Education Endowment Foundation

Evaluating DreamBox Reading Plus adaptive literacy programme as an intervention to improve reading attainment: A two-armed cluster randomised controlled trial

Evaluation report

September 2026

Stephen Morris, Steph Ainsworth, Kate Wicker, Karolina Krzemieniewska-Nandwani, Helen Lawson, Cathy Lewin, and Sandor Gellen

Manchester Metropolitan University

The Education Endowment Foundation (EEF) is an independent charity dedicated to breaking the link between family income and education achievement. We support schools, colleges, and early years settings to improve teaching and learning for 2- to 19-year-olds through better use of evidence.

We do this by:

- **Summarising evidence**. Reviewing the best available evidence on teaching and learning and presenting in an accessible way.
- **Finding new evidence.** Funding independent evaluations of programmes and approaches that aim to raise the attainment of children and young people from socio-economically disadvantaged backgrounds.
- **Putting evidence to use**. Supporting education practitioners, as well as policymakers and other organisations, to use evidence in ways that improve teaching and learning.

We were set-up in 2011 by The Sutton Trust partnership with Impetus with a founding £125m grant from the Department for Education. In 2022, we were reendowed with an additional £137m from the government, allowing us to continue our work until at least 2032.

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

The Education Endowment Foundation
5th Floor, Millbank Tower,
21–24 Millbank,
London,
SW1P 4QP

0207 802 1653

info@eefoundation.org.uk

www.educationendowmentfoundation.org.uk

Table of contents

About the evaluator 3

Executive summary 4

Introduction 6

Methods 22

Impact evaluation results 44

Implementation Process Evaluation results 57

Conclusions 116

References 125

Appendix A: The EEF cost rating 131

Appendix B: Security classification of trial findings 132

Appendix C: Changes since the previous evaluation 134

Appendix D: Effect size estimation 135

About the evaluator

The project was independently evaluated by a team from Manchester Metropolitan University: Professor Stephen Morris; Dr Steph Ainsworth; Dr Kate Wicker; Dr Karolina Krzemieniewska-Nandwani; Dr Helen Lawson; Professor Cathy Lewin; and Sandor Gellen.

The co-principal investigators were Dr Steph Ainsworth and Professor Stephen Morris.

Contact:

Professor Stephen Morris
School of Sociology and Criminology,
Manchester Metropolitan University,
Geoffrey Manton Building,
Rosamond Street West,
Manchester,
United Kingdom
M15 6LL

Email: s.morris@mmu.ac.uk

Acknowledgements

The evaluation team would like to thank all the schools, senior leaders, teachers, teaching assistants, parents, and pupils who participated in this evaluation and generously shared their experiences with us throughout the study.

We would also like to thank the teams at FFT Education and AlphaPlus for working professionally and efficiently on our behalf to support data collection, school liaison, and assessment administration throughout the trial. In particular, we thank Thea Needs, Andy Lewis, Serena Idris, and Charlotte Stokes for their contributions to this work.

We are grateful to the team at Daisy Education for their collaboration throughout the trial, including recruiting schools, delivering the Reading Plus programme, supporting implementation, and facilitating communication with participating schools. We would particularly like to thank Ian Fitzpatrick, Briony Cragg, and Sarah Cuthbertson for their support and commitment to the project.

Finally, we thank the Education Endowment Foundation for its support, guidance, and oversight throughout the evaluation.

Executive summary

The project

DreamBox Reading Plus (Reading Plus) is an online, adaptive, silent reading programme designed to improve reading and language comprehension skills. The programme supports fluency, comprehension, and vocabulary growth, and is designed to support all readers including pupils with English as an Additional Language (EAL), Special Educational Needs and Disabilities (SEND), as well as high attainers. In this evaluation, Year 5 pupils, aged nine to ten years, in Reading Plus schools were able to use the programme. Year 5 teachers delivered the programme to whole classes for at least 90 minutes a week, over a minimum of two sessions, for example, two 45-minute sessions or three 30-minute sessions per week, for the duration of the intervention period (October 2024 to May 2025). The intervention was delivered by Daisy Education previously known as Reading Solutions.

In total, 124 primary schools were recruited to this efficacy study which took the form of a cluster randomised controlled trial (RCT), with random allocation at the school level. Of the 124 schools, 62 schools were allocated to an intervention group, referred to as the Reading Plus schools, and 62 schools to the control group. Across the 124 schools there were 5,403 pupils, 2,747 pupils in intervention schools invited to use Reading Plus and 2,656 pupils in control (business as usual) schools. Along with the impact evaluation, the study also included an implementation and process evaluation (IPE) and cost evaluation of Reading Plus. The IPE included surveys and detailed interviews with headteachers and teachers, observations of lessons, and analysis of online platform data.

Recruitment to the study began early in 2024 with final data collection complete by July 2025.

Table 1: Key conclusions

Key conclusions	
1.	Pupils in Reading Plus schools made no additional months' progress in reading attainment, on average, compared to pupils in other schools taught under business as usual conditions. This result has a high security rating.
2.	Among pupils eligible for free school meals (FSM), those in Reading Plus schools made one month's additional progress in reading on average, compared to pupils eligible for FSM in other schools. These results may have lower security than the overall findings because of the smaller number of pupils and are similar to those for non-FSM pupils.
3.	Pupils in Reading Plus schools made no additional months' progress in **reading comprehension,** one month's additional progress in **reading fluency** and two month's additional progress in **vocabulary**, on average, compared to pupils in other schools taught under business as usual conditions.
4.	Evidence from the IPE suggests that overall, both teachers and pupils thought that Reading Plus had led to improvements in reading, comprehension, fluency, and vocabulary. Of these areas of reading, teachers felt that the intervention was particularly supportive of fluency.
5.	Reading Plus was implemented with fidelity and accompanied by high-quality training and support. Where delivery varied from the core intervention model this was due to timetable pressures, staff shortages, and other competing school activities. In some schools the intervention was adapted for lower-attaining pupils.

EEF security rating

These findings have a high security rating. This was an efficacy trial, which tested whether the intervention worked under developer-led conditions in a number of schools. The trial was a well-designed two-armed cluster RCT. The trial was well powered. However, the fact that 18% of pupils who started the trial were not included in the final analysis, because a number of schools withdrew from the study, reduced the security of the findings.

Additional findings

Pupils in Reading Plus schools made, on average, no additional months' progress in reading compared to those receiving business-as-usual provision. 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.

In comparing FSM pupils in Reading Plus (intervention) schools with those in control (business as usual) schools, and non-FSM pupils in intervention and control schools, we obtain very similar results, however, the result for the FSM group is just about equivalent to one month's additional progress, whereas the result for non-FSM pupils falls just slightly below this

point. For SEND pupils, however, the results suggest that tentatively, they may have benefited more from Reading Plus than their non-SEND peers, but due to the high degree of uncertainty in our estimates we cannot conclude with any confidence that this difference represents a real improvement for them.

Findings from the IPE present, what appears at first glance, a contrasting picture to the trial results. Teachers generally perceived improvements in pupils' comprehension, fluency, vocabulary, and overall reading development. Many also noted that pupils initially engaged with Reading Plus enthusiastically, although this engagement sometimes diminished over time. The IPE suggests that Reading Plus was implemented with high fidelity and that teachers overwhelmingly kept to the weekly 90-minute structure. Overall, in terms of fidelity to the design and ethos of the programme, this trial represented a good test of Reading Plus.

The apparent divergence between the results of the trial and the IPE analysis can perhaps be explained by evidence that non-Reading Plus schools were engaged in a certain degree of innovation in the teaching of reading over the period of this study. As a result, it is reasonable to expect improvement in reading among pupils in non-Reading Plus schools over and above that which might have occurred due to business as usual teaching and general maturation. Teachers in Reading Plus schools may have seen improvements in reading among their pupils due to the programme, but the trial results show that these gains were not greater than those seen among pupils in non-Reading Plus schools.

The main finding of the trial differs from promising findings reported in previous evaluations of Reading Plus. This includes a small UK study conducted with Year 6 pupils (Reading Solutions, 2022). However, there were several methodological limitations to the study, including its small sample size (n=470 pupils) and lack of randomisation. A randomised efficacy study evaluating the original United States version of Reading Plus reported significant gains in reading efficiency in Grade 4 and reading achievement in Grade 5 (Spichtig *et al.,* 2019). Again, however, the sample size was relatively low (n=426 pupils across both grades), and we might not expect United States findings to be automatically transferable to the UK.

Cost

The average cost of Reading Plus for one Key Stage 2 class was around £1,109 (assuming 27 pupils per class), or £41.06 per Key Stage 2 pupil per year when averaged over three years.

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	0.03 (-0.1, 0.15)	0	🔒🔒🔒🔒🔒	4,440	0.66	£ £ £ £ £
Reading attainment for children eligible for FSM	0.05 (-0.11, 0.20)	+1	Not applicable	1,410	0.56	Not applicable

Introduction

Background

DreamBox Reading Plus (known as Reading Plus hereafter) is an online adaptive silent reading programme designed to improve reading and language comprehension skills (Spichtig *et al.,* 2019). The programme supports fluency, comprehension (e.g. inference), and vocabulary growth. It is designed to support all readers including pupils learning English as an Additional Language (EAL) and pupils with Special Educational Needs and Disabilities (SEND). The programme incorporates a visual skills element which scaffolds pupils' reading via a Guided Window text display to support eye movement control (Radach and Kennedy, 2013). The programme also includes additional visual skills activities to support lower-attaining readers. Another unique feature of the programme is that children self-select reading tasks based on age-appropriate texts. These tasks are designed to be of 'high interest' for all children, including lower-attaining readers. Overall, the programme aims to have an important socio-emotional impact by building stamina and motivation to read. In addition to promoting reading proficiency directly (by improving pupils' fluency, vocabulary, and reading comprehension), the programme also aims to have an indirect effect on reading attainment through improvements in teachers' knowledge of the role of silent reading fluency in developing reading stamina and comprehension.

A small non-randomised efficacy study of Reading Plus in the UK (Daisy Education, 2022) provided promising evidence of Reading Plus's potential. In this study, involving 470 pupils in Year 6, the intervention group engaged with Reading Plus for a minimum of 30 minutes, three times per week over nine months. Pupils using Reading Plus saw their reading attainment scores improve by 50% whereas those not using the programme saw gains just over half this. In the United States (US), a small randomised controlled trial (RCT) of Reading Plus with fourth- and fifth-grade pupils (n=426 pupils) produced significant gains in reading achievement relative to business as usual, reporting a small but significant effect size (ES = +0.13, $p<0.01$) (Spichtig *et al.,* 2019) on the Group Reading Assessment Measure (Williams, 2001). In this trial, pupils in the intervention group engaged with the programme in 25-minute supplemental literacy blocks, and reading proficiency was measured at the beginning and end of the school year using the Group Reading Assessment Diagnostic Evaluation (GRADE). While the two existing trials suggest that Reading Plus may be effective for accelerating pupil reading attainment, a larger independent evaluation was needed. Reading Plus is growing in popularity with over 1,700 schools currently using it within the UK.

The digital nature of Reading Plus provides several potential benefits. At the core of the programme there is automated differentiated reading instruction, underpinned by continuous formative assessment, which informs tailored self-paced reading lessons (Spichtig *et al.,* 2019). This automated intertwined process of assessment and teaching is designed to provide learning experiences closely adapted to pupils' current level of development. It also has the potential benefit of reducing teacher workload, as the programme is designed to largely run itself once pupils get started.

The proposed benefits of Reading Plus as an online reading intervention align with previous research into the advantages of EdTech (educational technology, or digital learning technology) interventions. Recent studies in England suggest that headteachers and teachers believe EdTech interventions have the potential to reduce workload through, for example, supporting assessment (Cooper Gibson Research, 2021; 2022). More specifically, See *et al.* (2022) conclude that EdTech formative assessment can support improvements in reading at the primary phase. Recent meta-analyses of EdTech literacy interventions for primary-aged children suggest positive impacts on domains such as decoding, fluency, language comprehension, and reading comprehension (Vanbecelaere *et al.,* 2023: ES = +0.37, overall effect size for a range of outcomes; Silverman *et al.,* 2020: ES = +0.31 for reading comprehension; Silverman *et al.,* 2024: ES = +0.23 for reading comprehension). However, Silverman and colleagues (2020; 2024) found that the effect sizes were markedly lower in studies that used standardised measures (ES = +0.14 for reading comprehension). These positive indications are broadly supported by a review commissioned by the Education Endowment Foundation (EEF) (Lewin *et al.,* 2019) although the evidence does not consistently point toward a positive impact. Recent research has highlighted the drawbacks and unintended consequences that can be associated with the use of EdTech, including concerns in relation to: how overuse of EdTech might negatively impact the 'scope, sequence and balance of the school curriculum' (Ahn, 2022, p. 12), poor quality/inaccurate information being provided; the risk of students becoming more easily distracted when learning through digital modes; difficulties striking the balance between personalising learning, and ensuring coverage of core content; and reducing the purpose of schooling to a technicist, dehumanised framing of education (e.g. see Ahn, 2022 for a review). There are also reports of EdTech interventions leading to reduction rather than gains in achievement and a 'gap-widening effect',

broadening the gap between lower and higher attaining students in the context of reading and mathematics interventions (Ahn, 2022, p. 2). Drawing upon lessons learned from the use of EdTech during the COVID-19 pandemic, West (2025) emphasises the need to ensure that EdTech applications promote teacher agency and pedagogical innovation, use online environments tailored to students' needs, and do not negate the importance of in-person learning. West (2025) also highlights the importance of holding inclusion and the needs of marginalised learners at the centre of EdTech use, developing 'digital capacities' (West, 2025, p. 479) of teachers and students and implementing safeguards to protect the safety of students when working online.

In relation to groups who might benefit, a meta-analysis conducted by Silverman *et al.* (2024) reported that disadvantaged pupils benefit more from EdTech literacy interventions focusing on decoding than their more advantaged peers, although the authors did not draw any conclusion about what was driving this moderation effect. Similarly, some of the studies reviewed by Lewin *et al.* (2019) suggested that socio-economically disadvantaged pupils benefit more. In contrast, Vanbecelaere and colleagues (2023) reported that socio-economic status did not moderate the effectiveness of EdTech literacy interventions. Silverman *et al.* (2020) also noted that English language learners could benefit more from reading comprehension interventions (although not specifically EdTech interventions) than native language speakers. Very few studies disaggregate data by language learners (Silverman *et al.,* 2024). These apparent contradictions alongside limited evidence to date suggest a need to gather further rigorous evidence about which groups of children benefit and why.

This evaluation aims to extend this emerging evidence in relation to the potential efficacy of Reading Plus. The impact evaluation takes the form of a two-arm, parallel, cluster efficacy RCT, with whole primary schools randomised to intervention and control groups. This was integrated with an implementation and process evaluation (IPE), which explored the relationship between the delivery of the programme and any impact of Reading Plus on pupil outcomes (or not) within the impact evaluation. The IPE was grounded in the theory of change (Humphrey *et al.,* 2016).

