, starting from a low base).

In terms of changes to brief and ad hoc communications, in MITA schools there was a marked decrease in reporting of this behaviour from both TAs and teachers (reduction of 61.0% and 45.1% between baseline and the end of Phase 2, respectively). In contrast, during the same period control schools reported a slight increase in their reports of brief and ad hoc communications by 9.3% and 19.0%, respectively. By the end of Phase 2, 20.0% of TAs and 26.8% of teachers in MITA schools felt communication was brief and ad hoc—markedly lower than their counterparts in control schools (34.2% of TAs and 50.2% of teachers). This comparison suggests that treatment schools considerably changed their behaviour in line with MITA's ToC while control schools did not.

To summarise: overall, these findings indicate that teachers and TAs in control schools did not make substantial changes to their behaviour over the course of the evaluation. Comparison of changes over time further suggest that MITA schools tended to change behaviour in line with MITA's ToC while control schools did not. While TAs in MITA schools did report high levels of behaviour in line with MITA principles compared to control schools, by the end of Phase 2 reported levels were much higher for MITA schools than control schools. This supports the argument that MITA had a transformative effect on TA-teacher communications in treatment schools, and that access to MITA resources in control schools did not translate into changes in practice in accordance with MITA's ToC.

Quality of TA-pupil interaction

There were 40 useable audio recordings in total (18 from the start of Phase 1, six from the end of Phase 1, and 16 from the end of Phase 2—see Table 13.

Table 13). An analysis of these recordings (Table 41) shows that, in general, control schools were similar to MITA schools at baseline. TAs in control schools were more likely to use clueing behaviours at baseline compared to TAs in MITA schools, whereas TAs in MITA schools were more likely to use correcting behaviours at baseline compared to TAs in control schools. This could suggest that there was an imbalance in the way TAs interacted with pupils. However, as the audio recordings are from a small number of schools (at baseline, audio recordings were available from three intervention and three control schools and at endline, three intervention and one control school), the extent to which this can be taken as representative is limited.

Table 41: TA-pupil interactions—coded behaviour from audio recordings as a % of total coded utterances

		Baseline	Endline
Prompting total	Control	22.8%	27.5%
	MITA	21.8%	48.4%
Clueing	Control	39.0%	47.5%
	MITA	25.5%	45.2%
Modelling	Control	0.0%	2.5%
	MITA	1.8%	2.4%
Correcting	Control	38.2%	22.5%
	MITA	50.9%	4.0%

The principles of MITA are that prompting should be used as a first response, followed by clueing, then modelling, with correcting ideally not being used (Bosanquet et al., 2015). Looking at behaviour at the end of Phase 2 in the one control school for which we have data, clueing was the most frequently displayed behaviour (47.5%), followed by prompting (27.5%) and correcting (22.5%), with modelling used very infrequently (2.5%). The use of correcting in almost a quarter of coded behaviour shows an overuse which is not in line with MITA principles. In contrast, TAs in MITA schools followed the expected behaviour of using prompting (48.4%) and clueing (45.2%) with much fewer instances of correcting (4.0%) and modelling (2.4%). Looking at the change from baseline to endline, it is clear that TAs in treatment schools made marked changes to their behaviour and that these were in line with MITA principles with particularly marked increases for prompting behaviours (121.8%) and reductions in correcting behaviours (-92.1%). TAs in control schools did change individual category behaviours in line with MITA principles, but not to the same extent, with increases in prompting of 20.6% and decreases in correcting of 41.2%.
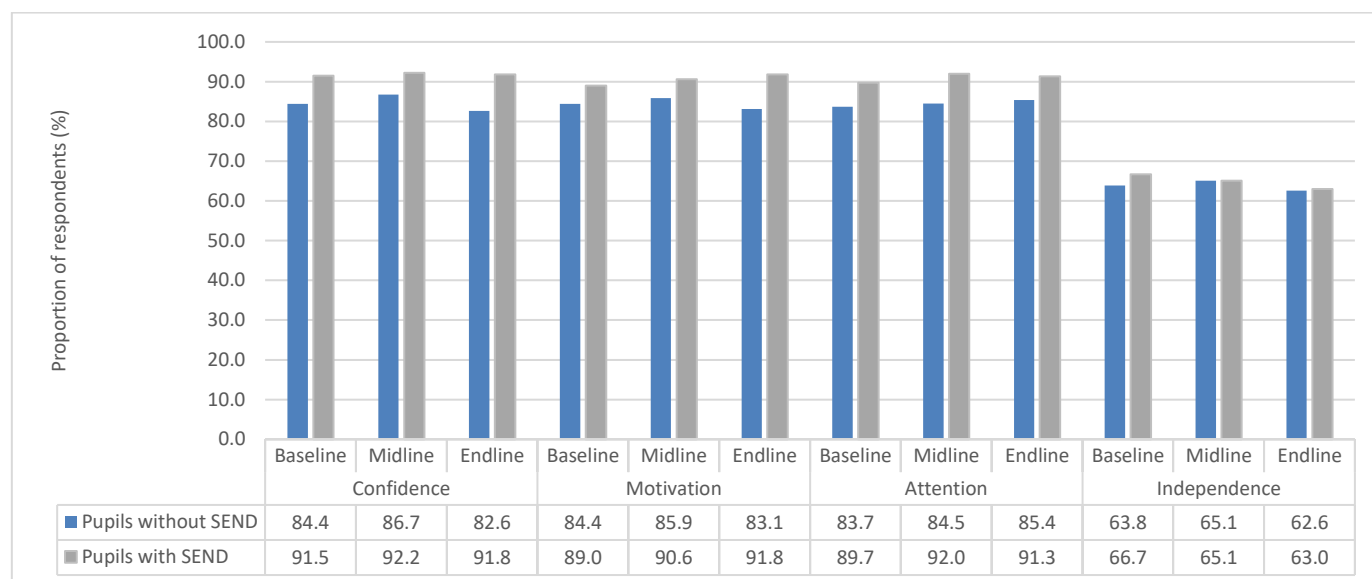
The fact that changes in individual categories for TAs in the control school were in line with MITA principles could suggest that TAs there were actively applying MITA principles to their TA practice. This could be possible, given how many control schools reported in the survey as having access to MITA resources. However, there is a limit to the extent to which the findings can be extrapolated more widely due to the fact that data on end of Phase 2 behaviour in control was based on recordings from one school only. It should be noted that the pattern of interactions in control schools does not follow the overarching MITA principle of 'least help first'. This would be shown by prompting forming the largest proportion of coded utterances (as in the MITA schools)

TA effectiveness and impact

The majority of teachers and TAs in control schools reported that they were confident or very confident in the ability of the TAs to carry out their role in the classroom effectively. As can be seen in Figure 20, teachers' responses were remarkably consistent across the timepoints (83.6%, 235 of 281 at baseline; 83.7%, 302 of 361 at the end of Phase 1; 83.6%, 183 of 219 at the end of Phase 2). For TAs, the proportion increased noticeably between baseline (85.1%, 302 of 355) and the end of Phase 1 (89.3%, 419 of 469), which was maintained at the end of Phase 2 (89.2%, 198 of 222).

Teachers in control schools were also asked to comment on the perceived impact of TAs on pupils without and with SEND. Figure 20 illustrates that, on the whole, teachers generally perceived TAs' impact on pupils positively. This was particularly true for pupils with SEND across confidence, motivation, and attention, and for pupils without SEND in the area of attention. The view on the impact of TAs on pupil independence in control schools was supported by other IPE data sources, with classroom observations suggesting that the time lower-attaining and SEND pupils spent working independently (see Figure 12 and Figure 13) did not change much in control schools.

Figure 20: Control teachers perceived views on the impact of TAs on aspects of the development of pupils without and with SEND

	Confidence			Motivation			Attention			Independence		
	Baseline	Midline	Endline	Baseline	Midline	Endline	Baseline	Midline	Endline	Baseline	Midline	Endline
Pupils without SEND	84.4	86.7	82.6	84.4	85.9	83.1	83.7	84.5	85.4	63.8	65.1	62.6
Pupils with SEND	91.5	92.2	91.8	89.0	90.6	91.8	89.7	92.0	91.3	66.7	65.1	63.0

Note: Control teacher baseline survey, n = 282; control teacher midline survey, n = 361; control teacher endline survey, n = 219. Question: 'In general, when a TA is in the classroom, how would you describe their impact on the following aspects of pupil development? FOR PUPILS WITHOUT/WITH SEND.' Data table presents the proportion of teachers that reported significant positive or mostly positive in response to the question at both time points. The data table below the graph shows the proportion of respondents who responded in this way to each of these questions across the three timepoints.

A comparison between MITA and control schools suggests that while fairly similar at baseline, teachers in MITA schools were more likely to report TA behaviour at the end of Phase 2 as being 'significantly' or 'mostly positive' on a range of outcomes for pupils with and without SEND (see Table 42).

Notably, teachers in MITA schools were more likely to report that TAs had 'significantly' or 'mostly positive' impact on the independence of pupils with and without SEND at the end of Phase 2 (79.7% and 74.6%, respectively) compared to teacher reports of TA impact in control schools (62.6% and 63.0%, respectively). Impact on pupils without SEND was particularly notable for TAs in MITA schools with confidence, motivation, and attention all showing increases between baseline and the end of Phase 2 (4.4%, 2.7%, and 9.3% respectively). This is in sharp contrast to TAs in control schools where teacher views of TA impact on confidence and motivation being 'significantly' or 'mostly positive' fell during the same period (2.1% and 1.5% respectively). Teachers reported a slight increase of 2.0% in TA impact on attention as being 'significantly' or 'mostly positive', but this was smaller than the increase of 9.3% reported by MITA schools.

Table 42: Teacher report of TA impact on pupils as being 'significantly' or 'mostly positive'—MITA and control schools

	MITA schools		Control schools	
	Baseline	End of phase 2	Baseline	End of phase 2
Pupils without SEND				
Confidence	84.6%	88.3%	84.4%	82.6%
Motivation	84.6%	86.9%	84.4%	83.1%
Attention	84.0%	91.8%	83.7%	85.4%
Independence	60.8%	79.7%	63.8%	62.6%
Pupils with SEND				
Confidence	89.1%	90.4%	91.5%	91.8%
Motivation	87.7%	90.4%	89.0%	91.8%
Attention	88.7%	90.7%	89.7%	91.3%
Independence	60.4%	74.6%	66.7%	63.0%

Teacher reports of TA impact on pupils with SEND was less marked for confidence, motivation, and attention across both groups of schools, with differences at the end of Phase 2 being relatively similar. However, it should be noted that teacher reports across MITA and control schools, and across all time points, remained relatively high (60.4% to 91.8% of teachers felt that TAs had 'significantly' or 'mostly positive' impact).

Overall, comparing MITA schools to control schools suggests that teachers in MITA schools felt that TAs had 'significantly' or 'mostly positive' impact on the attention of pupils with and without SEND, and the confidence, motivations, and attention of pupils without SEND and that this was markedly different to control schools. This is in line with the MITA ToC given that TAs are increasingly working with pupils without SEND. Therefore, you would expect there to be an increased effect on pupils without SEND. The fact that impact on independence is also high suggests that TAs are increasingly valuing the importance of pupils working independently and supporting this through appropriate teaching and learning approaches.

Cost

Using data from the intervention year and follow-up IPE surveys with headteachers and other SLT members as well as information from the MITA programme team, the cost evaluation shows that:

1. The total estimated cumulative cost of delivering MITA over a three-year period is £3,690 per school. This equates to a cost per pupil of £3.27 per pupil per year over a three-year period. This relates primarily to the cost of the MITA training, which is estimated at £1,895 per school and conducting the expert consultancy review.

2. Analysis of the IPE surveys has highlighted that schools generally did not hire new staff or extend the contractual working hours of existing staff to support the introduction of MITA.

3. Some schools indicated that they provided cover for staff to implement MITA. However, schools that did provide such cover tended to provide more hours of cover for TAs than teachers.

This section discusses average costs of participation in, and implementation of, MITA. We estimate average marginal costs per pupil per year for intervention schools. The collection of cost data was achieved through the survey of headteachers, other SLT members, teachers and, TAs at intervention year and endline. As reported in the protocol and methods section of this report, the analysis will focus on the following cost categories:

- the cost of the three components of the intervention—MITA SLT course, MITA course, and external consultants—and related costs (for example, purchasing books related to MITA);

- prerequisite costs—any costs linked to the training sessions such as purchasing additional resources for and venue hire for MITA SLT sessions;

- the direct costs of staff time—this will identify separately the cost of new hires, supply staff, and any extensions made to the contract hours of teachers and TAs; and

- any additional (unpaid) staff time used for completing action plans, attending meetings, and so forth reported by teachers and TAs.

Given that MITA is a whole-school intervention, it is important to establish here an estimate of the number of pupils per school for the cost evaluation. Here we use data from the 128 schools involved in the trial. Of these, 108 provided a breakdown of the number of pupils (20 schools did not provide this data). On average, there were 376 pupils recorded in each of these schools (ranging from 56 to 910).

Using these estimates, Table 43 details the cumulative costs of implementing MITA over three years using the costs incurred by all schools relating to SLT sessions, MITA training, and the expert consultant review.

Table 44 provides a breakdown of all of the costs associated with the above three components plus additional costs not necessarily incurred by all schools (cover and travel).

Table 43: Cumulative costs of MITA over three years

	Year 1	Year 2 (cumulative)	Year 3 (cumulative)
MITA	£3,690	£3,690	£3,690

The total estimated cumulative cost of delivering MITA over a three-year period is £3,690 per school (Table 42). This equates to a cost per pupil of £3.27 per pupil per year over a three-year period (Table 43). As can be seen in Table 44, most of this is the cost of the MITA training, which is estimated to cost £1,895 per school (£1.68 per pupil per year) and conducting the expert consultancy review, which is estimated to cost £1,500 (£1.33 per pupil per year). It is important to note here that the cost estimate for the expert consultancy review is based on the review taking three days, as per the information supplied by the MITA team. Should the review take longer than this, additional costs will

be incurred by the school, which would change the estimate provided. In this trial, four days were allocated for each expert review, which would take the total cost up to £2,000 (£500 x 4).[28]

Table 44: Cost of delivering MITA—costs incurred by all schools and additional costs incurred by some schools

Item	Type of cost	Cost	Total cost over 3 years	Total cost per pupil per year over 3 years
Costs incurred by all schools				
SLT course	Start-up cost per two SLT members	£295	£295	(£295/376/3) ≈ £0.26
MITA training (excluding trainers' expenses)	Start-up cost per school	£1,895	£1,895	(£1,895/376/3) ≈ £1.68
Expert consultant review (excluding consultants' expenses)	Start-up cost per school	£1,500[29]	£1,500	(£1,500/376/3) ≈ £1.33
Total costs incurred by all schools			£3,690	Est. £3.27
Additional costs (not incurred by all schools)				
MITA guidance textbook	Start-up costs per school	£45.98 (£22.99 x 2)	£45.98	(£45.98/376/3) ≈ £0.04
Additional staff	Direct costs of staff time	£19,889 (range £1,000–£56,000)	£59,667	(£59,667/376/3) ≈ £52.88
Cover	Direct costs of staff time	£1,930 (range £150–£5,000)	£1,930	(£1,930/376/3) ≈ £1.71
Extending contract hours	Direct costs of staff time	£5,729 (range £400–£18,000)	£17,188	(£17,188/376/3) ≈ £15.24
Costs associated with travel to training	Start-up costs per school	£166 (range £12–£850)	£166	(£166/376/3) ≈ £0.15
Hiring venue for training	Start-up costs per school	£456	£456	(£456/376/3) ≈ £0.40

---

[28] It should be noted that these costs are no longer current. MITA is now delivered independently of UCL-IOE and the core activities are costed differently. Up to date costs on the different components can be found on the following pages. MITA SLT course: http://maximisingtas.co.uk/courses/mita-direct.php; MPTA training for TAs and teachers: http://maximisingtas.co.uk/courses/maximising-the-practice-of-teaching-assistants.php; consultancy visits: http://maximisingtas.co.uk/courses/commission-a-ta-deployment-review.php

[29] A typical review takes three days. Consultants were required to follow the DfE guidance on day rates for consultancy of £500 per day. Note that reviews scheduled to take more than three days will incur additional costs. For more information, see https://www.ucl.ac.uk/ioe/departments-and-centres/centres/centre-inclusive-education/maximising-impact-teaching-assistants-mita : http://maximisingtas.co.uk/courses/commission-a-ta-deployment-review.php

Costs of additional resources (tablet for TA, printing booklet)	Start-up costs per school	£717 (range £0.66–£2,000)	£717	(£717/376/3) ≈ £0.64
Total costs incurred by some schools (average)			£80,170	Est. £71.07

A minority of schools reported hiring additional staff to deliver MITA or paying for cover so that teachers and TAs could attend MITA training (see Costs of staff time below). As there was a significant range in values, we took the average of all reported responses for the purposes of providing cost estimates. Some schools also reported incurring costs as a result of extending contract hours (see Costs of staff time below), these have also been included in Table 44.

Finally, additional costs not incurred by all schools were calculated using the average reported on the survey. If you were to account for the average incurred by some schools, the costs for delivering MITA would rise to £71.07. Even with this increased cost estimate, the cost rating for MITA would still qualify as very low, as it remains under the £80 per pupil threshold set by the EEF.

Costs of staff time

This evaluation was carried out prior to the EEF's guidance on cost evaluation (EEF, 2019) and, as such, staff time was not explicitly included in the original cost per pupil per year estimate. However, because some schools indicated that they provided cover for staff to implement MITA, we have undertaken some additional analysis to understand how these costs impact on the overall delivery costs. It should be noted that the findings on staff time and additional costs relied on self-report, and school staff who responded may not be representative of all staff in MITA schools.

Analysis of the surveys has highlighted that schools generally did not hire new staff to support the introduction of MITA. At intervention year, the majority of headteachers (84.4%, 38 of 45) reported that they had not hired new staff during the 2017/2018 academic year to support MITA. Of the seven headteachers that did report hiring new staff, estimates of the total cost of hiring ranged from £5,000 to £56,000.[30] Similarly, at follow-up none of the 31 surveyed headteachers reported hiring new staff to support MITA in the 2018/2019 academic year, while the majority of other SLT members (93.7%, 74 of 79) reported the same. Of the five SLT members that reported that their school had hired new staff in the survey, three did not provide an estimate of the costs associated with this, with the two that did estimating these costs at £1,000 and £40,000.

Headteachers and other SLT members were also asked whether they extended the contractual working hours of existing staff to support the introduction of MITA. At intervention year, the majority (77.8%, 35 of 45) reported that they had not done so in the 2017/2018 academic year. For the ten headteachers that reported that they had done so at this timepoint, two reported that this had come at no additional cost. In one case, this was due to one staff member leaving, while in the other case these costs were balanced within a wider restructuring of the staff. For those that reported that the extension to working hours had incurred a cost to the school, responses ranged between £400 and £12,000.[31]

At follow-up, an even stronger majority of headteachers (90.3%, 28 of 31) indicated that they had not extended the contractual working hours of existing staff in the 2018/2019 academic year. Of the three that did, one did not estimate the costs while the other two indicated that the costs of this were £1,000 and £2,500. A similar trend emerged in responses among other SLT members with the majority (81.2%, 63 of 77) reporting that they did not extend working hours for existing staff in 2018/2019 to support MITA. Of the 14 that did, seven did not provide a response or were not sure about the costs involved while those who did estimate this provided responses ranging between £1,000 and £18,000.[32]

Headteachers were also asked at intervention year whether they had arranged cover for lessons missed by TAs and teachers who were attending MITA training. Views here were somewhat mixed, with a slight majority (57.8%, 26 of

---

[30] All survey responses here include: £5,000 (x2); £12,000; £15,000; £20,000; £25,000; £56,000.
[31] All survey responses here include: £400; £1,000; £4,000; £5,000 (x2); £9,500; £10,000; £12,000.
[32] Survey responses here included: £1,000; £2,000; £3,000; £5000; £8,000; £10,000; £18,000.