Primary schools in the intervention arm of the trial were invited to use Reading Plus as part of their timetabled reading instruction. Within intervention schools, pupils entering Year 5 in September 2024 were eligible to use Reading Plus. The primary outcome for the study was a measure of reading attainment. Pupils in both intervention and control schools completed a reading assessment at the end of the intervention period in Summer Term 2025, respectively with Key Stage 1 reading assessments from the National Curriculum Tests used as a baseline measure. The effect of Reading Plus on reading attainment was calculated by computing the difference in average pupil reading attainment scores for the intervention and control arms of the trial. The study was conducted in England and was not restricted to any specific areas of the country.

The decision to employ a cluster efficacy RCT design was made after careful consideration of various other options. These options included:

1. A single year group individual pupil-level randomisation with school blocking.

2. A single year group class-level randomisation with school blocking.

3. A two-year group randomisation in which intact Year 5 and Year 6 groups are randomised to either treatment or control conditions blocked by school.

4. A cluster randomised design in which whole schools are randomised to intervention and control conditions.

Option 1 was considered impractical due to worries about the burden of restructuring classes. It was felt that imposing such a condition on schools for trial participation would likely deter many from taking part. Option 2 was rejected because it was anticipated that control class teachers might take compensatory measures if intervention and control groups were in the same school year. Additionally, participation in the study would be limited to schools with two or more classes per year group, thereby excluding smaller schools with single-class year groups or mixed-year group teaching. Option 3 was considered but ultimately dismissed in favour of Option 4. The decision to proceed with Option 4 was influenced by practical factors. Practically, concerns focused on the delivery of Reading Plus to Year 6 pupils, given the high stakes associated with Year 6 National Curriculum Tests. Randomisation occurring at the end of the Summer Term or the beginning of the Autumn Term would have imposed undue pressure on schools and teachers to adjust their teaching plans promptly. Therefore, focusing solely on Year 5 pupils was deemed more feasible. Additionally, informal discussions with teachers and headteachers indicated a preference for introducing Reading Plus in Year 5 rather than Year 6.

Alongside the impact evaluation, a complementary mixed-methods IPE was conducted. The IPE seeks to explain how the intervention was implemented in practice including any enablers and barriers which may have influenced the successful and unsuccessful elements of implementation within the specific contexts where Reading Plus was used. The IPE draws on a broad range of sources (interviews, observations, surveys, and user data collected from the Reading Plus platform). The findings constructed from the analysis of these data were integrated with the impact evaluation with the aim of understanding any potential impacts of the intervention, which aspects of the programme stakeholders felt had worked well, and where improvements might be made. Integration of IPE and impact evaluation data also permits investigation of any potential differences in impacts for particular subgroups of pupils, like FSM pupils or SEND pupils.

Intervention

Below we provide comprehensive details of the Reading Plus programme, structured around the dimensions of the Template for Intervention Description and Replication (TIDieR) framework (Hoffmann *et al.,* 2014).

Why: Rationale, theory, or goal of the elements essential to the programme

Reading Plus is an online (EdTech) adaptive silent reading programme designed to improve pupils' reading and language comprehension skills (Spichtig *et al.,* 2019). Its key features include: an emphasis on silent independent reading; a Guided Window (see below) to support eye movement control as pupils read the text on the screen (Radach and Kennedy, 2013); visual skills activities to support struggling readers as needed; explicit vocabulary instruction; and 'high-interest' texts for readers of all abilities which pupils self-select. Each of these aspects was available for teachers and pupils to use in the current trial. Together these elements are designed to support development of reading comprehension, silent reading fluency, and vocabulary knowledge. They are also designed to support readers to develop their self-efficacy with reading as well as motivation to read. Reading Plus aims to 'close the reading gap' for disadvantaged pupils, due to the adaptive nature of the technology, and the emphasis on fluency and vocabulary development, which are areas where socially disadvantaged children may require further input (e.g. Pace *et al.,* 2017; Martins *et al.*, 2021). The mechanisms proposed for achieving these outcomes within the logic model (the visual representation of the theory of change) are detailed under the 'Logic model' section below, after the nature of the intervention itself has been described.

Who: Recipients of this programme

Reading Plus is advertised as being suitable for children in Year 2 (aged six to seven years) and above (to beyond GCSE level). The current trial aims to measure the potential effect of Reading Plus on pupils in Year 5 (aged nine to ten years), when there is a strong focus on developing their reading comprehension skills in preparation for the end of Key Stage 2 reading assessment.

What: Physical or informational materials used in the programme

Reading Plus was delivered through an online digital reading platform developed in the US and then adapted for use in the UK. Teachers were provided with optional supplementary offline activities that they could use with pupils who might require further support. Year 5 teachers engaged in a programme of online training at the beginning of the intervention (see below). They were also provided with optional unlimited access to supplementary online training (ongoing, refresher, or training for new staff) and resources throughout the intervention period.

What: Procedures, activities, and/or processes used in the programme

Training for teachers

The intervention was delivered to all Year 5 pupils in Reading Plus (intervention) schools. Participating Year 5 teachers attended an introductory webinar, followed by three online training sessions delivered by a Daisy Education consultant allocated to each school (each lasting 45 minutes). The purpose of each aspect of the training was as follows:

- **Introductory webinar (60 minutes).** Provided a high-level overview of Reading Plus, covering the key features and benefits.

- **Initial training session (45 minutes).** Provided guidance on getting started with Reading Plus, including guidance on completing the baseline assessment.

- **Reports Training Session 1 (45 minutes).** Provided a review of the baseline assessment results focusing on identifying and supporting low-level readers.

- **Reports Training Session 2 (45 minutes).** Focused on pupil progress with an in-depth look at the skills gap analysis report and a recap of Reports Training Session 1.

This training, which was distributed over the first few weeks of schools engaging with Reading Plus (October to November) aimed to equip teachers with the knowledge they needed to deliver the programme, including explanation of the pedagogy underpinning it and how to use the assessment data generated to provide targeted support. Teachers were also encouraged to get in touch with their allocated Daisy Education reading consultant if they had any questions or required any additional support.

In-built assessment

At the beginning of the intervention, when pupils first logged onto the Reading Plus platform, they were assessed on their reading speed, comprehension, vocabulary, and motivation via the InSight reading assessment. While the InSight reading assessment was not used as a measure of attainment for the purposes of the evaluation itself, it was used by schools at the beginning of the intervention to allow the programme to provide texts at a suitable starting level to pupils. We therefore include information on its structure and reliability and design for context in terms of how the programme operates. InSight is a proprietary online reading assessment (created by the developers of Reading Plus), which is built into the platform.[1] Scores on this assessment have been shown to have strong correlations with a range of other normed assessments including the GRADE (r = .84) (Gehsmann *et al.,* 2017). A review of the InSight reading assessment found 'convincing evidence' of its classification accuracy, reliability, and validity (National Center on Intensive Intervention, 2019). This review of InSight also reported a bias analysis, stating that all items with large Differential Item Functioning were removed following field testing. There are norms published for the InSight reading assessment, generated within the US. There are no UK norms available, but the assessment within the UK version of Reading Plus is the same as the US version apart from anglicisation of spelling.

The InSight reading assessment has four components:

- **Motivation inventory.** Asks pupils to rate items (on a 6-point Likert scale) relating to their reading confidence, reading interest, and self-improvement belief (their belief that they are able to get better at reading).

- **Adaptive vocabulary assessment.** Presents a series of target words and asks pupils to identify a synonym from a choice of four words.

- **Adaptive comprehension assessment.** Pupils read passages of text and are asked literal and inferential questions about each text (in multiple choice format).

- **Measure of comprehension-based reading rate.** This is calculated based on how long it takes pupils to read the text on each screen and then correctly answering a question based on the text. It is defined as a comprehension-based reading rate because only reading rates from those screens where pupils understood the text (as evidenced by them correctly answering the question) are used to calculate the reading rate.

The InSight reading assessment takes around 45 minutes to complete (including time spent watching a short video at the beginning of each task to explain what pupils will need to do). A year-level reading proficiency score is created by comparing pupils' performance on the assessment with age-related expectations.

Pupils' scores on their initial InSight reading assessment influence which reading activities are then available to them on the platform. This aspect of the programme is based on the assumption that effective reading comprehension requires texts

[1] Further details about the InSight reading assessment and the broader Reading Plus programme see: **www.daisyeducationuk.com/media/Resources/Research%20docs/Daisy%20Education%20-%20Theoretical%20framework%20and%20foundational%20research.pdf** (Daisy Education, no date).

to be matched to pupils' developmental level along the dimensions of vocabulary, syntactic, and semantic complexity, required background knowledge, and length (Spichtig *et al.,* 2019). Teachers access a Class Screening Report which indicates which pupils are below, at, or above year-level expectations. The screening report also identifies pupils who may need additional support with reading comprehension/vocabulary (which is reported as a composite score) and/or reading fluency.

Formative assessment is built into the programme throughout and continues to influence the content that pupils engage with. Teachers can monitor pupils' live use of the platform through the teacher dashboard. The reports available to teachers allow them to identify gaps in proficiency/skills. They can then use these data to intervene with small group/one-on-one sessions using the supplementary lesson materials provided. These reports may also be potentially useful to the school/trust, as they provide assessment data to support tracking of pupils' reading progress, including monitoring the progress of disadvantaged pupils.

Guided Window

Within the online lessons, pupils self-select from the range of online texts that are available to them based on their current ability level. As they read the texts, they are supported by a (patented) 'Guided Window' on the screen. The 'Guided Window' presents the page through a filter such that its layout is generally discernible but only specific pieces of text are legible. The Guided Window is 25 characters wide. It moves left to right over the page displaying different pieces of text as it moves. The speed at which the Guided Window moves is determined by a pupil's reading rate. Actual letters and words can only be recognised and read when they appear within the Guided Window. This feature of the platform is designed to model effective reading behaviours, helping to build fluency and stamina. The pupil is not able to pause the Guided Window as it moves across the text in order to reread a section that they perhaps have not understood. However, if a pupil is not certain of the answer to a comprehension question once they have read the text, they can press the 'ReRead' button, which then allows them to look at the portion of text that relates to that specific question. The pupil can use up to two 'ReReads' per text selection.

The way that the system calculates this rate takes into account the fact that it is not just reading speed that is important but being able to understand what is being read as you read. After a child has read a text, they are asked some questions about the text's meaning. The questions are designed to both develop and monitor pupils' reading comprehension skills. The system is intended to gradually increase pupils' 'comprehension-based silent reading rate'—the speed with which they can read and effectively understand the text. Specifically, if a pupil scores 80% on the comprehension questions across two or three texts in a row, the speed of the Guided Window increases. Pupils are able to choose how many words per minute it will increase by three, five, or seven minutes. The Guided Window becomes optional when a pupil reaches the expected level of reading proficiency for their age. They are then able to focus on reading independently. At this stage the system continues to scaffold pupils' development of stamina and fluency by gradually increasing the length of the text segments that are displayed on the page.

Reading tasks

Pupils using Reading Plus will generally complete five reading tasks per week (plus one vocabulary task, see below), which are designed to support both silent reading fluency and comprehension development (although this can be adapted to suit individual pupil needs).

Reading comprehension tasks

Once pupils have finished reading a text, the system asks them ten comprehension questions. The pupils' performance on these questions influences how they progress through the programme. The questions are designed to gradually increase in complexity, scope, and depth. Pupils move onto the next level when they consistently achieve 80% or more on the questions. The comprehension questions are designed to develop three categories of skill:

- **Core.** These questions involve pupils recall of details, making inferences, drawing conclusions, determining main ideas and themes, summarising, paraphrasing, predicting, and analysing plots, characters, and cause and effect.

- **Craft.** Pupils are asked questions about the way that the language is crafted and the structure of the text. This includes questions about the author's use of language, examination of text structures, and the sequencing of ideas, and considering the author's purpose, point of view, use of persuasive devices, etc.

- **Critical.** Pupils are prompted to consider the arguments presented within a text, to consider the use of scaffolds within the text, for example, imagery, and to compare and contrast across texts.

The questions are presented in a range of formats designed to align with the kinds of question styles that pupils will be asked in the national assessments of reading at the end of Year 6. Pupils' responses to the questions allow their development across the subskills above to be monitored (teachers can pull down reports from the platform in relation to this). Teachers can use this data to assign specific lessons to pupils through the platform if they have specific gaps in their skills profile.

Vocabulary tasks

As pupils move through the programme, they are exposed to texts that are increasingly sophisticated in terms of vocabulary. They also engage with one vocabulary task per week (in addition to the five reading tasks). The vocabulary tasks provide explicit instruction 'based on a proprietary general academic vocabulary list that features a core vocabulary derived from 2,451 morphological word families' (Daisy Education, no date p. 9). The words within the vocabulary component of Reading Plus are grouped into 'year levels' according to age of acquisition, word frequency, morphological profile, and other relevant criteria (further details can be found in Hiebert *et al.*, 2019). Pupils' engagement with words within the vocabulary component of the programme depends on their performance. There are four types of vocabulary activities. All pupils engage with the first two activities for a given word. If they provide an incorrect answer to one or both of these, they then move on to the second two activities. If pupils answer the first two questions correctly, it is assumed that the pupil understands the meaning of the word in context, and no further teaching is provided for that word.

The four vocabulary activities are:

- **Instant recognition.** Pupils are shown a target word and are asked to choose the word or phrase that most closely aligns with its meaning.

- **Word in context.** Pupils judge which sentences correctly use the target word. 'Hint sentences' are available as needed.

- **Teaching page.** Pupils are provided with explanations of word meaning, examples of the word being used in sentences, and an introduction to the morphological family that the word belongs to.

- **Sentence completion.** Pupils complete a sentence using the correct form of the target word with the morphological family displayed for support.

<u>Choice of texts and gamification</u>

The texts available to pupils within the Reading Plus platform are selected to be of 'high interest', i.e. likely to be of interest to pupils within that age range, while also being pitched at an appropriate level in terms of vocabulary, text complexity, etc. Reading Plus aims to achieve this by drawing upon an extensive range of fiction and non-fiction texts, which have been selected to cover a broad range of attainment levels while remaining engaging and age-appropriate. After a pupil finishes reading a text, they are asked to rate how much they enjoyed it. The texts available for pupils to read are further tailored to pupils' interests by the provision of recommendations based on an algorithm which considers which texts pupils have chosen before and how highly they have rated them. A key design feature of Reading Plus is that pupils can select which text they read within a given lesson from a range of texts which are made available to them depending on their current reading performance. Reading Plus also aims to incentivise reading engagement through gamification features. Pupils have their own avatars, which they can design, and they earn points and 'combos' based on their performance on the activities. In Reading Plus, pupils earn a combo by scoring 80% or higher on two lessons in a row. Earning the required number of combos is necessary to progress to the next level, encouraging consistent performance and progress.

Pupils can keep an eye on their progress (e.g. their reading speed, number of words read so far in the programme) through the online dashboard.

Additional teacher-directed activities

The platform provides additional online visual skills activities, which teachers can allocate to weaker readers as necessary, based on their baseline assessment data. There are two types of visual skills tasks:

- **Scan.** Pupils' eyes are guided across lines of 'text' via the moving window, where all the letters have been replaced with circles. Every time the pupil sees a circle with a break in it (a Landolt ring), they press the space bar. The speed of the task increases as pupils' performance improves. The task is designed to develop the same skills relating to visual discrimination, attention, and tracking that are used when reading, but with the additional cognitive load associated with decoding and interpreting meaning removed (Radach and Kennedy, 2013; Radach and Spichtig, 2013).

- **Flash.** Trigrams (three-letter strings which are present within commonly occurring words) are flashed on the screen to the left or right of a central plus sign (+). The pupil is then asked to type the letters that they just saw in order, for example, 'igh'. This is designed to support pupils automatic recall of these common letter strings, which in turn is claimed to support more efficient reading.

To address pupils' skills gaps, Reading Plus provides teachers with supplementary lesson plans and skills worksheets to use outside of the programme in a one-on-one or small group setting. The Skills Summary Report accessed through the teacher dashboard groups pupils who are struggling with the same comprehension subskill (e.g. inference). Each lesson plan includes a fully scripted, ready-to-use guide for a 25- to 30-minute session. Printable worksheets explain a specific comprehension skill with examples from real texts. Pupils then apply these skills through independent practice activities to solidify their understanding.

Who: Programme providers/implementers

The training sessions were delivered by Reading Plus reading consultants, who were part of the delivery team at Daisy Education. The adaptation of the US version of Reading Plus to create the UK version was conducted by The Reading Plus Curriculum and Content team, in conjunction with Daisy Education (Reading Solutions UK at the time) Content and reporting were adapted for the UK market.

How and where: Mode and location of delivery

The intervention took place mainly on the digital platform, accessed by pupils within a classroom setting. In addition, as mentioned above, teachers also had the option of completing supplementary offline activities with pupils who required additional support, and some schools encouraged pupils to also access the Reading Plus programme at home (optional). However, the offline activities are not a core aspect of the programme.

When and how much: Duration and dosage of the programme

Year 5 teachers in intervention schools were instructed to deliver Reading Plus to the whole class for at least 90 minutes a week over a minimum of two sessions, for example, two 45-minute sessions or three 30-minute sessions per week for the duration of the intervention period (October 2024 to May 2025). Note that while some of the follow-up training sessions extended into November 2024, teachers were free to begin using Reading Plus from October 2024. As standard, pupils were allocated five reading and one vocabulary tasks per week to be completed within 90 minutes of scheduled Reading Plus time, but teachers were able to reallocate the weekly online tasks for pupils who needed additional support with a particular aspect. For example, a pupil who needed support with vocabulary could be assigned three reading and five vocabulary tasks. Pupils who struggled with fluency could be assigned 'visual skills' tasks to train their eyes to read more efficiently and accurately. The pupil could then be allocated more reading tasks following improvements in vocabulary or fluency. Reading Plus was designed to supplement the school's existing reading strategy rather than replace all reading activities. It was suggested to schools that Reading Plus could replace some weekly guided reading lessons (or similar reading activities) due to its focus on silent, independent reading, though this decision was to be made by the school, depending on their needs. Schools had the option of continuing to use Reading Plus for the rest of the academic year if they wished (after the end of the intervention period which was May 2025).

Tailoring: Adaptation of the programme

Reading Plus is inherently designed to be tailored to the current reading attainment of pupils, through continuous formative assessment, which informs: the texts that pupils engage with; the presence and speed of the Guided Window; and the level of difficulty of the reading comprehension and vocabulary questions. The visual skills activities and offline supplementary activities can also be used to further adapt instruction according to pupils' needs. As will be explored in the IPE, some teachers made additional adaptations, for example, in terms of whether pupils completed the programme independently or with a supporting adult.

How well (planned): Strategies to maximise effective implementation

The delivery team monitored use of the Reading Plus platform and checked in with schools if they noticed that pupils were not using the platform as frequently as expected. This was done to promote adherence to the programme and to provide support in relation to any challenges to implementation that may have been encountered.

The logic model

The logic model within Figure 1 (below) lays out the theoretical relationships between elements of the intervention and the pupil outcomes that were measured in the impact evaluation.

Reading Plus is primarily designed to develop children's silent reading fluency, reading comprehension, and vocabulary skills. The emphasis on regular independent reading practice is predicted to improve reading fluency (Allington, 2014). In addition, the Guided Window is designed to support fluency and stamina by guiding the pupil's eyes across the text on the screen at a speed that is adapted to their current proficiency. The Guided Window is designed to focus the pupil's visual attention so that they can effectively keep track of where they are up to on the page (cf. the traditional method of asking pupils to follow along the page with their finger). By focusing the pupils' eyes on one small section of text at a time, the Guided Window aims to support sequential reading of the words on the screen, which in turn, supports fluent reading. It aims to minimise obstacles that emergent readers can face, such as frequent rereading of words/phrases (because the reader has lost their place) and decoding words that are already familiar. While some back-and-forth eye-movements have been found to be a normal part of the reading process in skilled readers, in emergent readers too many regressions (times when the reader moves their eyes backward) can make the reading process inefficient (Spichtig *et al.,* 2016). Similarly, inefficient reading is also associated with a large number of fixations (eye stops—the number of times that the eyes rest on a particular word) and a smaller perceptual span (the number of letters a reader can perceive and process during a fixation). In other words, efficient readers, do not move their eyes backwards as often when reading, their eyes do not pause on a particular word/section of text as often, and when they do, they are able to process more of the text at once (Spichtig *et al.,* 2016). In a small-scale US trial, the Reading Plus programme led to significant reductions in fixations ('eye stops' when reading a particular word) and regressions (going back to 'refixate' on a word) (Spichtig *et al.,* 2019). The Guided Window is designed to align with natural reading behaviours. As stated within the Reading Plus 'Theoretical Framework and Foundational Research' document (Daisy Education, no date, p. 3):

> *...it accommodates the right-oriented perceptual span asymmetry of readers of English (MConkie & Rayner, 1975; Rayner, 1986), as well as typical saccade spans, which commonly average eight to ten characters during silent reading, and over 90 percent of regressive saccades (Rayner, 1998; Vitu & McConkie, 2000).*

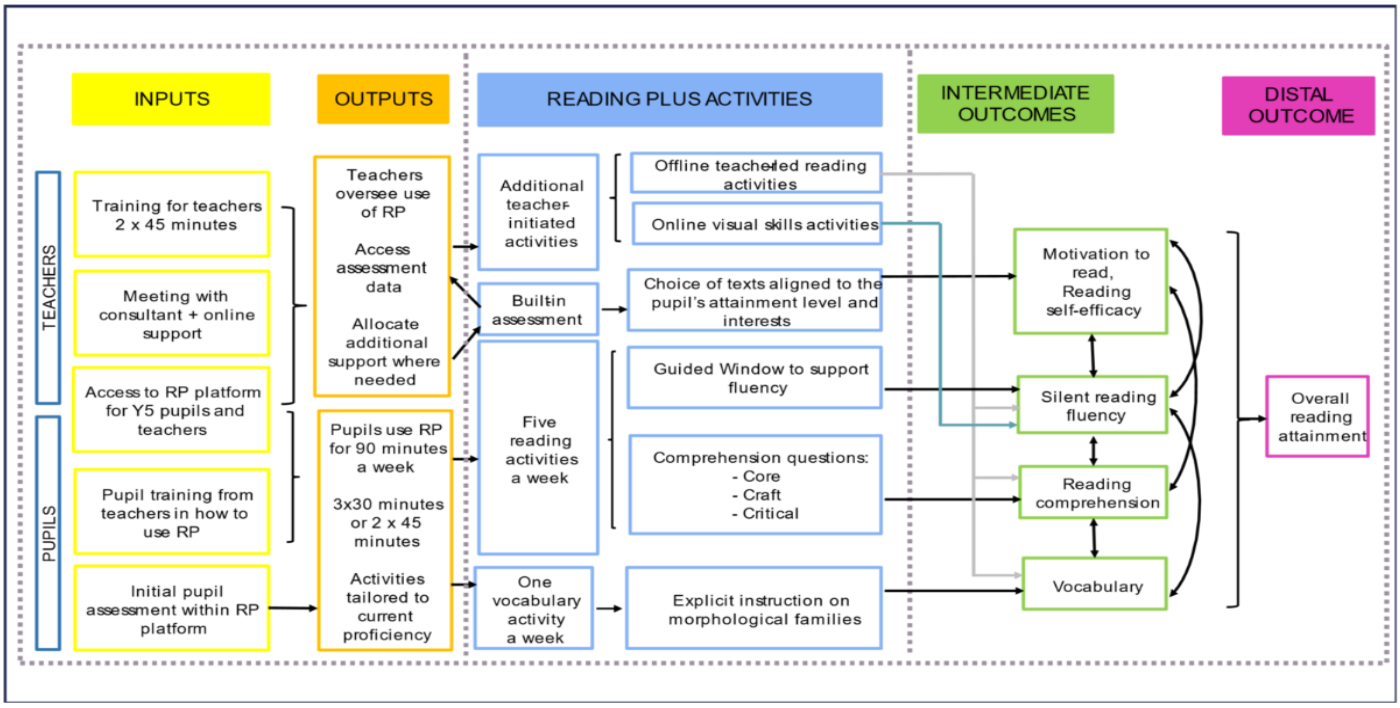
The adaptive nature of the Guided Window increases the rate at which it moves gradually to help pupils incrementally improve their stamina and fluency levels. Previous studies have provided promising evidence of the potential for use of the Guided Window to accelerate reading achievement (Rasinski *et al.,* 2011; Reutzel *et al.,* 2012). A core assumption of the logic model is that by gently ramping up pupils' fluency, the programme supports pupils to focus more on reading for meaning (e.g. see Paige *et al.,* 2014). In addition, the visual skills tasks, aim to support the development of visual skills, which Samuels *et al.* (2015) suggest play an important role in the process of efficiently reading written text. And the supplementary offline tasks provide an additional resource for teachers, used to further tailor the programme to the needs of struggling readers.

Fluency is a foundational skill that is needed for pupils to become skilled readers (e.g. Ehri, 1997; Breadmore *et al.,* 2019) as it supports pupils to focus on reading for meaning, allowing them to develop their proficiency in reading comprehension (Paige *et al.,* 2014). The association between fluency and reading comprehension becomes increasingly important as pupils reach the stage where they are confident at decoding print (Language and Reading Consortium, 2015), and direct teaching of fluency has been shown to drive improvements in reading attainment (e.g. Klaudia and Guthrie, 2008). Reading Plus is designed to be used with children who have mastered the basics of decoding to support them with the transition from 'learning to read' to 'reading to learn' (Spichtig *et al.,* 2019). Reading Plus also targets reading comprehension directly by asking pupils to answer a series of questions at the end of each text and providing feedback. These questions provide a scaffold to support pupils to engaging meaningfully with the text. Pupils are encouraged to read for meaning as they know that they will need to exceed the reading comprehension performance threshold (80% correct) in order to work towards a 'combo' and to progress through the levels of the programme. Pupils are also scaffolded to engage with the text closely through the 'Reread' function which directs them to the relevant part of the text if they are unsure about the answer to the question.

Reading Plus is designed to promote vocabulary development through activities which aim to teach the meanings of words that pupils will encounter in the non-fiction and fiction texts that they engage. Vocabulary development, including acquisition of academic vocabulary, is a crucial supporting factor for the development of reading comprehension (Quinn *et al.,* 2015) and learning across the curriculum more broadly (Schuth *et al.,* 2017). The vocabulary tasks are designed to draw pupils' attention to high-utility root words and their different inflectional forms (e.g. use, useful, useless). In this way the programme is designed to show children how 'a root word can have multiple forms and shades of meaning' (Daisy Education, no date, p. 7). In the reading comprehension component of the programme (where pupils answer questions about texts) they are provided with opportunities to generalise this knowledge to additional morphological forms (e.g. overused, reusable, etc). The focus on 'high utility morphological word families'—word families that pupils are likely to encounter frequently when reading age-appropriate fiction/non-fiction, and/or when learning across the curriculum—aims to support pupils' in inferring the meaning of unfamiliar words from their existing knowledge of words with a shared root (Bowers *et al.,* 2010). Furthermore, the logic model predicts that pupils' cross-curricular knowledge will be developed by engaging with a diverse range of non-fiction texts, allowing them to better access the broader curriculum (Stopforth and Gayle, 2022), although this prediction relies on the assumption that pupils will choose a range of non-fiction texts when using Reading Plus.

The adaptive nature of Reading Plus is designed to support pupils to read at an appropriate pace and to provide them with texts and activities that are pitched at an appropriate level for their current attainment. In this way the programme is designed to provide adaptive scaffolding for pupils' reading development, which may be particularly important for struggling readers, including pupils experiencing social disadvantage, who are more likely to experience difficulties with reading (e.g. Jehangir *et al.,* 2015). By tailoring the programme to pupils' current skill levels, Reading Plus aims to gradually build pupils' reading self-efficacy, and also their motivation to read: pupils are less likely to feel motivated to read if it feels too difficult (e.g., Mehigan, 2020). Reading Plus also aims to promote motivation through 'high-interest' texts, gamification features, and instant feedback. Prior research has highlighted the importance of learners having access to a wide range of high-quality texts (e.g. Cremin *et al.,* 2022) and having have some autonomy over which texts they read to promote motivation to read (e.g. Guthrie and Klauda, 2014). The logic model predicts, therefore, that teachers using Reading Plus will find that their classes are generally more engaged and motivated during reading lessons.

Figure 1: Logic model



RP=Reading Plus.

In summary, the logic model for Reading Plus suggests that by simultaneously working to improve reading fluency, comprehension, vocabulary, motivation to read, and reading self-efficacy, Reading Plus will improve pupils' overall reading proficiency. As identified in the rationale earlier, the logic model predicts that the programme will help 'close the reading gap' for disadvantaged pupils, due to the adaptive nature of the technology, and the emphasis on fluency and vocabulary development, which are areas where socially disadvantaged children may require further input (e.g. Pace *et al.,* 2017; Martins *et al.,* 2021). By becoming more confident and experienced readers, pupils are also expected to develop their content knowledge and access to the broader curriculum.

Evaluation objectives

The objective of the evaluation was to answer the following research questions (RQs).

Impact evaluation questions

Primary question:

> RQ1: What is the difference in the average score for reading attainment among Year 5 pupils in schools allocated to receive Reading Plus, compared to Year 5 pupils in schools allocated to control and exposed to business as usual conditions?