45) indicating that they had done so. For those headteachers that had arranged cover, they were asked to estimate the number of hours for which they had provided cover for TAs and teachers for this purpose. As shown in Table 45, responses to this question were wide ranging. The majority (57.9%, 11 of 19) indicated that they had not arranged any extra hours of cover for teachers, while just over one-fifth (21.1%, 4 of 19) reported the same for TAs. The main message from these responses is that schools that did provide cover for staff to implement MITA tended to provide more hours of cover for TAs than teachers.

Table 45: Estimated number of hours of lesson cover provided for TAs and teachers attending MPTA training

	Teachers	TAs
Average	14.9	33.6
Median	2	8
Most common response	0 (11 of 19)	0 (4 of 19)

Note: Headteacher midline survey, n = 45. The table reports on the 19 headteachers that indicated that they had arranged lessons cover for TAs and teachers attending MPTA training.

Finally, at follow-up, headteachers and other SLT members were asked about whether they had arranged lesson cover for teachers or other staff to help with the weekly running of MITA in the 2018/2019 academic year. The majority of headteachers (93.6%, 29 of 31) and other SLT members (84.4%, 65 of 77) reported that they had not done so. For the two headteachers that did report arranging cover, their estimates of the cost of this were quite different (£500 and £5,000). Among the 12 other SLT members who indicated that their school had arranged lesson cover, nine reported that they were not sure of the total cost of hiring supply teachers or other staff, with the three estimates provided again ranging widely (£150 per half day, £2,000 to £3,000, and £15,000).

In line with the updated EEF costs guidance (EEF 2019), costs for cover to allow teachers and TAs to attend training were added to the core costs. A substantial proportion of the cost estimate comprises the cost of covering staff time to participate in MITA. On average, the cost was calculated at £4,630 (or £4.10 per pupil per year), although there was a high degree of variability in the estimates provided by schools (ranging from £150 to £15,000). It is also important to note that this estimate is based on data self-reported by staff in schools that responded to the survey and should therefore be interpreted with some caution as the survey sample may not be representative of all staff in MITA schools.

When this is done, the cumulative cost of delivering MITA becomes £8,320 per school per year over three years, applying the same calculation used to establish core costs. This equals a cost of £7.37 per pupil per year over the course of three years. This is still well below the cost threshold established by the EEF (see Appendix A).

Additional costs

At the end of intervention year, headteachers were asked about whether they had incurred any additional costs related to MITA training. Of the 45 headteachers that responded, 18 indicated that they had, the most common being travel and subsistence for headteachers and other SLT members to attend the MITA SLT sessions (mentioned by 15 out of the 18 headteachers): estimates ranged widely, from £12 to £850.[33] Three headteachers mentioned that travel and subsistence for attendance at MPTA training had resulted in additional costs (£20; £25; £300), while three also mentioned that their school had incurred additional costs in purchasing other resources to support training sessions, although these were generally lower (£25; £30; £60). Finally, two headteachers reported that they had spent £456 on hiring a venue for MITA training.

It should be noted that each school attending the MITA training was provided with a copy of both MITA handbooks to support implementation. For this reason, the cost of purchasing these books is not considered as a start-up or

---

[33] All survey responses here: £12; £40 (x2); £50 (x3); £80; £100 (x3); £200; £300; £303; £360; £850.

recurring cost in this cost evaluation. However, it is important to note that in some schools (particularly larger schools with a higher number of TAs), it may be necessary to purchase additional copies to provide an adequate number for TAs. For the purposes of our analysis, we assume that this may be an additional cost of two extra textbooks for schools. At the time of writing, these guidance textbooks are available online in a new paperback version for a minimum price of £22.99.

Headteachers were also asked at intervention year to indicate whether they had purchased other additional resources or materials to support the introduction of MITA more widely in the 2017/2018 academic year. Only a minority indicated that they had purchased any other resources or materials (12.5%, 5 of 40). When asked to specify the resources purchased and provide an approximate cost associated with them, one headteacher did not provide any response to this, while another indicated that they had provided the 'Professional Standards for Teaching Assistants' booklet for each TA in their school. While this is publicly available from MITAs website,[34] this would have incurred a printing cost depending on the number of TAs in the school. Assuming that it costs 6p per page of colour printing, each printed booklet would cost the school 66p as the booklet is 11 pages in length (this would be 33p per booklet for black and white, assuming that it costs 3p per page). Two other headteachers reported that they had invested in providing resources for TAs: one stated that they had spent approximately £150 on providing TA packs, another that they had spent £25 on the MITA handbook described above. Finally, one headteacher reported that they had spent £2,000 to supply tablets for TAs.

---

[34] http://maximisingtas.co.uk/assets/content/ta-standards-final-june2016-1.pdf

Conclusion

Table 46: Key conclusions

Key conclusions
1. There is no evidence that MITA had an impact on reading outcomes for pupils in Year 3 and Year 6. This result has a high security rating.
2. MITA had a moderate, positive impact on pupil engagement. Pupils in MITA schools were more engaged than pupils in control schools, however the analysis used a smaller number of schools, with several schools unable to complete surveys, which limits the security of these findings.
3. There is evidence that staff in MITA schools changed their behaviour in line with MITA principles based on a measure of change in practice when compared to control schools. Although evidence is limited by the small sample and the use of a new measure of change in practice that has not been tested more widely, behaviour change is supported by evidence from the teacher and TA surveys, interviews, and classroom observations.
4. During the trial, control schools made substantial efforts to improve TA deployment in line with many of MITA's key recommendations. However, an analysis of behaviour from teacher and TA surveys between the start and end of the trial suggest that this did not translate into changes in behaviour.
5. Interviews in case study schools indicate that senior leadership and staff buy-in are fundamental for effective implementation of MITA. Staff turn-over at the senior leadership and classroom level are potential barriers to embedding MITA principles in the longer term.

Impact evaluation and IPE

Evidence to support the Theory of Change

This evaluation aimed to test the effectiveness of MITA in a large number of schools from four different regions in England. The school-level randomisation associated with an intention-to-treat approach provides a robust estimate of offering MITA in schools. This was complemented by a relatively in-depth IPE that collected data from a number of sources using a variety of methods.

Findings from the impact evaluation suggest that MITA as implemented in this trial does not lead to improvements in reading or maths attainment for pupils when compared to pupils in control schools. Furthermore, the evaluation did not find any differential benefits for FSM or SEND pupils. These findings are relatively robust across all analyses given the large sample size (see MDES calculations) and moderately low attrition rates (see Attrition).

Interestingly, analysis of pupil engagement and the change in practice measure suggest that there was a marked difference between MITA schools and control schools. Pupil engagement across Year 3 and Year 6 improved as is shown in the decrease in inattention (effect size of -0.20 and -0.28, respectively), while the change in practice measure noted a change equal to an effect size of 0.36, indicating MITA schools were changing practice in line with MITA principles compared to control schools. These findings suggest that MITA did have an effect on immediate outputs (that is, changes in TA behaviour) and at least one of the outcomes listed in the ToC. However, it should be noted that both the pupil engagement measure and change in practice measure were marked by various issues—low initial sample size, high attrition, and a lack of established validity—which limits our confidence in the strength of these findings.

Generally, findings suggest that staff CPD sessions were delivered well, were well received, and were key factors in supporting school staff to implement changes at their school in line with MITA guidance. Similarly, schools were overwhelmingly positive about the support offered by the external consultants during their school visits. Compliance, as measured by the pre-established metric, was high. This suggests that schools implemented MITA as intended and with high fidelity.

Looking at behaviour in MITA schools, there was some evidence to support a change in practice. Findings from the IPE suggest that MITA facilitated a shift in how teachers and TAs interact, with a reduction in brief, ad hoc communications and an increase in the proportion of teachers and TAs that indicated that they had scheduled time each week for communication. Teachers also strongly felt that MITA improved TA's ability to know what feedback teachers required, though this was less strongly felt by TAs. TAs spent progressively less time with lower-attaining pupils, however evidence on TAs spending less time with SEND pupils is more mixed. This is somewhat in line with the MITA ToC, which suggests TAs should be working less with these groups. Conversely, there is little evidence to

suggest that teachers spent more time with lower-attaining and SEND pupils over the course of the trail. This is not in line with the 'deployment' aspect in the MITA ToC, which suggests that teachers should be increasing their time working with these groups. However, it could support the idea that pupils are self-scaffolding (working independently) in the 'TA-pupil interaction' section of the ToC. Without detailed lesson observations it is difficult to suggest what is happening in practice.

Overall, it appears that the majority of control schools were actively seeking to improve their TA provision and that in many cases there was overlap with many of the same resources used in the delivery of MITA. However, evidence on TA deployment, TA preparedness, and TA-teacher communication suggests that teachers and TAs in control schools did not make substantial changes to their behaviour over the course of the evaluation. Comparison of changes over time further suggest that MITA schools tended to change behaviour in line with MITA's ToC, while control schools did not. This suggests that MITA schools were actively changing their practice in line with MITA guidance..

Generally, MITA schools felt that MITA had a positive impact on a wide range of behaviours across the school, including TA confidence and effective scaffolding strategies and pupil independence. The majority of teachers in MITA schools reported that TAs had a positive impact on various aspects of participating pupils' development (confidence, motivation, and attendance). In comparison, teachers in control schools were less likely to rate TAs as having 'significantly' or 'mostly positively' impacted on the attention of pupils with and without SEND, and on the confidence, motivations, and attention of pupils without SEND compared to teacher reports of TA impact in MITA schools. This further suggests that while control schools may have been actively engaged with MITA resources, that this did not translate into a change in practice in line with the MITA ToC.

Ultimately, this suggests that when MITA schools implemented MITA as intended, they saw changes in behaviour at the teacher and TA level and impact at the pupil level (both perceived and as measured by a validated scale), particularly compared to controls. However, this did not translate into impact on the longer-term outcomes of attainment.

Interpretation

Several reasons may explain why change was not detected on attainment.