Secondary questions:

> RQ2: What is the difference in the average score for silent reading fluency among Year 5 pupils in schools allocated to receive Reading Plus, compared to Year 5 pupils in control schools exposed to business as usual conditions?
>
> RQ3: What is the difference in the average score for vocabulary among Year 5 pupils in schools allocated to receive Reading Plus, compared to Year 5 pupils in control schools exposed to business as usual conditions?
>
> RQ4: What is the difference in the average score for reading comprehension among Year 5 pupils in schools allocated to receive Reading Plus, compared to Year 5 pupils in control schools exposed to business as usual conditions?
>
> RQ5: What is the difference in the average score for reading self-efficacy among Year 5 pupils in schools allocated to receive Reading Plus, compared to Year 5 pupils in control schools exposed to business as usual conditions?

RQ6: What is the difference in the average score for motivation to read among Year 5 pupils in schools allocated to receive Reading Plus, compared to Year 5 pupils in control schools exposed to business as usual conditions?

IPE questions

IPE RQ1: What reading practices/programmes/interventions are: a) Happening in control schools? b) Happening alongside Reading Plus in intervention schools? c) Being replaced by Reading Plus within intervention schools? Exploration of RQ1 will provide information about the extent to which practices in control/intervention schools were differentiated, which might help to explain any significant difference (or lack of difference) in attainment between the two groups.

IPE RQ2: To what extent was the intervention delivered as intended in relation to: a) How often pupils use the Reading Plus platform? b) The way in which additional visual skills activities are used to support struggling readers? c) How often and for what purposes teachers use the additional activities to support individuals/small groups? d) Use of data reported within Reading Plus by teachers to identify and address skills gaps? e) Optional use of Reading Plus at home by pupils?

IPE RQ3: What changes or adjustments, if any, were made to the programme during its implementation? a) Why were these adjustments made?

IPE RQ4: What are the barriers and facilitators to the implementation of Reading Plus? a) Which barriers and facilitators, if any, were specifically or disproportionately experienced by FSM-eligible pupils? b) SEND pupils? Exploration of IPE RQ4, together with IPE RQ2 and IPE RQ3 above, will provide information about the extent to which the intervention was delivered as intended and any facilitators/barriers affecting delivery. Again, this information will be helpful in explaining the potential impacts of Reading Plus, in particular any variance found across schools or across different pupil groups.

IPE RQ5: To what extent did the support available within the Reading Plus programme enable practitioners to deliver the programme effectively? Including: a) Initial Reading Plus training; b) Support from the reading consultant; c) Optional additional training; d) Access to the Resources Hub.

IPE RQ6: What impacts (if any) do headteachers, teachers, and pupils perceive Reading Plus to have on: a) Fluency? b) Comprehension? c) Vocabulary? d) Reading proficiency? e) Feelings about reading? f) Closing the 'reading gap'? g) Teacher workload? h) Teachers' understanding of how silent reading fluency impacts on fluency, stamina and comprehension?

IPE RQ7: To what extent is the number of texts completed by pupils within Reading Plus (dose) associated with reading attainment at endline (response)?

IPE RQ8: How does pupils' reading proficiency change over time as they engage with Reading Plus? a) How do trends over time vary by prior attainment, FSM, EAL, SEND, and gender?

The study protocol (Gellen *et al.,* 2025) and statistical analysis plan (SAP) (Morris and Gellen, 2025) can be found on the EEF website.[2]

Ethics and trial registration

Ethical approval was obtained through Manchester Metropolitan University Faculty of Health and Education Ethics Committee. The process for ethical approval included providing details about the project design, information about the ethical procedures that were adopted, and copies of participant information sheets, and consent/withdrawal forms.

[2] For the protocol (Gellen *et al.,* 2025) see: **https://d2tic4wvo1iusb.cloudfront.net/production/documents/projects/reading_plus_2024-25_trial_protocol_amended.pdf?v=1760871830**; for the SAP (Morris and Gellen, 2025) see: https://d2tic4wvo1iusb.cloudfront.net/production/documents/projects/reading_plus_-_trial_-_statistical_analysis_plan.pdf?v=1760871830

The school recruitment process is detailed as follows. The delivery team identified and approached schools, which met the selection criteria and collected initial data including the school name, address, telephone number, unique reference number (URN) Local Authority Establishment Number (LAESTAB), and the names and contact details of Year 4 teachers (2023/2024) and Year 5 teachers (2024/2025).

Schools were asked to sign a Memorandum of Understanding (MoU), which provided information about the project and its aims, potential benefits for participating schools, a timetable of activities, data protection issues, and responsibilities of all parties involved. In addition, they were required to sign a separate Data Sharing Acknowledgement, which outlined how personal data would be collected and shared between the delivery team, the evaluation team, and the school.

Schools then issued a withdrawal notice to all parents of pupils in Year 4. Parents were given two weeks to respond to this although they had the right to withdraw their child at any time. A video was shown to pupils by their Year 4 teachers before the parent information sheets went out, explaining the nature and purpose of the evaluation and making it clear that pupils did not have to take part and were free to withdraw at any time. A link to this video was also included in the parent information sheet so that parents could watch the video with their children if they wished.

Case study schools were approached (following randomisation to intervention/control and using stratified random selection, see section describing the IPE below), via an email from the Manchester Metropolitan University evaluation team to the Year 5 teachers at the selected schools. They were sent case study staff information sheets and consent forms. Once a case study school signed up, these documents were also shared with other participating staff: headteachers; other Year 5 teachers; and teaching assistants involved in the delivery of Reading Plus. The documentation was sent to teaching assistants as well as teachers so that they could also feedback on their involvement in Reading Plus in classes where teaching assistants provided support during the relevant lessons. Case study teachers sent home parent information sheets and consent forms, as well as child-friendly assent forms, that sought parental permission and pupil assent for pupils to be involved in the case study interviews. On the day of the interviews, the interviewer also read out the information on the assent form and invited pupils to confirm their assent to take part. Throughout, all case study participants were reminded that participation was optional and that they could withdraw as a case study school/participant at any time.

All recruitment documents are included in the 'Technical Notes' in Appendix E. This trial is registered at the Open Science Framework. The entry can be viewed at: https://osf.io/xwzqe.

Data protection

All data collected for the trial was treated with the strictest confidence and processed and stored in compliance with the General Data Protection Regulation (GDPR) and Data Protection Act 2018. Manchester Metropolitan University and Daisy Education were independent data controllers for the project. They made decisions about how and what personal data were used in accordance with the purposes set by the EEF. Fischer Family Trust (FFT) and AlphaPlus—subcontracted to support data collection from schools (see below)—were data processors. The EEF will become the data controller for the data once it is archived at the end of the project.

As public authorities conducting research and analysis in the public interest which has undergone ethical approval, Manchester Metropolitan University used the following lawful bases for the processing of:

- **Personal data.** 'Public Task', GDPR Article 6(1)(e) (GDPR, 2016).
- **Personal data defined as special category.** 'Research purposes in the public interest', GDPR Article 9(2)(j) (GDPR, 2016).

We did not collect any personal data defined as special category in this project although we did collect SEND (Education, Health and Care Plan [EHCP] or Support plan), FSM, and EAL status for pupils which is considered by the Department for Education (DfE) to be sensitive data.

Full details of the data collection procedures are set out in the 'Methods' section below. The project involved collecting reading assessments from pupils, survey and interview data from headteachers and teachers, observations of Reading Plus training and lessons, and interviews with teaching assistants and pupils. Data were processed by Manchester Metropolitan University to ascertain the impact of Reading Plus on pupil outcomes, and to make judgements about compliance and

fidelity, as well as stakeholders' experiences of Reading Plus. Pupils were asked to complete the Feelings About Reading (FAR) questionnaire before and after the intervention, and the New Progress in Reading Assessment (PiRA) Reading Test after the intervention. At the beginning of the trial Key Stage 1 national assessment scores for reading were collected from all schools via FFT Education and were used as a baseline measure of pupil reading attainment. In cases where there was substantial missing data, pupils' Key Stage 1 2022 assessment data (reading, writing, and mathematics) was accessed from the National Pupil Database (NPD) (Department for Education, 2025). A sample of pupils completed one-on-one assessments of silent reading fluency, vocabulary, and reading comprehension. The Kaufman Test of Educational Achievement Third Edition (KTEA™-3) assessments of silent reading fluency, reading comprehension, and vocabulary were administered by AlphaPlus (data collection team). The FAR questionnaire and the New PiRA were administered online by teachers, overseen by AlphaPlus. AlphaPlus liaised with schools, sending out detailed guidance for teachers on how to administer the measures. For intervention schools the evaluation team also collected data from the Reading Plus platform, for example, how often the children used Reading Plus and their scores on the reading activities that they engaged with.

All assessment data were accessed and analysed by the evaluation team (Manchester Metropolitan University). For the purpose of this project, some personal data (staff names/contact details) were shared between Manchester Metropolitan University and Daisy Education. Manchester Metropolitan University also accessed the NPD as part of the evaluation to access pupils' Key Stage 1 assessment data (Department for Education, 2025). National Pupil Database data were accessed and analysed within the Office for National Statistics Secure Research Service (SRS). This work was undertaken in the Office for National Statistics Secure Research Service using data from the Office for National Statistics and other data owners and does not imply the endorsement of the Office for National Statistics or other data owners. For the purposes of archiving and further research, pupil-level impact data (e.g. reading test results) and pupils' personal data (e.g. name, date of birth, UPN) will be shared with the EEF's data archive manager (FFT).

At the end of the project, FFT will match pupil records with the Pupil Matching Reference (PMR), an identifier that is stored in the NPD, and meaningless to anyone outside the DfE. All other personal data that can identify an individual pupil will be deleted prior to archiving. The remaining data will then be archived in the Office for National Statistics (ONS) Secure Research Service (SRS). After anonymisation, data may be shared with: the delivery team and/or the evaluation team for further research; with Durham University, the EEF designated archive evaluator; and with other research teams, on application to the DfE. Further matching to NPD and other administrative data may take place during subsequent research. The EEF's privacy notice for the archive can be found here: **https://educationendowmentfoundation.org.uk/privacy-notices/privacy-notice-for-the-eef-data-archive**.

Pupil and staff data were treated with the strictest confidence, given a unique code immediately after collection and prior to analysis to reduce risk and stored securely in line with the GDPR (2016) and the Data Protection Act 2018. A Data Sharing Agreement was put in place. This document clearly outlined the data sharing and protection responsibilities of the five parties involved (Manchester Metropolitan University, Daisy Education, FFT, AlphaPlus, and the EEF).

No names (pupil, staff, school) are included in this report (or will be included in future publications arising from the research). To ensure that the processing of personal data relating to the pupils was fair, lawful, and transparent, a parent information sheet, parental withdrawal form, and a privacy notice for parents, agreed with the Manchester Metropolitan University's data protection officer, were shared with parents. Parents were informed that they were free to withdraw their child from the evaluation and/or ask to have any or their child's information deleted until 31 August 2025, without giving a reason. Schools were asked to keep a record of children whose parents had 'withdrawn' to ensure that they were not included in any evaluation activities (including any related data sharing). Withdrawn pupils were involved in the intervention itself, but not the evaluation (testing, etc.). Similarly, schools were informed that they could withdraw from the evaluation at any time, without giving a reason and that we would be able to delete the school's data where possible. Staff information sheets and privacy notices were shared with all participating staff.

Any information collected was used for research purposes only and no information that might identify individuals was used for any other purpose. Any personal data collected and held by Manchester Metropolitan University, Daisy Education, FFT, and AlphaPlus will be destroyed in accordance with the GDPR (2016) when it is no longer required, and no later than 31 July 2026.

Project team

The evaluation team (Manchester Metropolitan University) comprised of:

- **Professor Stephen Morris, Professor of Evaluation, Policy and Evaluation Research Unit.** Specialises in experimental/quasi-experimental evaluation designs, joint principal investigator, and responsible for the design and management of the impact evaluation.

- **Dr Steph Ainsworth, Reader in Education, School of Education.** Expertise in primary English teaching and the assessment of reading and early language skills, joint principal investigator, and responsible for selection of the assessment measures and management of the baseline and endline testing as well as leading the IPE design and work.

- **Professor Cathy Lewin, Professor of Education, School of Education.** Expertise in mixed-method IPE evaluations of school-based EdTech interventions, co-investigator, and responsible for supporting the IPE.

- **Karolina Krzemieniewska-Nandwani, Senior Research Associate, Policy and Evaluation Research Unit.** Expertise in trial design, data management, and statistical analysis.

- **Sandor Gellen, Senior Research Associate, Policy and Evaluation Research Unit.** Expertise in trial design, data design, and statistical analysis.

- **Dr Kate Wicker, Research Associate, School of Education.** Expertise in mixed-methods evaluation and research, responsible for coordinating the case studies, and supporting the IPE.

- **Dr Helen Lawson, Research Fellow, School of Education.** Expertise in mixed-methods evaluation and research, responsible for coordination of final report writing, and supporting the IPE.

The delivery team (Daisy Education) comprised of:

- **Ian Fitzpatrick, Managing Director, Daisy Education.** Over 16 years of experience in educational technology, oversaw trial delivery, ensuring protocol adherence and supporting schools in implementing DreamBox Reading Plus with fidelity.

- **Briony Cragg, Head of Marketing, Daisy Education.** Led recruitment and communications for the trial and supported delivery and testing, ensuring schools were informed and engaged throughout.

- **Sarah Cuthbertson, Head of Customer Success, Daisy Education.** Oversaw trial delivery and led the implementation of trial and endline testing, ensuring rigorous adherence to processes.

The data collection teams (AlphaPlus and FFT Education) comprised of:

- **Andy Lewis, Project Director, AlphaPlus.** Responsible for overseeing baseline/endline data collection (FAR, PiRA, KTEA-3).
- **Serena Idris, Project Manager, AlphaPlus.** Responsible for day-to-day management of baseline/endline data collection (FAR, PiRA, KTEA-3).
- **Charlotte Stokes, Junior Project Manager, AlphaPlus.** Supporting with school liaison during baseline/endline data collection (FAR, PiRA, KTEA-3).
- **Thea Needs, Project Co-ordinator, FFT Education.** Responsible for enumeration of the recruited schools.

Methods

Trial design

This trial is a two-armed cluster efficacy RCT. Whole schools were randomised one-on-one to either intervention or control conditions. Pupils entering Year 5 in September 2024 in schools allocated to the intervention group had the opportunity to use Reading Plus, while those in schools allocated to control had no opportunity to do so, but were instead exposed to 'business as usual' support for reading.

The primary outcome is reading attainment. Reading attainment is measured through the unstandardised score achieved by pupils in the New PiRA Year 5 Summer Term Test sat by the sample at endline in Summer Term 2025. The test was administered to pupils online, in school, overseen by teachers and classroom assistants. In the primary 'adjusted' analysis,

a baseline measure of reading attainment was used as a covariate. This baseline measure was the pupils' Key Stage 1 reading assessment in the form of the teacher assessed level of attainment obtained from the NPD (Department for Education, 2025).

Secondary pupil outcomes were:

- reading comprehension, silent reading fluency and reading vocabulary from KTEA-3; and
- reading self-efficacy measure and reading motivation subscale from the FAR questionnaire.

The three secondary outcomes from the KTEA-3 were obtained through administering a one-on-one assessment with a sample of ten pupils selected at random from each school prior to randomisation. The assessments were conducted by independent test administrators in schools.

The effects of Reading Plus on the primary outcome are estimated for two subgroups of pupils:

- ever-FSM (using the variable EVERFSM_6); and
- designated SEND (binary measure).

Claims as to the effectiveness or otherwise of Reading Plus are made only in relation to the primary outcome analysis and as a result multiplicity adjustments to statistical tests are not required. The analysis of secondary outcomes and subgroup tests are treated as exploratory.

Table 3 sets out the key features of the trial.

Table 3: Trial design

Trial design, including number of arms		Two-armed, cluster efficacy RCT
Unit of randomisation		School
Stratification variable (s) (if applicable)		Not applicable
Primary outcome	Variable	Reading attainment
	Measure (instrument, scale, source)	Reading attainment raw score, 0–45, New PiRA Year 5 Summer Term Test
Secondary outcome(s)	Variable(s)	Reading comprehension Silent reading fluency Reading vocabulary Reading self-efficacy Reading motivation
	Measure(s) (instrument, scale, source)	Reading comprehension subscale, KTEA-3, 0–105 Silent reading fluency subscale, KTEA-3, 0–110 Reading vocabulary subscale, KTEA-3, 0–58 Reading self-efficacy subscale, 20–140, FAR questionnaire Reading motivation subscale, 10–70, FAR questionnaire
Baseline for primary outcome	Variable	Reading attainment
	Measure (instrument, scale, source)	Key Stage 1 teacher assessments in reading (categorical) from the NPD

Baseline for secondary outcome(s)	Variable	Reading attainment Reading self-efficacy Reading motivation
	Measure (instrument, scale, source)	Key Stage 1 teacher assessments in reading (categorical), from the NPD Reading self-efficacy subscale, 20–140, FAR questionnaire Reading motivation subscale, 10-70, FAR questionnaire

Participant selection

Schools

School eligibility criteria had both 'hard' and 'soft' elements. The hard criteria refer to those criteria that could not be comprised, whereas soft criteria were those that could be comprised in circumstances where difficulties were experienced in meeting the school recruitment target.

To be eligible to participate in the trial schools must have been:

- State-maintained primary, junior, middle, or all through school in England.
- Not have held a Key Stage 2 Reading Plus programme licence in the 12 months prior to delivery (academic year 2023/2024).
- Not involved in a trial funded by the EEF targeting pupils and teachers in Year 5 (in 2024/2025).
- Able to provide one-on-one access to a device (PC, laptop, tablet, etc.) so that a whole class of pupils could participate in Reading Plus and complete online assessments (reading test, questionnaire) at the end of the intervention (June/July 2025).
- Able to timetable whole-class use of Reading Plus for 90 minutes per week, broken down as three 30-minute sessions or two 45-minute sessions.

In addition, schools were given a preference for inclusion in the trial where they did not have mixed-age group classes for literacy instruction as the trial focused on Year 5 pupils. If schools did have mixed-age group classes and remained interested in participating, they were added to a recruitment waitlist. There was also a preference for schools not participating in other trials by the EEF in 2024/2025. This was due to concerns that participating in more than one trial might place an excessive burden on schools. If school were participating in another trial by the EEF and remained interested in the project, the possibility was held open for them to be added to the recruitment waitlist.
Schools that met the eligibility criteria and agreed to take part in the trial were asked to sign an MoU which set out the obligations of each stakeholder to the trial as well as the conditions schools were required to meet.

Pupils

All Year 4 pupils enrolled at the time of school recruitment and due to enter Year 5 in September 2024 were included in the study sample. Once the MoU was signed, schools circulated withdrawal letters and information sheets to parents. Parents were given an initial window of two weeks to withdraw their child from the study. During this period and ongoing for these pupils, it was the responsibility of the school to maintain a record of pupils that withdrew and ensure that they did not release any personal information regarding these pupils to FFT, Manchester Metropolitan University, or AlphaPlus. If a pupil withdrew after the two-week period, the school needed to notify Manchester Metropolitan University using a secure link to ensure that any existing data held on pupils that wished to withdraw was destroyed. These pupils, together with those who joined schools after baseline assessment were not included in the evaluation. While pupils entering schools in the intervention group participated in the intervention, they did not complete assessments at endline. Parents retained the right to withdraw their child from the evaluation at any point during the study.

Recruitment

Recruitment of schools was carried out by Daisy Education, the delivery partner in this project, over the period February to June 2024.

The process for recruiting schools is detailed here. Daisy Education identified and approached schools that met the selection criteria. Initial data, including school name, address, telephone number, URN, and the names and contact details of Year 5 teachers in 2024/2025, were collected and passed to Manchester Metropolitan University. Schools were invited to sign the MoU and to sign a separate Data Sharing Agreement, detailing how personal data would be collected and shared among Daisy Education, the evaluation team, and the school. The MoU stated that intervention schools would be charged £500 plus VAT towards the costs of the training and access to the platform, and that control schools would receive £750 if the school complies with all data collection requirements.

As soon as the two-week opt-out period had passed, FFT collected pupil-level information from all pupils expected to enter Year 5 in September 2024 excluding those pupils that had withdrawn. Once records were collected for each eligible pupil in a school, they were verified and checked for completeness and passed to Manchester Metropolitan University, who then initiated with AlphaPlus the collection of baseline measures and conducted sampling for endline testing.

Outcome measures

Baseline measures

The Key Stage 1 teacher assessment in reading (categorical) served as the baseline measure for reading attainment (primary analysis), as well as for silent reading fluency, comprehension, and vocabulary. These data were obtained from the DfE's NPD (Department for Education, 2025). Sensitivity analyses incorporated additional baseline covariates from the DfE's NPD: FSM eligibility; gender; SEND status; and EAL status.

Baseline measures for reading self-efficacy and reading motivation were collected before the start of the trial delivery.

Primary outcome

The primary outcome was the New PiRA Year 5 Summer Term Test,[3] which provides a measure of reading attainment. The New PiRA, published by Hachette Learning, is a standardised assessment available for purchase by schools and Multi-Academy Trusts (MATs) (Hachette Learning, no date). It is commonly used by schools for benchmarking performance and tracking progress against national averages in reading. New PiRA tests are UK-standardised, have been included in the EEF's Attainment Measures Database,[4] demonstrate high-test reliability (Cronbach's alpha above 0.9), face validity (aligned with national curriculum guidelines), and criterion validity, with a strong relationship with national test scores (Pearson coefficient 0.64–0.79 for Key Stage 2). New PiRA can be administered to an entire class, either online or on paper. It is designed around termly expectations, which in turn are structured around the following content domains for Key Stage 2:

- **Vocabulary.** Explain the meaning of words in context (8 points[5]).
- **Comprehension.** Retrieve and record information/identify key details (12 points).
- **Summary.** Summarise main ideas from the text (5 points).
- **Inference.** Make inferences from the text, explaining and justifying with evidence from the text (12 points).
- **Prediction.** Predict what might happen (2 points).
- **Structure.** Identify/explain how content is related and contributes to meaning (2 points).
- **Impact.** Identify/explain how meaning is enhanced through choice of words and phrases (2 points).
- **Comparison.** Make comparisons within the text (2 points).

As specified in the logic model, Reading Plus is designed to support pupils in developing their fluency, reading comprehension, vocabulary knowledge, and overall reading attainment. It aims to support fluency by providing pupils with regular opportunities to read independently supported by a Guided Window (until the pupil reaches a level where this is no longer needed), whose pace is aligned with the pupil's current reading speed (Spichtig *et al.,* 2019).

Reading comprehension is supported through a quiz at the end of each reading session and pupils develop their vocabulary knowledge through regular vocabulary activities. The New PiRA is designed to be sensitive to each of these competencies. The content domains, around which New PiRA is structured, include vocabulary and a range of reading comprehension skills. While New PiRA does not measure fluency directly, given that it is a timed assessment, reading fluency is likely to influence performance. For example, children who are not yet fluent readers, may find it difficult to work through the test in time and their ability to answer the questions might be hampered by greater cognitive resource being needed to decode the text (Klauda and Guthrie, 2008).

---

[3] For more information, see: **www.hachettelearning.com/assessment/new-pira**

[4] See:https://educationendowmentfoundation.org.uk/projects-and-evaluation/evaluation/eef-outcome-measures-and-databases/attainment-measures-database/am-database

[5] Marks available for each content domain within the test.

In this trial, New PiRA Year 5 Summer Term Test was administered to the whole-class online at endline in a test window of around five weeks, beginning after half-term in May 2025. Four schools experienced technical difficulties with the online platform. Following unsuccessful attempts to resolve these issues, those schools were sent paper versions of the same test to complete instead. The New PiRA Year 5 Summer Term Tests were teacher administered with detailed guidance provided to teachers. Piloting was carried out at the beginning of the testing window to ensure that the guidance was sufficiently clear to ensure standardisation of administration. The piloting involved Year 5 pupils in two intervention schools completing the New PiRA Year 5 Summer Term Test and the FAR questionnaire under observation by a member of the evaluation team. This gave the team some insight into how the process worked in practice and enabled us to refine our guidance and communication to schools. The guidance highlighted to teachers that New PiRA needed to be completed in silence and that all pupils should be encouraged to attempt the test independently. In exceptional cases where teachers felt that a pupil would be unable to engage with the test at all, and therefore it would be unethical to expect them to complete it independently, teachers were told to contact the evaluation team. It would then be decided if it was appropriate for pupils to be excluded from sitting the assessment. Teachers were instructed that if any pupils were not clear about what they had to do, teachers may give additional explanation to help them understand the requirements of the test, but that they should not read any of the actual questions or provide help with individual words. This guidance was informed by our experiences of using the FAR questionnaire for the Peer-Assisted Learning Strategies-UK (PALS-UK) trial (Lewin *et al.,* 2024).

The New PiRA Year 5 Summer Test takes 45 minutes with a timer built into the digital platform so that the timer 'times out' after 45 minutes. A pupil could score a maximum of 45 marks and a minimum of 0 marks. The raw scores were used as the primary outcome measure of reading attainment. The New PiRA tests are marked automatically by the platform. For the schools who completed the New PiRA using paper tests, the papers were marked by the co-principal investigator who has substantial experience of marking this test from a previous trial by the EEF. Hatchette Learning (the test publishers) confirmed that the paper and online versions of the test contain the same questions in the same order and with the same scoring.

Pupils' Key Stage 1 teacher assessments in reading (categorical), collected from NPD were used as a baseline covariate for the primary outcome measure. Key Stage 1 teacher assessment categories were entered into the regression models as categorical variables using STATA factor variable notation (i.variable). Due to missing values in gender, SEND status, FSM status, and EAL status, all of which were initially collected directly from schools, these variables were also collected from NPD.

Issues faced in implementing the New PiRA Year 5 Summer Term Test

Early analysis of PiRA Year 5 Summer Term Test data, collected online, as part of this study, revealed some surprising findings. When we compared these results to results from PiRA Year 5 Summer Term Tests collected two years before as part of the PALS-UK efficacy study (Lewin, *et al.,* 2024) we noticed some appreciable differences in the distributions of the two sets of scores. Other than being collected two years apart, the only other difference between the two sets of data were that in this study the New PiRA Year 5 Summer Term Test at endline is collected online, whereas in the PALS-UK study the test was administered on paper. It appears possible that there are significant mode effects causing pupils to respondent differently depending on which form test they complete. Although four schools completed the assessment in paper format, these were distributed across both trial arms, reducing the risk that any mode effects systematically favour one group over the other.

Other possible explanations include the 'timing out' of online test administration after 45 minutes, the auto-assessment feature of online administration which could be stricter than a teacher assessment, or the possibility that pupils are more likely to accidentally skip pages when using the online version.

Figures 2 to 4 display the distributions of PiRA Summer Term Test scores by intervention and control groups for:

- **Year 5 endline tests for this study (online only).** There were 156 paper PiRA endline Summer Term tests excluded from this chart.

- Year 5 endline tests (paper only tests). From the PALS-UK efficacy study carried out by Lewin *et al.* (2024) .
- Year 4 baseline tests (online only tests). From the PALS-UK efficacy study carried out by Lewin *et al.* (2024).

The mass of test scores in the intervention and control group distributions in Figure 2 and Figure 4 (online test) lie more to the left compared to those in Figure 3 (paper test), where they lie more to the right. A distribution shifted to the left reflects lower test scores, whereas a distribution shifted to the right indicates higher scores.

Figure 2: Distribution of PiRA Year 5 Summer Term Test scores—online tests treatment (left) control (right)—this study

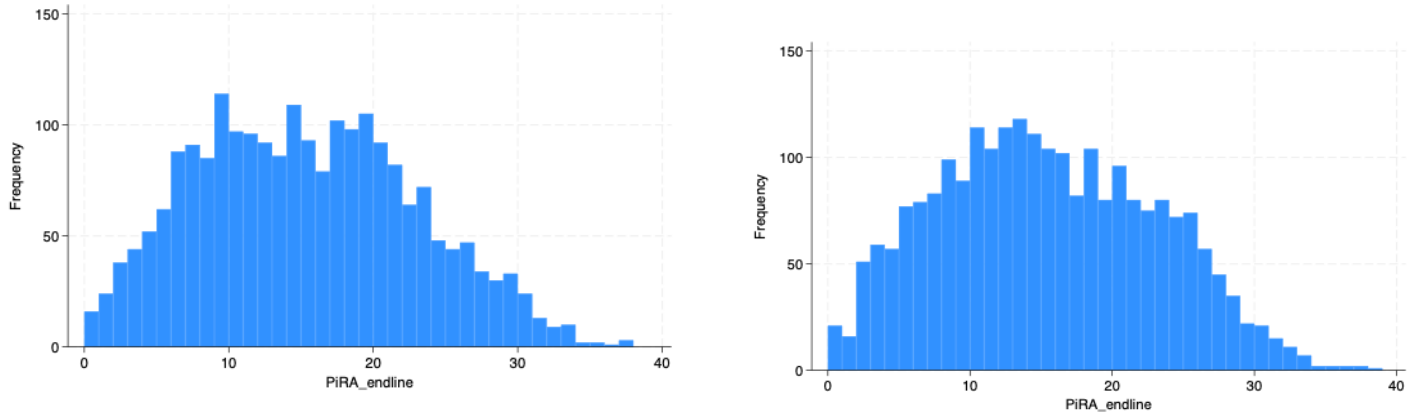


Figure 3: Distribution of PiRA Year 5 Summer Term Test scores—paper tests at endline treatment (left) and control (right)—PALS-UK efficacy study (Lewin *et al.,* 2024)