Not enough time for there to be an impact on attainment outcomes

While the evaluation was conducted over a relatively long period of time—from randomisation in July 2017 to outcome testing at the end of Phase 2 in July 2019—this may be relatively too short a period for changes at the TA and teacher level to have an impact on attainment. This is supported by the ToC, where attainment is seen as a long-term outcome. With Phase 1 being essentially a training year, where schools learn the principles of MITA and begin to prepare for change in Phase 2, this leaves a relatively short period of time in Phase 2 to implement change. From the change in practice measure and survey data it is clear that MITA schools generally changed their behaviour in line with MITA, so it can be taken that the first step in the ToC was achieved (that is, activities leading to outputs that lead to outcomes). There is also evidence from surveys and in the engagement measure that there was impact on pupils.

Looking at the ToC (see Figure 1) it is clear that attainment outcomes are seen as longer-term outcomes, which are contingent on first achieving the precursory outcomes of deployment, school/classroom practices, and pupil engagement. It is therefore plausible to conclude that, while there was enough time in Phase 2 to implement change and see impact on short-term outcomes, there was not enough time to see an impact on attainment outcomes. This hypothesis can be tested in due course by conducting a longitudinal analysis using data from the National Pupil Database.

Sustained input is needed for there to be an impact on attainment outcomes

Many of the analyses looking at the changes in behaviour suggest that the magnitude of change was more pronounced between baseline and the end of Phase 1 compared to changes between the end of Phase 1 and the end of Phase 2. Given the fact that MITA is delivered in Phase 1, this suggests that change is more pronounced when MITA is actively involved. It may be that interventions focused on whole-school change (like MITA) require sustained input and support over several years for there to be a change in behaviours that are sufficient to impact on attainment outcomes.

To a certain extent, the need for ongoing input is supported by evidence from the IPE, where staff turnover was found to be an issue in three out of five case study schools, with loss of staff at all levels (both classroom and SLT) being noted as a barrier to implementation. This finding may suggest the need for 'booster' training that might help maintain

enthusiasm and remind school staff of some of the MITA practices or regular sharing of effective teaching practices, particularly in light of high staff turnover of key SLT members. This would be in line with wider findings on whole-school approaches, suggesting that there are number of issues that need to be considered when implementing whole-school programmes, including the need to acknowledge competing demands in schools and the role of ongoing professional development (Leyden et al., 2011; Yeng et al., 2016).

Impact may be more pronounced for non-attainment outcomes

A final interpretation could be that MITA has a more pronounced impact on non-attainment outcomes—including attention, independence, confidence, motivation, and attendance—compared to attainment outcomes. This is broadly in line with the MITA Theory of Change, where activities are focused on improving non-attainment outcomes. It could be that these improvements in non-attainment outcomes do not translate into improvements in academic outcomes.

Some people may consider this report as evidence for TAs not supporting improvements in attainment. However, we know that TAs have the potential to impact on attainment outcomes. A wide body of research suggests that TA impact on pupil attainment is strongest when TAs are used to deliver interventions in one to one or small group settings. This research shows a consistent and moderate impact on attainment of approximately three to four additional months' progress over an academic year (Higgins et al., 2013).

Limitations and lessons learned

From a research design perspective, some aspects that characterised the initial phases of the project have created challenges for the analysis.

Missing data

The most significant issue that limits the extent to which we can draw firm conclusions is the magnitude of missing data from numerous outcome measures. This is partly due to issues in collecting secondary data, such as that relating to changes in practice and pupil changes in attitude. Attrition was unequal across measures, with lower attrition rates on attainment data compared to other measures (that is, pupil engagement and change in practice).

Randomising before baseline data collection also created some unforeseen challenges. There were a small number of schools that were randomised but could not be included in the analysis due to data not being collected at baseline. As we have set out in the report, randomising before baseline data collection should be avoided overall. The better strategy would have been to delay randomisation and ensure that baseline data was collected before schools were informed of allocation, as this may have resulted in some bias in attrition.

Outcome measures

We recognise that several data limitations characterise the analysis. Based on this experience, and following EEF guidelines, our recommendation is that the primary outcome should not be constructed by pooling different measures with the aim to increase power. Our concern about the pooling was lessened because it was agreed to combine only outcomes from one subject (that is, English) rather than combining outcomes in maths and English as initially planned. While the trial was powered enough to provide a precise estimate for the impact of MITA on the pooled outcome, it was not powered for other measures, which were used as secondary outcomes (KS2 maths) or were used to run additional analysis (Key Stage 2 English; ELM Reading). It would have been ideal for the trial to be powered for the use of these non-pooled measures. That would have allowed us to capture the potential effect of the intervention with more certainty. We otherwise believe the outcome data for ELM Reading to be of good quality for the purpose at hand: the distribution suggests that the measure was able to differentiate pupil ability sufficiently well. Data collected as part of the evaluation of school practices was incomplete.

The change in practice measure also was subject to several limitations, including considerable missing data, due to the fact that the measure is constructed at school level and the measure was developed specifically for this trial. Due to time constraints, it was also not possible to pilot or validate the measure. As such, it is unclear how sensitive the measure is at capturing change. We acknowledge that other methods have been used successfully to measure change in practice in past evaluations, particularly the use of audio recordings of pupil talk and extensive observations in the DISS evaluation. However, the scale of the evaluation and the need to collect data from treatment and control limited the extent to which these methods could be used in this evaluation.

Additional data limitations

To a certain extent, some measures were limited by the number of responses collected. For the change in practice measure, for example, the non-complete response to the IPE surveys mean that the IPE findings are built on evidence provided only by those schools and staff that engaged in the surveys in addition to the case studies and observations, also part of the IPE. There was also a relatively small number of audio recordings and observations, which otherwise would have supported a more robust triangulation of survey data findings. Finally, the fact that a reduced number of schools were selected for the pupil engagement measure left this measure sensitive to attrition. Taken together, this suggests that more could be done to boost the amount of data collected to inform some of the supporting outcomes.

Future research and publications

- Further to the findings above, it would be relevant to explore longer-term outcomes for attainment in order to understand the long-term impact of MITA.
- Based on the findings above, developing and testing an approach that looks to work with schools for longer periods of time seems advisable. It could be worth considering how MITA could best support schools to onboard new staff or deliver top-up training considering the potential for high TA, teacher, and SLT turnover.
- Finally, in any future research we propose to increase the use of IPE data collection approaches, particularly audio recordings and observations, to better triangulate findings from other data sources (that is, surveys and impact evaluation).

References

Allison, P. D. (2012) 'Handling Missing Data by Maximum Likelihood', keynote presentation at the SAS Global Forum, April 23, 2012, Orlando, Florida: https://statisticalhorizons.com/unpublished-papers

Alborz, A., Pearson, D., Farrell, P. and Howes, A. (2009) 'The Impact of Adult Support Staff on Pupils and Mainstream Schools: A Systematic Review of Evidence', London: Department for Children, Schools, and Families.

Blatchford, P. (2012) *Social Life in School: Pupils' Experiences of Breaktime and Recess from 7 to 16*, Abingdon: Routledge.

Blatchford, P., Bassett, P., Brown, P. and Webster, R. (2009) 'The Effect of Support Staff on Pupil Engagement and Individual Attention', *British Educational Research Journal*, 35(5), pp. 661–686.

Blatchford, P., Bassett, P., Brown, P., Martin, C., Russell, A. and Webster, R. (2007) 'Deployment and Impact of Support Staff in Schools: Report on Findings from the Second National Questionnaire Survey of Schools, Support Staff and Teachers', Strand 1, Wave 2, 2006.

Blatchford, P., Russell, A. and Webster, R. (2012) *Reassessing the Impact of Teaching Assistants: How Research Challenges Practice and Policy*, Abingdon: Routledge.

Bosanquet, P., Radford, J. and Webster, R. (2015) *The Teaching Assistant's Guide to Effective Interaction: How to Maximise Your Practice*. Abingdon: Routledge.

Clotfelter, C. T., Hemelt, S. W. and Ladd, H. F. (2016) 'Teaching Assistants and Nonteaching Staff: Do They Improve Student Outcomes*?'* Working Paper 169, National Center for Analysis of Longitudinal Data in Education Research (CALDER).

Department for Education and Department of Health (2015) 'Special Educational Needs and Disability Code of Practice: 0 to 25 Years. Statutory Guidance for Organisations Which Work with and Support Children and Young People Who Have Special Educational Needs or Disabilities', January 2015: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/398815/SEND_Code_of_Practice_January_2015.pdf

DfE (2019) 'School Workforce in England: November 2018' (published June 2019): https://www.gov. uk/government/statistics/school-workforce-in-englandnovember-2018

Dong, N. and Maynard, R. (2013) 'PowerUp!: A Tool for Calculating Minimum Detectable Effect Sizes and Minimum Required Sample Sizes for Experimental and Quasi-Experimental Design Studies', *Journal of Research on Educational Effectiveness*, 6 (1), pp. 24–67.

EEF (2015) 'Policy on Analysis for EEF Evaluations', London: Education Endowment Foundation: https://educationendowmentfoundation.org.uk/projects-and-evaluation/evaluating-projects/evaluator-resources/setting-up-an-evaluation/

EEF (2016) 'A Marked Improvement? A Review of the Evidence of Written Marking', London: Education Endowment Foundation: https://educationendowmentfoundation.org.uk/public/files/Publications/EEF_Marking_Review_April_2016.pdf

EEF (2018) 'Statistical Analysis Guidance for EEF Evaluations', London: Education Endowment Foundation: https://educationendowmentfoundation.org.uk/public/files/Evaluation/Writing_a_Protocol_or_SAP/EEF_statistical_analysis_guidance_2018.pdf

EEF (2019) 'Cost Evaluation Guidance', London: Education Endowment Foundation: https://educationendowmentfoundation.org.uk/projects-and-evaluation/evaluating-projects/evaluator-resources/writing-a-protocol/

Giangreco, M. F. (2013) 'Teacher Assistant Supports in Inclusive Schools: Research, Practices and Alternatives', *Australasian Journal of Special Education*, 37 (2), pp. 93–106.

Hedges, L. V. and Hedberg, E. C. (2007) 'Intraclass Correlation Values for Planning Group-Randomized Trials in Education', *Educational Evaluation and Policy Analysis*, 29 (1), pp. 60–87.