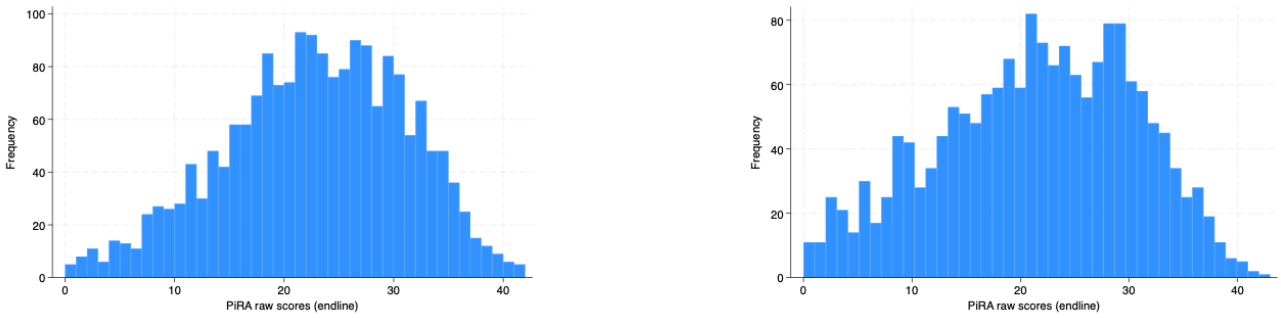


Figure 4: Distribution of PiRA Year 4 Summer Term Test scores—online tests at baseline treatment (left) and control (right)—PALS-UK efficacy study (Lewin *et al.,* 2024)

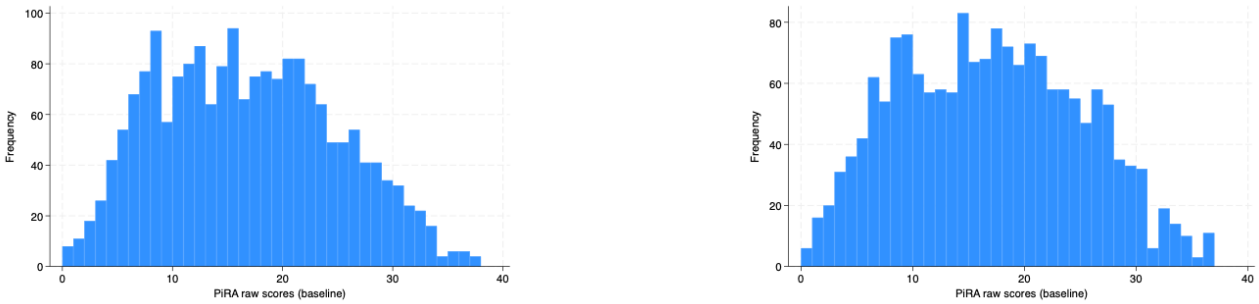


Table 4: Descriptive statistics from PiRA Summer Term Tests, Year 4 and Year 5, online and paper and pencil

	Mean	SD	Percentile points			N
			25th	50th	75th	
Reading Plus						
Online Year 5 summer endline test	14.89	7.59	9	14	20	4,544
PALS-UK						
Online Year 4 summer baseline test	16.36	8.07	10	16	22	3,628
Paper Year 5 summer endline test	21.91	8.56	16	22	29	3,628

Note: These estimates are calculated from the full samples in both studies. Around 156 paper questionnaires are omitted from the Reading Plus endline test sample.

The summary statistics in Table 4 show that the mean score obtained on the paper PiRA Year 5 Summer Term Test in the PALS-UK study was around 22 points compared to 14 points in the same online version of the test in this study. In this present study, 25% of the sample scored 9 or lower in the online test, whereas in the PALS-UK study's paper test a quarter of the study scored 16 points or lower. This clustering of very low scores in the online test implies that the resulting score profile is shifted downward, with a greater concentration of pupils in the lower score bands than would be expected from the paper-based profile.

Due to randomisation, unless the mode of test administration interacts in some way with intervention exposure, we would not expect this to cause bias, as both intervention and control groups are affected equally by the mode of test delivery. Nonetheless, these results are suggestive of significant mode effects in these tests which warrants further research.

Secondary outcomes

Silent reading fluency, reading comprehension, and reading vocabulary

Secondary outcome measures of silent reading fluency, reading comprehension, and reading vocabulary were collected using KTEA-3.[6]

KTEA-3 was selected as a reliable and valid measure (Breaux and Lichtenberger, 2016), which provides robust observations of three secondary outcomes of central interest within the logic model. A measure of silent reading fluency was important for this trial, given that Reading Plus is designed to support silent reading fluency rather than oral fluency, through regular, scaffolded silent reading. While, KTEA-3 has been normed based on a US sample, this was selected to be the most appropriate measure given that, to the authors' knowledge, there are no appropriate silent reading fluency measures that have been standardised with a UK sample. The KTEA-3 reading comprehension test also aligns well with the logic model given that the style of assessment is similar to the reading comprehension quizzes within the Reading Plus platform. The KTEA-3 reading vocabulary test was also deemed to be suitable, because it tests vocabulary in the context of reading in a similar way to the Reading Plus vocabulary activities. This is in contrast with commonly used UK measures of vocabulary, which are designed to measure vocabulary knowledge out of context from reading (i.e. using isolated words) e.g. the British Picture Vocabulary Scale (Dunn *et al.*, 2009).

The three KTEA-3 subtests took approximately 30 minutes to administer in total, although the time varied depending on the reading speed of the pupil and how many items they completed. For all three subscales, pupils started at the same place (as defined by their year group, e.g. Year 5), but progression through the tests (i.e. the number of items completed) varied according to attainment. The standard rules set out in the manual for reversal, discontinuation, and scoring rules were followed. For both the silent reading fluency and reading vocabulary tests, the minimum score was 0 and the maximum

[6] See: www.pearsonclinical.co.uk/store/ukassessments/en/kauffman/Kaufman-Test-of-Educational-Achievement-%7C-Third-Edition/p/P100009106.html

possible scores were 110 and 58, respectively. For these subtests the raw scores were used in the analysis. For the reading comprehension test, the minimum score was 0, and the maximum possible score varied depending on which set of items the pupil ultimately completed once the relevant basal (reversal) and discontinuation rules had been applied. The maximum possible scores for the reading comprehension subtest ranges from 20 to 30 (depending on the basal set that the pupil finishes on). The raw scores for the reading comprehension subset were converted into weighted scores (to account for the different difficulty levels of the sets administered) using the tables provided in the KTEA-3 manual—these then formed the secondary outcome measures of reading comprehension.

A sample of 15 pupils per school were selected at random prior to randomisation to complete the tests. Test administrators were instructed to conduct the KTEA-3 subtests with the first ten pupils on the list (or as many as they were able to test in the time available), where the list was ordered randomly. The remaining five pupils on the list served as a reserve pool; if any of the ten selected pupils were unavailable for testing on the day they were in school, the next available pupil on the list was selected.

The KTEA-3 measures were administered by experienced test administrators one-on-one, face-to-face in school. The test administrators were employed by AlphaPlus and trained by the evaluation team at Manchester Metropolitan University. They engaged with a full day of training on how to administer and score the tests. A member of the evaluation team, who has expertise in the administration of literacy assessments, piloted the KTEA-3 testing in the first school, and led the training (informed by the piloting). They also completed quality assurance, which consisted of listening to recordings of the administration of the KTEA-3 measures and checking the scoring for five pupils for each of the 21 administrators. Where any issues were identified with either administration or scoring, they were picked up quickly with the relevant test administrator. Further support/training was provided and further follow-up quality assurance checks were made as appropriate.

All test administrators were provided with training on working with pupils in schools, include safeguarding and data protection considerations. All administrators had prior experience of working and/or conducting assessments in schools (they had worked previously as teachers, Special Educational Needs Coordinators [SENCOs], or headteachers). All test administrators had completed a recent Disclosure and Barring Service (DBS) check[7] and were familiar with published guidance in relation to conducting research with children and young people. This guidance recommends that researchers should not be alone with children even if they have a DBS check. This new requirement by AlphaPlus when arranging visits to collect KTEA-3 data. AlphaPlus made suggestions to schools about how one-on-one testing might be managed in light of this guidance, for example, testing might take place in a separate room with a teaching assistant or teacher present (perhaps a teacher who is marking in the staff room, etc.) or in a corridor/office in view of other staff.

The KTEA-3 measures of silent reading fluency, vocabulary, and reading comprehension were conducted at endline only to contain costs, given that the test is expensive to conduct. The covariate used for these measures was the Key Stage 1 teacher reading assessment (within the NPD), see 'Primary outcome' section above.

Reading self-efficacy and reading motivation

Two further secondary outcome measures consisted of reading self-efficacy and motivation for reading, which were assessed jointly using a modified version of the FAR questionnaire. This questionnaire aligns well with the logic model as Reading Plus is designed to support reading self-efficacy by providing differentiated reading materials and adaptive support for readers. It is also designed to support motivation for reading in two key areas: i) by providing an adaptive learning experience, it aims to boost confidence with reading, which in turn is likely to cultivate more positive attitudes; and ii) it incorporates a broad range of texts which are designed to be of high interest to pupils, which pupils are able to choose from—the idea being that if children enjoy the texts they read, they are more likely to feel motivated about reading in general. Administering this questionnaire to the entire class took approximately ten minutes. The questionnaire was divided into two parts: the first part, measured reading self-efficacy and had 20 items; the second part, measured motivation for reading and had ten items. The Likert scale structure (7 points) of the questionnaire yielded a possible score ranging from 20 to 140 for self-efficacy and from 10 to 70 for the motivation subscale. The motivation to read scale, developed by Vardy *et al.* (under review), is grounded in the self-determination theory (Deci and Ryan, 1985) and has demonstrated high reliability

[7] See: **https://user-research.education.gov.uk/guidance/ethics-and-safeguarding/research-with-children-and-young-people**

(Cronbach's α = 0.8). The reading self-efficacy scale, based on the self-efficacy theory (Bandura, 1977) is adapted from Carroll and Fox (2017) original version with minor phrasing revisions. This scale has a Cronbach's alpha value of 0.90 (Vardy *et al.,* under review).

Similarly to the PiRA administration, step-by-step guidance was provided for teachers in relation to how to deliver the FAR questionnaire, including training items and a script to be read out to pupils. This guidance was informed by our experiences of using the FAR questionnaire for the PALS-UK trial (Lewin *et al.,* 2024).

This instrument was administered online by teachers and overseen by AlphaPlus at both baseline and endline to all pupils, with the baseline measure acting as a covariate for the endline measure. AlphaPlus' oversight included liaising with participating schools, providing access to the link of the questionnaire, monitoring completion rates across pupils and schools, and following up with schools.

Sample size

To calculate the required sample size at the protocol stage, we first sought to determine an effect size that the trial should be 'powered' to detect. To arrive at such an effect size, we considered results from other studies of Reading Plus as well as studies of similar reading programmes targeting primary school children. These studies gave us an indication of what effect sizes might be reasonable to expect and thus, a means of judging the adequacy of different proposed sample sizes.

A randomised trial of Reading Plus in the US in the fifth grade (equivalent to Year 6), yielded effect size 0.18 ($p<0.001$) (Spichtig *et al.,* 2019). An evaluation of Lexia Reading Core, in England, but with younger pupils, obtained an effect size on the primary outcome of 0.08 ($p=0.15$) for all pupils, and 0.18 ($p=0.04$) for FSM pupils (Tracey *et al.,* 2022). There are a number of US studies of PALS that found quite large effect sizes, ranging from 0.23 to 0.71, but samples contained only small numbers of fifth-grade pupils and focused on pupils with learning disabilities (U.S. Department of Education, Institute of Education Sciences, What Works Clearinghouse, 2012). The Reciprocal Reading programme looked at reading attainment in Key Stage 2 (O'Hare *et al.,* 2019). The authors obtained effect sizes of 0.14 ($p<0.01$) and 0.18 ($p<0.001$) for reading comprehension.

Together, these were the most relevant studies for which high-quality evidence of effect sizes were available. These informed the assumptions used in the trial design and power calculations, on the basis of which the study was powered to detect an effect size of around 0.18. According to Kraft (2020, Table 2, p. 250) this would rank as a medium-sized effect size in the context of contemporary trials in education.

The following assumptions and choices are reflected in the sample size calculations made at the protocol stage:

- Statistical tests of the nil-null hypothesis will be two-tailed tests, performed at the 95% level of statistical significance with statistical power of 80%.

- Proportion of variance explained in the outcome by level 1 covariates of 0.36 at level 1, and 0.10 at level 2 and level 3. We do not have reliable evidence on the correlation between Key Stage 1 reading attainment (the main pre-test covariate) and PiRA Year 5 Summer Term Test (the primary outcome). We do know that the correlation between PiRA and Key Stage 2 reading attainment is about 0.73 (Lewin *et al.,* 2024). Thus, we assume it is lower for Key Stage 1. We also allow for some moderate improvement in the outcome variance explained at the class and school levels, assuming that the regression model from which impact estimates will be obtained, containing a covariate capturing prior attainment, will reduce variance explained at the pupil level but also school and class levels.

- Based on evidence from the recently completed PALS-UK trial (Lewin *et al.,* 2024), which used the same outcome measure with a sample of Year 5 primary school pupils we assume intracluster correlation coefficients (ICCs) of 0.10 at the school level and 0.04 at the class level.

Assuming a class contains roughly 25 to 30 pupils and that there are on average 1.7 classes per primary school, at the protocol stage we estimated that a sample of around 126 schools would be required for a minimum detectable effect size (MDES) of 0.18. If there were on average eight pupils per class that were ever-FSM, the MDES for them would be 0.20. At randomisation, 124 schools had been recruited to the study. On average, classes in our sample contained 27 pupils and there were 1.7 classes per school. Using these sample size values, but holding other assumptions fixed, at randomisation

the MDES for all pupils was 0.18. On average, each class contained ten FSM pupils per class and the MDES for the FSM subgroups was 0.19.

At analysis, 121 schools containing 4,404 pupils were retained in the sample. There were on average 1.6 classes per school. In total, there were 1,563 pupils designated FSM, or an average of 14 per class. The proportion of FSM pupils in the achieved sample is relatively high, which may indicate that the sample is somewhat more disadvantaged than initially anticipated. However, this does not affect the internal validity of the study, as balance between intervention and control groups was generally preserved. Using these sample sizes to calculate minimum detectable effects at analysis for all and FSM pupils yielded effect sizes of 0.20 and 0.23, respectively. The MDES calculations are reported in Table 10 in the 'Impact evaluation results' section below.

Randomisation

Over 14,000 schools were approached by the delivery team via email marketing, social media, and networking. Around 392 schools completed an Expression of Interest (EOI) form (either via the EEF website or directly with Daisy Education). Of these, 130 schools signed the MoU, and six schools subsequently withdrew before randomisation. Randomisation took place on Friday 12 July 2024. In total, 124 schools were randomised 1:1 to the intervention and control groups. The randomisation was performed by a member of the Manchester Metropolitan University team who was blind to the school identity using STATA version 18 (StataCorp LLC, College Station, Texas, USA) statistical software and the command `randtreat` (Carril, 2017). Initially, the plan was to achieve balance on key school-level covariates by stratifying randomisation based on average prior school performance in Key Stage 2 reading tests from the last three available summer assessments, dividing schools into terciles, and categorising them as either single or multi-form entry. As explained in the study's SAP (Morris and Gellen, 2025), complete rather than constrained or stratified randomisation was used in the end due to a mistake in the code.