Heß, S. (2017) 'Randomization Inference with Stata: A Guide and Software', *Stata Journal*, 17 (3): pp. 630–651.

Hewitt, C. and Togerson, D. (2006) 'Is Restricted Randomisation Necessary? *British Medical Journal Research Methods*, 332, pp. 1506–1508.

Higgins, J. P., Altman, D. G., Gøtzsche, P. C., Jüni, P., Moher, D., Oxman, A. D., Savović, J., Schulz, K. F., Weeks, L. and Sterne, J. A. (2011) 'The Cochrane Collaboration's Tool for Assessing Risk of Bias in Randomised Trials', *British Medical Journal*, 343, p. d5928.

Higgins, S., Katsipataki, M., Kokotsaki, D., Coleman, R., Major, L. E. and Coe, R. (2013) 'The Sutton Trust-Education Endowment Foundation Teaching and Learning Toolkit: Technical Appendices', London: Education Endowment Foundation: https://educationendowmentfoundation.org.uk/public/files/Toolkit/complete/EEF-Teaching-Learning-Toolkit-October-2018.pdf

Hutchison, D. and Styles, B. (2010) *A Guide to Running Randomised Controlled Trials for Educational Researchers*, Slough: NFER.

Hoffmann, T. C., Glasziou, P. P., Boutron, I., Milne, R., Perera, R., Moher, D., Altman, D. G., Barbour, V., Macdonald, H., Johnston, M. and Lamb, S. E. (2014) 'Better Reporting of Interventions: Template for Intervention Description and Replication (TIDieR) Checklist and Guide', *British Medical Journal*, 348.

Leyden, J., Stackhouse, J. and Szczerbinski, M. (2011) 'Implementing a Whole School Approach to Support Speech, Language and Communication: Perceptions of Key Staff', *Child Language Teaching and Therapy*, 27 (2), pp. 203–222.

Nicoletti, C. and Rabe, B. (2014) 'Spending It Wisely: How Can Schools Use Resources to Help Poorer Pupils?': https://www.iser.essex.ac.uk/files/news/2014/spending-it-wisely.pdf

Pearce, N., Cross, D., Monks, H., Waters, S. and Falconer, S. (2011) 'Current Evidence of Best Practice in Whole-School Bullying Intervention and Its Potential to Inform Cyberbullying Interventions', *Journal of Psychologists and Counsellors in Schools*, 21 (1), pp. 1–21.

Senn, S. (1994) 'Testing for Baseline Balance in Clinical Trials', *Statistics in Medicine*, 13, pp. 1715–1726.

Sharples, J., Blatchford, P. and Webster, R. (2016) 'Making Best Use of Teaching Assistants', London: Education Endowment Foundation: https://educationendowmentfoundation.org.uk/public/files/Publications/Teaching_Assistants/TA_Guidance_Report_MakingBestUseOfTeachingAssistants-Printable.pdf

Skinner, E. A., Kindermann, T. A. and Furrer, C. J. (2009) 'A Motivational Perspective on Engagement and Disaffection: Conceptualization and Assessment of Children's Behavioral and Emotional Participation in Academic Activities in the Classroom', *Educational and Psychological Measurement*, 69 (3), pp. 493–525.

Sutherland, A., van Belle J. and Ilie S. (2018) 'Statistical Analysis Plan', RAND Europe and the University of Cambridge, London: Education Endowment Foundation.

Sutherland, A. (2018) 'Trial Evaluation Protocol', RAND Europe, London: Education Endowment Foundation.

Snijders, T. A. and Bosker, R. J. (2011) *Multilevel Analysis: An introduction to Basic and Advanced Multilevel Modelling*, Sage.

Webster, R., Russell, A. and Blatchford, P. (2015) *Maximising the Impact of Teaching Assistants: Guidance for School Leaders and Teachers*, Abingdon: Routledge.

Webster, R. and Blatchford, P. (2013) 'The Educational Experiences of Pupils with a Statement for Special Educational Needs in Mainstream Primary Schools: Results from a Systematic Observation Study', *European Journal of Special Needs Education,* 28 (4), pp. 463–479.

Webster, R., Blatchford, P. and Russell, A. (2013) 'Challenging and Changing How Schools Use Teaching Assistants: Findings from the Effective Deployment of Teaching Assistants Project', *School Leadership and Management,* 33(1), pp. 78–96.

Appendix A: EEF cost rating

Figure 21: Cost rating

Cost rating	Description
£ £ £ £ £	*Very low:* less than £80 per pupil per year.
£ £ £ £ £	*Low:* up to about £200 per pupil per year.
£ £ £ £ £	*Moderate:* up to about £700 per pupil per year.
£ £ £ £ £	*High:* up to £1,200 per pupil per year.
£ £ £ £ £	*Very high:* over £1,200 per pupil per year.

Appendix B: Security classification of trial findings

Figure 22: MITA security classification

OUTCOME: *Reading attainment (pooled KS2 Reading and ELMs Reading Comprehension test)*

Rating	Criteria for rating			Initial score		Adjust		Final score
	Design	**MDES**	**Attrition**					
5 🔒	Randomised design	<= 0.2	0-10%					
4 🔒	Design for comparison that considers some type of selection on unobservable characteristics (e.g. RDD, Diff-in-Diffs, Matched Diff-in-Diffs)	0.21 - 0.29	11-20%	4				4
3 🔒	Design for comparison that considers selection on all relevant observable confounders (e.g. Matching or Regression Analysis with variables descriptive of the selection mechanism)	0.30 - 0.39	21-30%			Adjustment for threats to internal validity **0**		
2 🔒	Design for comparison that considers selection only on some relevant confounders	0.40 - 0.49	31-40%					
1 🔒	Design for comparison that does not consider selection on any relevant confounders	0.50 - 0.59	41-50%					
0 🔒	No comparator	>=0.6	>50%					

Threats to validity	Threat to internal validity?	Comments
Threat 1: Confounding	Moderate	Randomisation was performed by the evaluation team and replicable. Moderate imbalance of >0.05SD in favour of the intervention group was observed for two measures at baseline (KS1 Reading for Y4 pupils and raw baseline score (ELMs Reading Comprehension) for Y1 pupils), but controlled for in analysis.
Threat 2: Concurrent Interventions	Moderate	IPE identified that control schools actively sought ways to improve TA deployment – e.g. two-thirds of HTs (10 of 15) and other SLT members (25 of 36) reported that TAs in their school had received training from an external provider. This is likely to be different between groups. The direction of potential bias would likely be to reduce any effect of the intervention. However, the IPE also suggested that despite control schools' engagement with external programmes and resources, teachers' practice did not change in line with MITA. The activities and behaviour of control schools during the intervention period are well described/discussed.
Threat 3: Experimental effects	Low	There is evidence that control schools used publicly-available MITA resources, and to a greater extent, EEF guidance on TAs which centres around the same principles. However, as randomisation was conducted at the school level, this is unlikely to stem from direct contamination. To the extent that these resources improved the use of TAs during the trial period, this would reduce the likelihood of observing MITA benefits compared with business as usual.

Threat 4: Implementation fidelity	Low	Implementation logic is specified in the logic model and fidelity is well defined. 56/59 schools met the compliance threshold so adherence to the core components of the intervention was high across all intervention schools. There is some discrepancy between measures for some dimensions, so this is important to consider, but unlikely to have been a major threat to overall compliance.
Threat 5: Missing Data	Moderate	Missing data is moderate (13.5% from baseline to analysis and an estimated 17.9% overall), but does not differ between allocation groups. Missingness does not appear to be related to other variables in the analysis, except for a small association with prior attainment. Analysis findings that account for missing data (through FIML) were very similar to complete case analysis.
Threat 6: Measurement of Outcomes	Low	Valid and reliable measures used at pre- and post-test and data collected independently, blind to condition. Normal distributions observed (no ceiling/floor effects). While the original primary outcome specified in the SAP combined maths and English, the reasons for focusing on English only are clearly reported and align with EEF guidance.
Threat 7: Selective reporting	Low	Study is registered. No evidence of selective reporting in comparison with protocol or SAP; deviations are reported appropriately.

- **Initial padlock score:** 4 Padlocks – Cluster randomised controlled trial with MDES of 0.182 and overall attrition of 17.85%
- **Reason for adjustment for threats to validity**: No adjustment – Threats identified are moderate and operate in unknown or opposite directions.
- **Final padlock score:** initial score adjusted for threats to validity = 4 Padlocks

Appendix C: Recruitment documentation

Memorandum of Understanding

(MITA)

Memorandum of Understanding

For schools participating in the 'Maximising the Impact of Teaching Assistants' project

Introduction

This information is for schools wishing to take part in the 'Maximising the Impact of Teaching Assistants' (MITA) project over 2017/18 and 18/19. **This project assesses the effectiveness of a whole-school intervention to improve the deployment of teaching assistants (TAs) and their contribution to improved pupil outcomes.**

The intervention will be delivered by staff from UCL Institute of Education (IOE), University of East London (UEL) and London Leadership Strategy (LLS) (herein, "the delivery team"). The project evaluation is being undertaken by RAND

Europe[35] and staff from the Faculty of Education, University of Cambridge (herein, "the evaluation team"). The project is funded by the Education Endowment Foundation[36].

Schools that agree to participate in the project are asked to sign this Memorandum of Understanding (MoU) to ensure they understand what involvement in the project means, and the roles of the project partners are clear.

The project is a 'randomised controlled trial' (RCT)

In July 2017, eligible schools that have completed the pre-requisites (explained in the *Information sheet*) will be **randomly assigned to either a 'control' or 'intervention' group** (akin to a 'coin flip'). This means each school has a 50:50 chance of receiving the MITA intervention. It is the *comparison* between pupils in intervention and control schools that makes the project possible and worthwhile. As an incentive, schools assigned to the **control** group will: (i) be invited to attend free SEN training in summer 2018; (ii) be invited to bring Year 6 pupils to a special widening participation day at UCL in summer 2019; and (iii) receive a £500 upon completion of all evaluation tasks.

Eligibility criteria

To be eligible for inclusion in the MITA project, schools must meet <u>all</u> of the following criteria:

Eligibility criteria	Check (√) if condition met
No prior engagement in MITA and/or MPTA training sessions	
No prior action taken following the EEF TA guidance or MITA or MPTA handbooks	
Not in special measures **OR** facing imminent leadership changes	

If you are unsure if your school fulfils these criteria, please contact the delivery team: ioe.mita@ucl.ac.uk. If your school is eligible and wishes to participate, **the first step is to sign this MoU. Please be aware, we can only accept MoUs signed by the Headteacher and at least one other member of the Senior Leadership Team (SLT) or Chair of Governors.** Signed MoUs can be scanned and emailed to ioe.mita@ucl.ac.uk. Hard copies can be posted to [add postal address]. Please make a copy of the MoU; you will need one for your reference.

In order for a school to be officially part of the project and considered for randomisation, there are further requirements ('pre-requisites') that must also be fulfilled (detailed in the *Information sheet*).

Please be aware: returning the signed MoU and fulfilling pre-requisites relate *solely* to inclusion in the project, <u>not</u> 'getting MITA', since the intervention is allocated via 'coin flip' as noted above. **Owing to high levels of interest in MITA, schools will be enrolled in the project on a first-come, first-served basis**.

Your roles and responsibilities

All schools in the project are included in the evaluation of the effectiveness of MITA: those receiving the programme (*the intervention group*) and those carrying on with 'business as usual' (*the control group*). All schools are expected to support the MITA project in the following ways: a) completing the project pre-requisites; b) distributing end-of-year online surveys to staff; c) facilitating access to schools for evaluation team researchers undertaking observations and/or interviews with staff; and d) facilitating access to schools so that pupil outcome testing can be undertaken with selected year groups. The role and responsibilities of schools and the tasks that need to be completed before the randomisation takes place (July 2017) are set out in the checklist below. Full details of the project pre-requisites as well as roles and responsibilities of the delivery and evaluation teams can be found in the Information sheet.

---

[35] http://www.rand.org/randeurope.html; www.cam.ac.uk
[36] https://educationendowmentfoundation.org.uk/

Pre-requisites checklist: to be considered for randomisation in July 2017	Check (√) if condition met
MoU signed by Headteacher and one other member of SLT or chair of governors	
Parental opt-out forms distributed (and collected where applicable)	
Communication to staff about the project	
Pupil, TA and teacher information shared with evaluation team	
Staff consent forms distributed and collected	
"Baseline" staff online survey distributed (80% response rate per TA/teacher group required)	
"Baseline" pupil assessment for Year 1 pupils completed	

If your school is randomised to the intervention group, you will receive the MITA programme over 2017/18.

Signature – Agreement for school to participate

In order to participate in the MITA project, we can only accept MoUs signed by the Headteacher **and one other member** of the Senior Leadership Tea or the chair of governors. **By signing this memorandum of understanding we:**

(i)   confirm we have read and understood the eligibility requirements and we fulfil all applicable eligibility requirements;
(ii) confirm we have read and understood the pre-requisites for participating in the project and we commit to completing these in order to be included;
(iii) confirm that if we have to withdraw[37] from the project activities, the evaluation team will still be able to complete outcome tests with Year 3 pupils; and pupil engagement tests with Year 3 and Year 6 pupils in June 2019;
(iv) agree to engage with the delivery and evaluation team and fully engage in the activities and tasks that comprise the MITA intervention (if randomised to the intervention group) and facilitate the requirements connected to the evaluation of the project;
(v)   confirm that we have read and understood the roles and responsibilities for the evaluation team, the delivery team and schools;
(vi) confirm that we are happy to be contacted by the delivery and/or evaluation teams with updates on progress or in relation to any additional activities connected with the MITA project.

_____

PRINT school name

Head teacher name (printed):	SLT member name (printed):
Head teacher signature:	SLT member signature:
Head teacher email address:	SLT email address:

---

[37] We expect that schools would only withdraw in exceptional circumstances, following discussion and agreement with the delivery team

Information Sheet

(MITA)

Information sheet

For schools participating in the 'Maximising the Impact of Teaching Assistants' (MITA) project

This information sheet provides further details to accompany to Memorandum of Understand (MOU) which schools must sign in order to take part in the MITA project.

Pre-requisites

To be included in the MITA project, schools must complete a number of tasks, as set out in the MOU. The majority of these tasks are standard across all EEF-funded randomised-controlled trials. Below we set out the tasks for this project, the elements the evaluation team require, and why they are necessary.

Pre-requisites to be considered for randomisation	Check (√) if condition met
Memorandum of understanding signed by Head + at least 1 other SLT member	
Parental opt-out forms distributed (and collected where applicable)	
Communicate to staff about the project	
Pupil, TA and teacher information shared with evaluation team	
Staff consent forms distributed and collected	

"Baseline" staff online survey distributed (80% response rate per TA/teacher group required)	
"Baseline" pupil assessment for Year 1 pupils completed	

Informing parents/carers. All schools will need to distribute an opt-out consent letters to parents/carers of all children (e.g. via parentmail). The evaluation team will provide the letter, which schools may wish to send out on their own headed paper. Please note: it is standard practice in EEF-funded projects that pupils are automatically enrolled; parents/carers are required to return the opt-out letter to indicate they would like their child withdrawn from the project evaluation. The evaluation team will email to ask for a list of any pupils who have opted-out pupils in September 2017.

Inform your staff about the MITA project. Ensure your teachers and TAs are fully briefed about your application to participate in the MITA project. Make them aware they will be contacted about surveys, and some may be contacted about observations and interviews.

Basic school information. Each school will need to supply some basic data about staffing, so that we understand the size of the school in terms of staffing and can report back on response rates to surveys. This means:

> **The number of teaching staff and % full-time**.
> **The number of teaching assistants and % full-time**.
> **The number of senior leadership team (SLT) members**.

Anonymous staff survey. Short online surveys will be sent to Heads/SLT, teachers and TAs at three points over the life of the project: 1) summer term 2017 (before randomisation in July); 2) summer term 2018; 3) summer term 2019 (see **Table 47** below). Each survey asks questions about typical practice and experiences, allowing the evaluation team to track changes in practice at the school level. Surveys should take no more than 8-10 minutes to complete. The surveys are completed anonymously and do not ask for names.

School leaders are expected to ask all staff to complete the surveys. *Before* **a school can be randomised, at least 80% of TAs (High level TA status and other TA status) and 80% of teachers must complete the baseline staff survey.** The evaluation team will provide regular updates for schools on the number of completed surveys by staff group.

Pupil information. The focus of this research is understanding the effects of changes to TA deployment on pupil outcomes. This means an essential part of the project is the collection of pupil outcome data. Some of the information we need we can collect from the National Pupil Database, but in order to do that we will require the following information on pupils, collected through a spreadsheet: *Unique Pupil Number, Surname, Forename, Date of birth, Gender, pupil premium, Language background, Entry date in school, SEN status, FSM status current year, Key Stage 1 results (Maths, Reading, Writing and Phonics)*.

Pupil testing. All outcomes testing will be conducted by a third party (Acer) or by the teachers, who will provide invigilation for the testing. The testing required for the project is:

- An external reading test administered to all pupils in Year 1 at the end of the **2016/17** academic year. **This is the 'baseline' test that is part of the pre-requisite tasks for schools to be included in the project.**
- An external reading test administered to all pupils in Year 3 at the end of the **2018/19** academic year.
- A short pupil engagement assessment administered to all pupils in Years 3 and Year 6 at the end of the **2018/19** academic year.

This means that all Year 3 pupils, in both treatment and control schools, would sit the reading test at the end of the year and that all Year 3 and Year 6 pupils in both intervention and control would sit the pupil engagement assessment.

Participating schools are expected to support these tests and allow invigilators access to schools, as required. **Note that schools will be expected to support the implementation of the external test even if teachers and/or TAs withdraw from the intervention** (as per the commitments listed in the MOU).

ALL pupils in the focal years must be tested at outcome, so this may mean a few additional visits are required.

School visits by evaluation teams. During the project, the evaluation team would like to undertake school visits in 5 to 10 selected schools. Selected schools in the intervention group will be visited three times over the period of the project, while schools in the control group will be visited once (at the end).

During these visits, the research team will conduct interviews with 3 to 5 staff including the Headteacher, members of the SLT, teachers and TAs. The research team will also observe one Year 3 and one Year 6 classroom in each school during each visit. Schools are asked to allow access to the team to conduct these interview and observations.

Schools will be asked to provide administrative data to support the project. Data Sharing Agreements between UCL-IOE / UEL / LLS and external partners are in place to ensure that this happens in a way that maintains the anonymity and security of data.

Providing data therefore relies on schools consenting to the sharing of data with the intervention and evaluation partners. The MOU outlines the policy around data sharing and confidentiality adhered to by the intervention and evaluation partners.

Roles & responsibilities

There are three 'actors' involved in the MITA project:
- delivery team,
- evaluation team,
- the schools.

Delivery team: UCL Institute of Education (IOE) / University of East London (UEL) and London Leadership Strategy (LLS)

The delivery team will be led by **Rob Webster (IOE)**, supported by **Paula Bosanquet** (UEL) and staff from LLS. The delivery team has developed the MITA intervention and will provide the elements of this intervention as part of this project.

Delivery team roles and responsibilities to enable the MITA intervention to take place

As part of the delivery of the intervention, the delivery team is responsible for the actions below:

- Recruiting schools.
- Providing schools with information to explain the purpose/design of the intervention and of the project. This will include holding information sessions for interested schools and the provision of information packs to interested schools and responding to queries about participation in the project.
- Providing the MITA training sessions for Headteachers/SLT, teachers, and TAs.
- Matching each school with an NLE consultant from LLS in the intervention condition.
- Ensuring schools in the intervention group have access to the relevant online tools.
- Providing a contact for all participating schools staff for a support desk service at any time [ioe.mita@ucl.ac.uk.].

Delivery team roles and responsibilities to enable the project evaluation activities to take place

As part of the project evaluation, the delivery team is responsible for the actions below:
- Distributing and collecting all participation documents and data from schools (MoUs, school administrative data)
- Working with schools to collect administrative data outlined in detail in the Data Sharing Agreements between the delivery and evaluation teams.
- Distributing collecting letters of consent and opt-out for teachers and parents to schools.