The delivery team were informed about the outcome of randomisation on the same day, and schools notified shortly after.

Statistical analysis

The analysis proceeded based on the principle of intention-to-treat (ITT). Pupils were identified in the analysis as members of the intervention or control group based on their school's allocation to intervention and control conditions at randomisation, regardless of whether the school or pupil subsequently participated in the intervention. If schools withdrew from the study after randomisation and requested data deletion, records for the relevant pupils were removed from the sample. Approaches to assessing the consequences of sample loss and strategies for handling missing data are discussed below.

Primary analysis

The primary analysis aimed to estimate the average effect of intention-to-treat (AITT) of Reading Plus on reading attainment. A sample estimate of the AITT is obtained through an adjusted analysis, fitting a linear mixed-effects model of the following form to the sample data:

$$Y_{ijk} = \beta_0 + \beta_1 T_k + \beta_2 X_{ijk} + \beta_3 A_{ijk} + u_k + v_{jk} + \varepsilon_{ijk} \qquad \textbf{(Equation 1)}$$

Y_{ijk} is the raw reading attainment (PiRA) score at endline for pupil i in class j and school k. T_k is a binary variable coded to '1' if school k is assigned to the intervention '0' otherwise. The sample estimate of β_1 is the estimated treatment effect of Reading Plus. X_{ijk} is the teacher assessed reading grade obtained in pupils' Key Stage 1 reading test for pupil i in class j, from school k (this covariate is entered as a pupil-level covariate and will reduce variance explained at all three levels: school; class; and pupil). A_{ijk} is the age in months for pupil i in class j and school k. There are random effects at the school u_k and class levels v_{jk} as well as at the pupil level ε_{ijk}. The three random effects are assumed to be uncorrelated, normally distributed, with mean zero and conditional variances σ_u^2, σ_v^2 and σ_ε^2. The total conditional variance of the response is $\sigma^2 = \sigma_u^2 + \sigma_v^2 + \sigma_\varepsilon^2$, and therefore the school level ICC (level 3) is $\rho_3 = \frac{\sigma_u^2}{\sigma^2}$, and at the class level (level 2) $\rho_2 = \frac{\sigma_v^2}{\sigma^2}$.

We opted to incorporate the age covariate for simplicity and transparency when we use outcome measures that are not standardised for age. This choice aligns with the methodology employed in the PALS-UK trial (Lewin *et al.,* 2024), where, in agreement with the EEF, age was controlled for in the primary and secondary analyses.

Estimates of the model parameters were obtained using restricted maximum likelihood and the command '`mixed`' in STATA version 19.5. The sample estimate of the intervention effect from the model above is converted into an effect size, consistent with Hedges' g as described below.

Secondary analysis

Secondary analysis involved estimating the effects of Reading Plus on the secondary outcomes for silent reading fluency, comprehension, and vocabulary. Response variables for each of the three outcomes are derived from the KTEA-3 instrument that was administered to a subsample of pupils in each school, chosen at random prior to randomisation. Thus, sample estimates of the effect of Reading Plus on pupils for these three outcomes are obtained from a linear mixed-effects model of the following form, where the usual assumptions are made:

$$Y_{ij} = \beta_0 + \beta_1 T_j + \beta_2 X_{ij} + \beta_3 A_{ij} + v_j + \varepsilon_{ij}$$

Here the variable Y_{ij} is the response—either pupil $i's$ silent fluency, comprehension or vocabulary score in school j, depending on which of the three outcomes is considered. X_{ij} is the Key Stage 1 teacher assessment for pupil i in school j and A_{ij} pupil's age.

Secondary analysis also involves estimating the effects of Reading Plus on reading motivation and reading self-efficacy. Measures of these two outcomes were obtained from the FAR questionnaire, administered to the whole sample at baseline and endline. Sample estimates for the effect of Reading Plus on both motivation and self-efficacy are obtained from estimating two regression models (one for each outcome) similar to that used in the primary analysis, except where Y_{ijk} is either the self-efficacy score for pupil i in class j and school k or similarly a pupil's motivation score, depending on which of the two models is considered. In these models X_{ijk} is the baseline score for either self-efficacy or motivation depending on the response.

These models are also fitted in STATA version 19.5 statistical software using the command '`mixed`' and restricted maximum likelihood. Estimates of the ICCs for each model are obtained directly from the STATA version 19.5 output using the post-estimation command '`estat icc`'.

Analysis in the presence of non-compliance

Due to the nature of the intervention, and the control the delivery team exercised over access to the Reading Plus platform, non-compliance affects the intervention group only. Control group pupils were not able to access Reading Plus. Thus, using the terminology of Gerber and Green (2012) only one-sided non-compliance is possible. If we can derive a measure of compliance that satisfies the exclusion restriction assumption and that is meaningful, it is possible to adjust the ITT estimates from the primary analysis to give an estimate of the Complier Average Causal Effect (CACE).

Several potential compliance indicators were discussed with the delivery team and the EEF. These indicators ranged from those defined solely at the school level to those that combined school- and pupil-level compliance information. The indicators considered are listed below. A binary compliant/non-compliant measure for each of these indicators can be derived from the Reading Plus management information system for each pupil and school. The indicators build in a cumulative fashion and are:

1. The school fails to attend training in Reading Plus—thus all schools and pupils therein assigned to the intervention group but where no representative from the school attends training and there is no further activity are considered non-compliant.
2. The school attends training but there is no further evidence that the school uses the Reading Plus platform.
3. The school attends training and there is evidence that Reading Plus is used in the school but there are pupils who have engaged with fewer than 15 texts over the three terms the programme runs for.

4. The school attends training and there is evidence that Reading Plus is used in the school but there are pupils that engaged with 15 or fewer texts over the first two terms and no texts in the third term.

For the purposes of compliance analysis, it was agreed with the developers and the EEF, that we would use definitions 3 and 4 above if compliance analyses were deemed necessary. It was judged that engaging with fewer than 15 texts could have no influence on pupils' reading. There was some concern that pupils might engage with 15 texts in the final term of implementation just before they complete endline reading assessments, and that such minimal engagement in close proximity to assessment could possibly influence their subsequent performance in tests. Thus, this final indicator is a sensitivity check. Accordingly, non-compliance was defined using two alternative specifications: i) meeting conditions 1, 2, and 3; and ii) meeting conditions 1, 2, and 4.

Because the definitions of compliance capture pupil-level engagement with the platform, the compliance analysis was due to be performed with 'pupil' as the unit of analysis. Compliance analysis was to be carried out using the two-stage least squares (2SLS) instrumental variables approach and the command `ivregress 2sls` in STATA version 19.5. Standard errors were to be clustered at the school level.

Because non-compliance in the control group is impossible, in this case an estimate of the CACE could also be interpreted as the average effect of treatment on those treated. Moerbeek and van Schie (2019) point out that CACEs estimated in this way can be problematic when association between the intervention receipt and take-up of the intervention is weak. Thus, for this reason we also proposed to report the results from a partial F-test for the first stage model, where a value of ten or higher would have been acceptable. A high F-test value for the first stage model indicates that randomisation itself led to higher take-up of the intervention, which is what would be expected, but the test reveals the extent to which this is the case.

Having said all this, due to a very low rate of non-compliance (see below), the approach described here was not implemented, as adjusting the ITT estimate for the intervention by the compliance rate would not have led to substantially different results.

Missing data analysis

For the primary analysis, we conduct sensitivity tests to evaluate whether missing data at the endline introduce bias or leads to imprecise estimates of the intervention effect. Missingness before randomisation is unlikely to cause bias in intervention effect estimates, though it may lead to a decline in power due to diminished sample sizes.

Post-randomisation missingness in the primary outcome is due to several factors, including:

- Parents withdrawing their children from the study and requesting data deletion.
- Pupils leaving the school before completing the New PiRA Year 5 Summer Term Test.
- Schools withdrawing from the evaluation and asking for data deletion.
- Pupils being absent on the day of testing, thus unable to provide outcome data.
- Technical problems encountered in implementing the online version of the New PiRA Year 5 Summer Term Test.

Initially, we assess the nature of the missing data, determining whether it is missing completely at random (MCAR), missing at random (MAR), or potentially missing not at random (MNAR). This involves calculating and comparing missing data rates across trial arms. As missingness exceeds 5% in both control and treatment groups, we investigate whether baseline covariates, such as gender, FSM status, SEND status, EAL status, school size, Key Stage 1 scores, and FAR measures explained the missing data by fitting a logistic regression model, the so called dropout model. Further bivariate tests are carried out examining the correlation between the presence of an endline New PiRA Year 5 Summer Term Test score and other explanatory variables: gender; FSM status; SEND status; EAL status; school size; baseline self-efficacy scores; and baseline motivation scores. Covariates associated with the New PiRA Year 5 Summer Term Test scores or related to missingness were incorporated into a multiple imputation model.

As the missing data rate exceeds 5%, and the dropout model shows that missingness is associated the Key Stage 1 Reading Teacher Assessment, FSM status, and SEND status covariates, further sensitivity tests of the impact of this missing data on sample estimates using multiple imputation by chained equations (MICE) were undertaken. This involves specifying an imputation model for each variable with missing data and generating ten imputed data sets. The imputation is performed using STATA version 19.5, which supports only single-level imputation. Although multilevel imputation is available in R, the process is slow and limited to two levels. To be consistent with the imputation model, we first re-estimate the primary outcome model described in the primary analysis section using ordinary least squares (OLS) with cluster-robust standard errors, adjusting degrees of freedom via the hc2 method. The STATA command used is "`vce(hc2 [cluster_name], dfadjust`" to account for clustering at the school level. This OLS model provides a population average treatment effect, which we compare with results from the analysis of imputed datasets.

The MICE procedure generated multiple datasets with missing values imputed. We use "`mi estimate`" to re-estimate the intervention effect by running OLS regressions on these imputed datasets. Comparing these results with the analysis described in the previous paragraph helps determine whether the missing data follows a MAR process.

Our intention was that if there is some imbalance in attrition between treatment and control groups, we would estimate intervention effects using Lee bounds, which are used to assess the potential impact of this imbalance. The bounds are calculated for the always-responding subsample, not the full sample, which limits the generalisability of the findings. The Lee (2005) estimator provides bounds on treatment effects under minimal assumptions—namely, randomisation and the monotonicity assumption (i.e. no subjects are more likely to respond under control than intervention conditions). The approach creates trimmed bounds by removing (or trimming) observations from the group with the higher response rate (treatment group) to match the response rate of the group with the lower response rate (control group). This is done under the assumption that those in the treatment group who responded represent the same distribution as those who would have responded had they been in the control group. This creates a conservative estimate that bound the treatment effect. We proposed to calculate these bounds using the "`leebounds`" package in STATA version 19.5 (Tauchmann, 2014). However, once we had compiled the final analysis data set and calculated the attrition rate in both arms of the trial, it was decided not to proceed with bounds estimation, as the relative rates of attrition in the final data set, standing at 11.8% and 8.9% in the intervention and control arms, respectively were not sufficiently different to justify the approach.

Subgroup analyses

Subgroup analysis is performed for two subgroups: those ever-FSM; and pupils with a SEND designation. Variables identifying these pupils in our sample have initially been obtained directly from schools. However, due to missing data, these variables were subsequently obtained from the NPD.

Subgroup analysis involves fitting two models for each of the two subgroups considered. The first for the subgroup in question has the same form as the primary analysis regression model but is estimated on a sample restricted to pupils that are members of the group being considered. Results from this model show whether pupils' ever-FSM or pupils' SEND benefit from the intervention relative to their counterparts in the control group.

The second model for each subgroup is estimated on the full sample and contains an interaction between the subgroup indicator and the intervention group indicator, as follows:

$$Y_{ijk} = \beta_0 + \beta_1 T_k + \beta_2 X_{ijk} + \beta_3 A_{ijk} + \beta_4 Group_{ijk} + \beta_5 Group_{ijk} \times T_k + u_k + v_{jk} + \varepsilon_{ijk} \qquad \textbf{(Equation 2)}$$

The terms in the model are as before with the exception of $Group_{ijk}$, which is coded to '1' if pupil i in class j and school k is ever-FSM or SEND, depending on which group is the focus of the analysis. The sample estimate of β_5 is interpreted as the extent to which, members of whichever group is being considered, benefited disproportionately from their participation in Reading Plus.

Models are fitted on the data in the statistical package STATA version 19.5 using the command '`mixed`', and restricted maximum likelihood. For all models we calculate the ICCs at the school and class levels using the STATA post-estimation command `estat icc`.

Additional analyses and robustness checks

In the study's SAP (Morris and Gellen, 2025), two sets of additional analysis were proposed. In the first, we anticipated estimating a series of further models to support and further expand on the primary impact analysis. In the second, we proposed to undertake a mediation analysis exploring, in a limited way, the extent to which gains in fluency among pupils might mediate the causal effect of Reading Plus on reading attainment. This latter analysis is not undertaken due to the lack of a meaningful effect size in the primary outcome analysis.

Analyses in support of the main primary analysis comprises robustness testing of the main primary analysis regression as well as fitting an additional linear outcome model using OLS regression. The benefit of this model is that it relies on fewer distributional assumptions when compared to the primary analytical approach. As explained elsewhere, the proposed statistical models for our missing data, mediation and compliance analyses were run in STATA version 19.5, which does not support linear mixed models for these procedures but does allow for the use of linear OLS regression with cluster-robust standard errors. Therefore, it was proposed that the OLS linear regression discussed here would act as a benchmark for these analyses.

Turning to robustness analysis. We estimated the following additional models in support of the primary analysis:

- A variance components model which enables us to assess the unconditional proportions of the outcome variance at the levels in the model and from which we will obtain the denominator to be used in effect size calculations in the primary outcome analysis. This took the form:

$$Y_{ijk} = \beta_0 + u_k + v_{jk} + \varepsilon_{ijk}$$

- A model as above but in addition containing the intervention group indicator T_k, to provide an unadjusted estimate of the intervention effect and through comparison enable us to assess the effects on our results of covariates in the primary analysis model.