Evaluation team: RAND Europe and the University of Cambridge

The project will be designed and conducted by RAND Europe, led by **Dr. Alex Sutherland and Dr. Julie Belanger**, supported by the following external experts: **Professor Anna Vignoles and Dr Sonia Ilie** (University of Cambridge). The evaluation team will also oversee data collection and will produce the project report required by the Education Endowment Foundation.

RAND will design and conduct the project and collect all relevant data, and is thus responsible for the actions below:

- The random assignment of schools to intervention and control conditions.
- Collecting administrative data from the National Pupil Database as described in the Data Sharing Agreement between the delivery and evaluation teams.
- Developing and implementing primary data collection tools:
  o Online surveys (to be administered three times each)

- ▪ Headteacher/SLT survey
- ▪ Teacher survey
- ▪ TAs survey
  - o Interviews with a small selection of Headteachers/SLT, teachers and TAs.
  - o Observation of classroom practice in a small selection of Year 3 and Year 6 classes.
  - o Observations of training sessions in a small selection of schools.
- Arranging for the testing of pupil outcomes: reading test (for Year 1 pupils at the end of the 2016/17 academic year and Year 3 pupils at the end of the 2018/19 academic year) of schools participating in the evaluation (both treatment and control). The test will be administered by schools at baseline and by a third party (ACER) at the end of the intervention.
- Arranging for the administration of a pupil engagement assessment for pupils in Year 3 and Year 6 at the end of the intervention.
- Producing the final project report.

Evaluation team contact details: alex_sutherland@rand.org   **Telephone: 01223 353329**

Schools taking part in the MITA project

Intervention schools

Successful implementation is dependent on **intervention schools** having sufficient will and capacity to implement the MITA approach, and the full participation of SLT, teachers and TAs in the following activities:

- The **headteacher and one other senior leader** will be expected to attend 4 strategy sessions on:
  Monday, 18th September 2017 at The Portsmouth Academy, St Mary's Road, Portsmouth, PO1 5LB
  Monday, 6th November 2017 at The Portsmouth Academy, St Mary's Road, Portsmouth, PO1 5LB
  Monday, 12th February 2018 at The Portsmouth Academy, St Mary's Road, Portsmouth, PO1 5LB
  Monday, 11th June 2018 at The Portsmouth Academy, St Mary's Road, Portsmouth, PO1 5LB

- The **headteacher and SLT** will be expected to participate in meetings with the NLE assigned to their school. Three visits (one per term) will be held at your schools and arranged in consultation with you and your NLE.
- **SLT** will be expected to complete specific tasks to inform the strategy sessions and NLE visits, including a self-evaluation, drafting a 'vision for change' and an action plan.
- **Teachers and TAs** will be expected to undertake *Maximising the Practice of TAs* training in the spring term. Training will be delivered over two days. Each training day consists of a half-day for TAs, followed by a twilight session for teachers. A senior leader involved in the project is required to attend all sessions.
- **TAs** will be expected to undertake 'gap tasks' in between their two training sessions.
- Although the evaluation of the project focuses on pupils currently in Years 1 and 3, MITA is a whole school intervention. Schools are expected to plan, develop, trial and implement strategies at the **whole school level** over 2017/18, and roll out new strategies across all classes at the start of the 2018/19 school year.

In addition, to support the project evaluation, the intervention schools will be required to fulfil the following activities:

- Completing the project pre-requisites;
- Provide baseline pupil data (KS1 for Y5);
- Facilitate access to external tester (ACER for YR2) at baseline and follow-up year (ACER for YR3);
- Distribute staff surveys (Heads/SLT, teachers and TAs) **three times:** at baseline, end of Intervention year 17/18 and follow-up year 18/19;
- Facilitate access to schools for the evaluation team to undertake staff interviews and classrooms observations **three times**: at baseline, end of Intervention year 17/18 and follow-up year 18/19;
- Facilitate access to schools for the evaluation team to undertake training sessions observations;
- Comply with NLE consultant visits;
- Allow teachers to implement a pupil engagement assessment at the end of follow-up year 18/19

Control schools

In order to support the project evaluation, the control schools will be required to fulfil the following activities:

- Completing the project pre-requisites;
- Provide baseline pupil data (KS1 for Y5);
- Facilitate access to schools for external tester (ACER for YR2) at baseline and follow-up year (ACER for YR3);
- Distribute staff surveys (Heads/SLT, teachers and TAs) **twice**: at baseline and follow-up year 18/19;
- Facilitate access to schools for the evaluation team to undertake staff interviews **twice:** at baseline and follow-up year 18/19;
- Facilitate access to schools for the evaluation team to undertake out classrooms observations **at the end of** follow-up year 18/19;
- Allow teachers to implement a pupil engagement assessment at the end of follow-up year 18/19.

MITA eligibility and pre-requisite checklist for schools

For schools participating in the 'Maximising the Impact of Teaching Assistants' project

Conditions for participation	Tick (√) if condition met
Eligibility criteria	
Be a primary or junior school in or near the target areas[38]	
No prior engagement in MITA/MPTA training sessions	
No prior action taken following the EEF TA or MITA or MPTA handbooks	
Not in special measures **OR** facing imminent leadership changes	
Pre-requisites to be considered for randomisation	Tick (√) if condition met
Memorandum of understanding signed by Head + at least 1 other SLT member	
Staff consent forms collected	
Parental opt-out forms distributed (and collected where applicable)	
"Baseline" staff online survey distributed (80% response rate per TA/teacher group required)	
Pupil, TA and teacher information shared with evaluation team	
"Baseline" pupil assessment for Year 1 pupils completed	

Data collection overview and timings

Throughout the project we will collect data pertaining to the evaluation (**Error! Reference source not found.**). It is important to keep in mind that **both intervention and control schools will need to engage with the evaluation process for the project to be a success**.

In the following sections we set out which parties will be involved with different streams of data collection for the project, along with their respective responsibilities.

---

[38] West Midlands; Portsmouth, Havant and Fareham; Barking & Dagenham, Redbridge, Havering and Thurrock

Table 47: Overview of data for MITA project and timings

Year→ / Activity↓	Planning Year: 16/17			Intervention year: 17/18			Follow-up year 18/19		
Term →	T1	T2	T3	T1	T2	T3	T1	T2	T3
Documentary review		X	X						
Baseline pupil data (KS1 for Y5; ACER test for YR2)			$X_{I/C}$						
Staff surveys (Heads/SLT, teachers and TAs)			$X_{I/C}$			$X_{I/C}$			$X_{I/C}$
Staff interviews – 3-5 interviews per school (5 intervention schools; 5 control schools)			$X_{I/C}$			X_I			$X_{I/C}$
Classroom observations (5 intervention schools)			X_I			X_I			$X_{I/C}$
Training sessions observations in 5 schools (SLT, teacher and TA training)				X_I	X_I	X_I			
Review of consultancy visits reports in 5 schools (2 visits per school)				X_I	X_I	X_I			
External testing (YR3 pupils)									$X_{I/C}$
Pupil engagement assessment									$X_{I/C}$

Note: I= only intervention, I/C=both intervention and control

Data protection & anonymity

The evaluation team will collect and store all project data in accordance with the Data Protection Act (1998). Study data will be stored on secure servers. Data transferred between the delivery and evaluation teams containing any identifying information will be passphrase encrypted. Data transferred between schools and the evaluation team will be via encrypted files or secure file transfer.

Pupil data for supplying to the NPD will be transferred securely via the Department for Education secure transfer website (https://transfer.ecloud.education.gov.uk/submit). No-one who participates in the project will be named in any publications arising from the project and results will be presented on aggregate. Schools will have the option of allowing their participation in the project to be known.

Space for notes about the project/questions/reminders:

Opt-out consent form for parents

Dear Parent/Guardian,

Participation in Education Endowment Foundation Research Project

I wanted to let you know that [SCHOOL NAME] has volunteered to take part in a research project sponsored by the Government-funded Education Endowment Foundation.

Data collection is essential to the success of the research and evaluation, so some data about each pupil will be collected. If you would prefer your child's information NOT to be included in the research and evaluation, please fill in the reply slip provided overleaf and return it to the school. Please note that if you are happy for your child's information to be included, you DO NOT need to return the reply slip. Also, if at any time during the year you would like to withdraw your child from the research and data collection, you can of course do so by contacting me, the Head Teacher.

If you have any questions, please feel free to contact Dr Alex Sutherland, Research Leader at RAND Europe, at **asutherl@rand.org**. If you wish to discuss this with me, please do not hesitate to get in touch.

Kind regards,

[HEAD TEACHER]

The research project

The project, which will run over the 2016-17 and 2018-19 academic years, is looking to assess how a school intervention targeting a better deployment of teacher assistants (TAs) helps to improve pupils' outcomes. Schools which volunteer for the study will: receive sessions for all teaching staff on how to improve deployment of TAs or be part of control.

As part of the research study, students will be asked to complete a test at the end of the school year to help determine whether the sessions helped students of schools to progress more than students of school which did not received any training. Pupils in Year 1 will sit a Reading test before starting Year 2 in September 2017 and again at the end of Year 3 in September 2019; this will be provided by a third-party. In addition, some confidential data about pupils will be collected from the school and other databases by the evaluators (please see details below).

Data collection is essential to the success of the research and evaluation and your support would be greatly appreciated. If you would prefer your child's information NOT to be included in the research and evaluation, please fill in the reply slip provided overleaf informing us that you do not want your child's information in the evaluation and return it to the school. Please note that if you are happy for your child's information to be included, you DO NOT need to return the reply slip. Also, if at any time during the year you would like to withdraw your child from the research and data collection, you can of course do so by contacting your Head Teacher.

Teachers and TAs will be allowed to withdraw from the study at any time. School staff may also improve their teaching as a result of skills they learn from sessions and school improvement plan. We do not identify any significant risks or benefits for pupils who will be taking part in the evaluation part of the project (which includes the transfer of confidential data and an additional test).

Although we do not yet know what the outcomes will be, it is important that we take opportunities like these to help academics and policy officials identify areas for improvement in schools and ways of making teaching more effective for pupils in the classroom.

Information about data and confidentiality

The research team will be collecting some information about pupils from the school and by using a data source called the National Pupil Database[39]. Pupils in Year 1 in June 2017 and pupils in Year 3 in June 2019will sit a short reading comprehension test which will be used to assess whether the training sessions have influenced how school staff have taught over the two years of the intervention; the pupil results will be shared with their own schools.

Pupils' test responses and any other pupil data will be treated in the strictest confidence. Pupil data will be shared with the evaluators of the research (RAND Europe[40] and University of Cambridge) and the developers of the research design (UCL Institute of Education, University of East London and LLS). Some data will also be shared with the Department for Education, Education Endowment Foundation (EEF)[41], the EEF's data contractor FFT Education[42] and in an anonymised form to the UK Data Archive. The EEF uses data gathered from the research it funds to look at the longer-term benefits of the approaches being tried out in schools. This information is passed – in anonymous form – to the EEF's partner FFT Education, who conducts follow ups via the National Pupil Database. Pupil names will only be used to match pupils to the National Pupil Database. Names will not be stored in the same files as test results and will be accessible only to the small research team. **We will not use your child's name, their teacher's name or the name of the school in any report arising from the research.**

The Maximising Impact of Teacher Assistants (MITA) Research has the potential to improve the learning outcomes of children and whilst we do not expect that your child will notice much of the evaluation, you can withdraw your child from the evaluation at any time. If you would prefer your child's information NOT to be included in the evaluation, please inform your child's teacher as soon as possible. There is a reply slip provided below for returning to the school should you opt not to include your child's information in the evaluation. Please note that if you are happy for your child's information to be included, you DO NOT need to return the reply slip.

---

[39] https://www.gov.uk/guidance/national-pupil-database-apply-for-a-data-extract
[40] http://www.rand.org/randeurope.html
[41] https://educationendowmentfoundation.org.uk/
[42] **http://www.fft.org.uk/**

IF YOU APPROVE OF YOUR CHILD'S INFORMATION BEING INCLUDED IN THE EVALUATION THEN IT IS NOT NECESSARY FOR YOU TO RETURN THIS FORM TO THE SCHOOL

……………………………………………………………………………………………………

Evaluation of the Education Endowment Foundation Research Project

I have been informed of the nature of the evaluation and I do **NOT** wish for my son's/daughter's information to be included.

Print name of child: _____

Print name of school: _____

Parent/Guardian's signature: _____ Date: _____

Please, would you briefly outline your reasons for not wishing your son/daughter to participate in this research:

Please return this form to your child's school by [date –two weeks after letters are distributed].

Privacy notice for Headteachers

Headteachers only should be routed to the following privacy notice

Privacy Notice

RAND Europe is collecting data on the basis of its legitimate interest as we have been contracted by the Education Endowment Foundation to evaluate the MITA programme and you have agreed to take part in this survey. Because the survey has asked you to provide the name of your school and you have identified yourself as the Headteacher, your responses to the survey will amount to identifiable data.

Your survey responses will be collected and stored on the SmartSurvey platform by RAND Europe. RAND Europe will obtain the data securely from SmartSurvey. SmartSurvey will delete your survey responses and identifiable data once RAND Europe has obtained it. RAND Europe will maintain in confidence this data and use it only for the purpose of evaluating MITA. The data will be stored securely on RAND Europe's data servers for the duration of the MITA evaluation project. To allow us time to analyse and report the results of the trial, this period will extend beyond your school's participation in the trial. Your school and position data will be used to create descriptive statistics and individual schools will not be identified in this context. Your responses shall not be made available to your employer or otherwise passed to any third party.

Please do not provide any sensitive data in this survey, such as your political persuasion. If sensitive data is provided in the survey, RAND Europe will delete it before analysis.

In certain circumstances, you may have the right to restrict or object to processing. You also have the right to make a subject access request to see all the information held about you. To exercise any of these rights, please contact the RAND Europe data protection officer (redpo@rand.org). If you have any questions about how your data will be used, please do not hesitate to contact the RAND Europe data protection officer (redpo@rand.org). You may also contact the UK Information Commissioner's Office if you have any concerns about our use of your data at **https://ico.org.uk/concerns/**.

Please click "Next" if you would like to proceed.

'Next' button here

Teacher consent form

Maximising the Impact of Teaching Assistants (MITA) Study

Understanding Your Participation

Study Purpose.

This study is intended to assess the effectiveness of a school intervention (MITA) targeting the better deployment of teaching assistants (TAs) in primary schools. The study is funded by the Education Endowment Foundation (EEF).[43] Schools' involvement in the study will begin at the end of the 2016/17 academic year and will end at the end of the 2018/19 academic year. The intervention is delivered by University College London - Institute of Education / University of East London (UEL) and London Leadership Strategy (UCL-IOE/UEL/LLS) (the delivery team), funded by the Education Endowment Foundation and evaluated by RAND Europe[44] and the University of Cambridge (the evaluation team).

Your school is one of approximately 100 schools which are taking part in this important research. Teachers and TAs in your school are now asked to participate in the research. Results will be used to provide information to the delivery team, schools and the research community more broadly about whether a better deployment of TAs helps improve pupil engagement and outcomes.

Procedures: what do I need to do? What is being asked of me?

In July 2017, half of the participating schools will be randomly selected to take part in the MITA intervention programme, while the other half will be included in the research as control schools, with business as usual.

- If your school is selected for the MITA programme, you will take part in the MITA training sessions and be part of the MITA programme.
- If you are selected for the control, you will not participate in the MITA programme or training sessions, but your school will be provided with a different training opportunity for which you will be eligible and will receive other incentives.

You are asked to agree to participate in the evaluation of this intervention programme. As part of the study you will be asked to complete three short online surveys on your current practice, recent CPD and well-being which should each take approximately 10 to 15 minutes. The surveys will take place at the beginning of the research (June 2017), after the first year of the research (June 2018) and at the end of the research (June 2019).

Also as part of this study, a small number of schools (5 to 10) will be selected for 1 to 3 school visits each throughout the duration of the research. If your school is selected, you may be asked to take part in a short interview with a member of the research team. This interview would take place in the school during school hours and would last a maximum of 30 minutes. During these school visits, one or two researchers from the evaluation team will also conduct observations of Year 3 and Year 6 lessons. Your class may be selected for these observations. If this is the case, the researcher(s) will make every effort not to disturb your class or your teaching in any way and will remain at the side-lines of the class. The researcher(s) will not interact with the pupils during the lesson observation. These lesson observations will last a maximum of 45 minutes.

As part of this study, all Year 1 pupils at the end of the 20106/17 academic year and all Year 3 pupils at the end of the 2018/19 academic year will sit an external reading test. Furthermore, all Year 3 and Year 6 pupils at the end of the 29018/19 academic

---

year will sit a short pupil engagement assessment. If you work with these pupils, you will be asked to support these test administration.

Your school will also be asked to provide some information about you and your pupils to the research team, including the pupil identifiers of all pupils in or expected to be in your classes for 2016/17, 2017/18 and 2018/19, information about the performance of those pupils before they enter your classroom, and data about you, such as demographic information, as usually collected by your school.

Confidentiality.

Research records will be kept *confidential* to the extent allowed by law, and will only be used for the purpose of the study. Our reports will contain summaries, and responses will never be presented in any way that would permit readers to identify you or your school. No one at your school will have access to survey responses that include respondents' names, school names, or other information that could potentially be used to identify individuals or schools. Anonymised data from the study will be made publically available through the UK Data Archive.

Participants.

All teaching staff at participating schools are being invited to participate in the evaluation.

Benefits and Costs.

There are no costs to you for participating in the study. You may learn how to improve your teaching practice. Your completion of the surveys gives you the opportunity to reflect on and share your perspective about policies at your school. By participating in the study, you will be providing valuable information that may help other schools decide whether these policies are effective and worth pursuing.

Compensation.

You will not receive financial compensation for your participation in the study.

Risks.

There is minimal risk in this study. The activities you undertake will be similar, if not identical, to your everyday working practices. To the best of our knowledge, the things you will be doing have no more risk of harm than you would experience in everyday life. There is a small risk that confidential information about you is released to the public. However, to minimise the risks to loss of confidentiality, all data will be anonymised within the delivery team. Only the Project Manager in the delivery team will be able to associate names with unique participant numbers within the study. In addition, only researchers on the project will have access to any of the information we collect, which will be anonymised, so no one, not even the researchers, will know who you are in the data. The evaluation team will monitor the effect the study has on teachers through surveys and will report anonymous and aggregated results to schools. In schools where only small number of teachers participate the anonymity of teachers will be guaranteed through a combined report to schools with small numbers of participating teachers.

Please contact the Primary Investigator from the evaluation team (contact details at the end of this document) if you have concerns. During the study, please also feel free to speak with your school's Headteacher or to contact the delivery team [email].

Voluntary Participation.

Participation in evaluation is entirely voluntary. You may refuse to participate, withdraw, or refuse to answer specific survey questions at any time without penalty or loss of benefits to which you are entitled. If you decide that you no longer wish to continue in this study, you will be required to notify the delivery team [to indicate and add email address].You will be told if any important new information is found during the course of this study that may affect your wanting to continue.

Questions?

If you have any questions about this study, please feel free to contact the Research Leader for the evaluation, Dr. Alex Sutherland at alex_sutherland@rand.org or by calling 01223 273 884. For other queries, please contact the delivery team leader, Rob Webster at rob.webster@ucl.ac.uk. You may also call the Human Research Protection Program at 001-858-455-5050 for more information, to inquire about your rights as a research subject, or to report any research-related problems.

Your Signature and Consent

By signing below you agree that:

You have received, read and understand this consent document.

You agree to participate.

_____   _____

Signature   Date

_____

Name

Further appendices

Appendices D–I are available as a separate document (Technical Notes).

The Education Endowment Foundation
5th Floor, Millbank Tower
21–24 Millbank
London
SW1P 4QP

https://educationendowmentfoundation.org.uk

@EducEndowFoundn

Facebook.com/EducEndowFoundn