- A model of the following form testing for the effects of different pre-test covariates:

$$Y_{ijk} = \beta_0 + \beta_1 T_k + \beta_2 X'_{ijk} + \beta_3 X_{ijk} + \beta_4 L_{ijk} + u_k + v_{jk} + \varepsilon_{ijk}$$

  Along with the teacher assessed grade pupils obtained in their Key Stage 1 reading tests, we also attempted to collect Key Stage 1 reading scaled and raw scores prior to randomisation direct from schools for all pupils in the enumerated sample. Unfortunately, there was quite a bit of missing data in the raw and scaled continuous Key Stage 1 reading test scores. However, we examine how far including continuous scaled scores at Key Stage 1 as pre-test covariates in our model might improve the precision of our sample estimates of β_1—that is provide tighter confidence interval (CI) around the main intervention effect estimate. To do this we estimate a model as above with the inclusion of two additional terms. The first of these X'_{ijk} represents pupil i in class j and school k's scaled score in their reading Key Stage 1 assessment. For each case where we fail to observe X'_{ijk} the missing value is replaced by 0. This is included in the model alongside the teacher assessment they received X_{ijk}. The second additional covariate is a binary indicator L_{ijk}. This is set to '1' if the pupil has a missing value (or 0) in X'_{ijk}, 0 otherwise.

- A model identical to the main primary analysis model except for the inclusion of additional covariates: baseline FAR self-efficacy and motivation test scores, FSM status, gender, SEND status, EAL status, school size (in form entry), and average school-level Key Stage 2 scores for the last three years in reading. This final model contains further covariates (except for scaled and raw Key Stage 1 reading scores) to explore whether any further gains in power can be achieved.

For each of these models, the ICCs will be calculated for the school and class levels using the STATA post-estimation command `estat icc`.

Estimation of effect sizes

For each model discussed above, except for those estimated using OLS, results from the models are presented as effect sizes. That is, as standardised difference in means consistent with Hedges' g in large samples. Effect sizes are computed as follows, using the example of the primary outcome analysis. First, we estimated an empty model to obtain the unconditional sample estimates of the variances at the pupil, class, and school levels. From the impact regression model

run for the primary outcome analysis we obtain the adjusted sample estimate of the intervention effect $\hat{\beta}_1$. The effect size is then calculated as follows:

$$g = \frac{\hat{\beta}_1}{\sqrt{\hat{\sigma}_U^2 + \hat{\sigma}_V^2 + \hat{\sigma}_\varepsilon^2}} \times \frac{N-3}{N-2.25} \times \sqrt{\frac{N-2}{N}}$$

The second and third terms adjust for small sample bias and have a trivial effect on the calculation and are ignored. Each effect size estimate reported is accompanied by a 95% frequentist CI. This is computed by taking the upper and lower limits of the CI for $\hat{\beta}_1$ obtained from the regression output and dividing these limits by $\sqrt{\hat{\sigma}_U^2 + \hat{\sigma}_V^2 + \hat{\sigma}\hat{\sigma}_\varepsilon^2}$.

Estimation of ICCs

For all models discussed the ICCs are reported. These are derived using the post-estimation command `estat icc` in STATA version 19.5 statistical software, initiated after estimation of each regression model.

IPE

The IPE complements the impact evaluation by exploring the relationship between the delivery of Reading Plus and its impacts on pupils. The IPE is grounded in the programme's logic model.

IPE questions for research

The RQs addressed by the IPE are as follows:

> IPE RQ1: What reading practices/programmes/interventions are: a) Happening in control schools? b) Happening alongside Reading Plus in intervention schools? c) Being replaced by Reading Plus within intervention schools?

IPE RQ1 aims to describe and compare the reading practices in intervention and control groups during the delivery of Reading Plus. Using survey and interview data, exploration of this question will help to explain the outcomes for pupils in the two groups.

> IPE RQ2: To what extent was the intervention delivered as intended in relation to: a) How often pupils use the Reading Plus platform? b) The way in which additional visual skills activities are used to support struggling readers? c) How often and for what purposes teachers use the additional activities to support individuals/small groups? d) Use of data reported within Reading Plus by teachers to identify and address skills gaps? e) Optional use of Reading Plus at home by pupils?
>
> IPE RQ3: What changes or adjustments, if any, were made to the programme during its implementation? a) Why were these adjustments made?
>
> IPE RQ4: What are the barriers and facilitators to the implementation of Reading Plus? a) Which barriers and facilitators, if any, were specifically or disproportionately experienced by FSM-eligible pupils? b) SEND pupils?

IPE RQ2, IPE RQ3, and IPE RQ4 will use survey and interview data to explore whether the intervention was delivered as intended and the factors affecting delivery. These findings will be used to explain the impacts of Reading Plus across schools and pupil groups.

> IPE RQ5: To what extent did the support available within the Reading Plus programme enable practitioners to deliver the programme effectively? Including: a) Initial Reading Plus training; b) Support from the reading consultant; c) Optional additional training: d) Access to the Resources Hub.
>
> IPE RQ6: What impacts (if any) do headteachers, teachers, and pupils perceive Reading Plus to have on: a) Fluency? b) Comprehension? c) Vocabulary? d) Reading proficiency? e) Feelings about reading? f) Closing

the 'reading gap'? g) Teacher workload? h) Teachers' understanding of how silent reading fluency impacts on fluency, stamina, and comprehension?

Guided by the logic model and drawing on data from observation, interviews, staff surveys, and pupil focus groups, IPE RQ6 and IPE RQ7 will enable an in-depth exploration of how the programme works in practice and the mechanisms underpinning observed impacts.

IPE RQ7: To what extent is the number of texts completed by pupils within Reading Plus (dose) associated with reading attainment at endline (response)?

IPE RQ8: How does pupils' reading proficiency change over time as they engage with Reading Plus? a) How do trends over time vary by prior attainment, FSM, EAL, SEND, and gender?

IPE RQ7 and IPE RQ8 will use quantitative data from the Reading Plus system to explore two key assumptions of the logic model: the more pupils engage with Reading Plus, the more their reading will improve; and Reading Plus will promote progress for all groups (FSM, SEND, etc.). These analyses will help us understand mechanisms of change and therefore will support us in exploring explanations for the findings of the impact evaluation.

IPE methods overview

The IPE RQs were investigated using a range of qualitative and quantitative methods. Together these questions are designed to cover 11 of the 12 IPE dimensions set out in the EEF implementation and process evaluation guidance (EEF, 2022). The final dimension, cost, is addressed separately within the 'Cost evaluation design' section discussed below. We summarise the planned data collection in Table 5 and detail below how the IPE was conducted in practice. Research instruments can be found in the 'Technical Notes' in Appendix F.

The surveys, observation, and interview schedules were developed in consultation with the delivery team and the EEF. The research instruments also built on those used within the EEF evaluation of PALS-UK (which is also a reading intervention) (Lewin *et al.,* 2024), with adaptations made to ensure that the instruments aligned with the logic model for Reading Plus.

Table 5: IPE methods overview

IPE RQ addressed	IPE dimension	Research methods	Data collection methods	Sample size and sampling criteria	Data analysis methods
RQ1	Programme differentiation; Monitoring of control/intervention groups	Survey (pre/post)	Online questionnaires	126 headteachers (all); Approx. 250 Year 5 teachers (all)	Descriptive statistics (quantitative responses); Thematic analysis (free-text responses)
		Interview	Semi-structured interviews	Six headteachers; Approx. ten Year 5 teachers and teaching assistants; Approx. 36 Year 5 pupils; (Six case study schools)	Thematic analysis; Deductive coding (based on logic model); Inductive coding (to identify additional themes)
RQ2	Fidelity; Dosage; Responsiveness	Document analysis	Review of the Reading Plus training materials	Not applicable	Basic review of the key content to become familiar with teacher guidance
		Observation	Observation of Reading Plus lessons	Six lessons (case study schools)	Deductive coding
		Assessment data	Collection of formative assessment data and usage data from Reading Plus platform	6,426 Year 5 pupils (all)	Descriptive statistics; Correlation; Regression
RQ3	Adaptation; Fidelity; Reach	Interview	Semi-structured interviews	Six headteachers;	Thematic analysis;

IPE RQ addressed	IPE dimension	Research methods	Data collection methods	Sample size and sampling criteria	Data analysis methods
				Approx. six to ten Year 5 teachers and teaching assistants (case study schools)	Deductive coding (based on logic model); Inductive coding (to identify additional themes)
		Survey (post)	Online questionnaires	Approx. 125 Year 5 teachers (intervention schools)	Descriptive statistics (quantitative responses); Thematic analysis (free-text responses)
RQ4	Moderators; Mediators	Interview	Semi-structured interviews	Six headteachers; Approx. six to ten Year 5 teachers and teaching assistants; Approx. six consultants; (case study schools)	Thematic analysis; Deductive coding (based on logic model); Inductive coding (to identify additional themes)
		Survey (post)	Online questionnaires	63 headteachers; Approx. 125 Year 5 teachers (intervention schools)	Descriptive statistics (quantitative responses); Thematic analysis (free-text responses)
RQ5	Quality; Moderators; Mediators	Observation	Observation of Reading Plus training	Observation of online training before intervention and three months in	Deductive coding
		Interview	Semi-structured interviews	Six headteachers; Approx. six to ten Year 5 teachers and teaching assistants; Approx. six consultants; (case study schools)	Thematic analysis; Deductive coding (based on logic model); Inductive coding (to identify additional themes)
		Survey (pre/post for teachers; post for headteachers)	Online questionnaires	63 headteachers; Approx. 125 Year 5 teachers (intervention schools)	Descriptive statistics (quantitative responses); Thematic analysis (free-text responses)
RQ6	Responsiveness; Quality; Perceived impact	Interview	Semi-structured interviews	Six headteachers; Approx. six to ten Year 5 teachers and teaching assistants; Approx. six consultants; (case study schools)	Thematic analysis; Deductive coding (based on logic model); Inductive coding (to identify additional themes)
		Survey (post)	Online questionnaires	63 headteachers; Approx. 125 Year 5 teachers (intervention schools)	Descriptive statistics (quantitative responses); Thematic analysis (free-text responses)
RQ7	Quality; Mediators	Assessment data	Collection of formative assessment data from Reading Plus platform	6,426 Year 5 pupils (all)	Descriptive statistics; Correlation; Regression; Mediation analysis
RQ8	Quality; Mediators	Assessment data	Collection of formative assessment and usage data from Reading Plus platform	6,426 Year 5 pupils (all)	Descriptive statistics; Correlation; Regression; Mediation analysis

Observations of the training

The evaluation team observed a sample of the three online training sessions plus the welcome webinar. Table 6 details the observations conducted. The training sessions attended by case study schools were selected were possible; this was not always possible due to the evaluation team's availability. An observation proforma was designed and used by the research team to structure their fieldnotes on the content, delivery, and reception of the sessions, with sections focusing on data related to IPE RQ4(a) on the barriers and facilitators experienced by FSM-eligible and SEND pupils and IPE RQ5 on the support provided within the programme.

Table 6: Training observations completed

Name of training session	Date of delivery	Number of observations conducted
Welcome webinar	June 2024 and September 2024	One
Initial training	September 2024 – October 2024	Three (including one case study school)
Reports Training Session 1	October 2024	Three (including two case study schools)
Reports Training Session 2	November 2024	Two[a] (including one case study school)

[a] *We intended to observe three of these training sessions, however this was not possible when the scheduled session was cancelled at short notice due to teacher availability.*

Staff surveys

Online surveys were distributed at baseline and endline to headteachers and Year 5 teachers in both intervention and control schools. The baseline survey was distributed to headteachers before randomisation (June/July 2024) and to teachers after randomisation (September/October 2024). The teachers' baseline survey was kept open later than planned due to a slow response. Teachers in intervention schools were asked to complete the survey before their Reading Plus training started, however many responses were received during the training window and so may have been completed after schools had been trained and possibly started delivering Reading Plus. We believe that issues with recall are likely to be minimal given that teachers were asked to reflect on the previous academic year. However, we cannot discount the possibility that teachers may have been influenced by the training when completing the baseline questionnaire. The endline survey was distributed to headteachers and teachers in June/July 2025. Due to low initial response rates for the endline teacher survey despite email reminders and telephone calls, the deadline was extended to September 2025.

At baseline, the surveys were designed to provide information about reading practices, including interventions, approaches, assessment, and the use of EdTech, that were already taking place in school. At endline, school staff were asked about any changes in reading practices since the start of the intervention and those in the intervention schools were also asked about their experiences of using Reading Plus, any enabling and constraining factors which influenced how it was implemented, and their perceptions of any impacts that it had.

Table 7 documents the survey response rates. The changing numbers of expected responses reflect the withdrawal of schools over time. Schools that withdrew completely from the intervention are not included in the expected numbers and their responses were not included in the analysis (there were two responses to the baseline headteacher survey from schools that withdrew from the evaluation that were not used in the analysis). Surveys were not sent to schools that had withdrawn from the intervention but stayed in the evaluation, in order to reduce the burden on school staff. If surveys were sent to these schools before they withdrew, then they are included in the expected figures, and any responses are retained for analysis.

Table 7: Staff survey response rates

Intended respondent	Intervention		Control	
	Baseline	Endline	Baseline	Endline
Headteacher	45/60 (75%)	40/58 (69%)	43/61 (67%)	42/61 (69%)
Teacher	71/102 (70%)	56/99 (57%)	67/107 (63%)	78/107 (73%)

The survey results presented in this report reflect the number of responses given to individual questions and so may differ from the overall survey response rate.

Case studies

Six intervention schools were selected as case studies. To ensure representativeness across diverse contexts, case studies were selected at random, stratified by school size (one form per year group vs two or more forms per year group) and level of FSM eligibility (low, medium, high). In considering stratification variables, we had initially discussed whether to use prior school attainment or FSM eligibility. FSM was preferred because, while attainment may partly reflect differences in school quality, FSM is more closely linked to pupils' needs and their risk of underachievement in reading. We also explored stratifying by urban/rural location due to its relevance for potential connectivity issues and implementation. However, intervention schools were disproportionately urban, which resulted in sparsely populated strata and potential representativeness concerns. School size was therefore retained as the binary stratification variable, as it remains relevant to implementation and allowed for a more balanced and feasible sampling approach There is also a limit to how much stratification is possible with six schools.

The selected schools were approached directly by the evaluation team via email. Since engagement as a case study involves some burden on schools, we anticipated that those selected may decline to take part. Where this was the case, we approached a second selected school until a sample size of six was met. In practice, three of our first-choice schools agreed to participate, plus two of our second choice and one of our third choice. Three schools were multi-form entry (with one high FSM, one medium FSM, and one low FSM) and three were single form entry (one high, one medium, and one low FSM).

We had planned to visit each school twice during the intervention: once in the middle of the intervention; and once towards the end. In practice, one case study school withdrew from delivering the intervention in between the first and second visits, and a second visit was not conducted. This school was invited to do a short online interview instead, but it was not possible to arrange this.

At each visit, we interviewed headteachers, Year 5 teachers, and any other relevant teaching staff and Year 5 pupils (see Table 8 for the number of interviewees that we spoke to). Interviews focused on stakeholders' experiences of using Reading Plus and perceived impacts. We used semi-structured interview schedules that were guided by the programme logic model and RQs while allowing school-specific follow-up questions. Pupils were interviewed in groups of six to eight with a member of school staff present. Pupils were selected by the class teachers. We encouraged teachers to select a balance group of pupils for the focus group, based on reading ability and gender.

At the first case study visit we also observed a Reading Plus lesson, using an observation schedule to structure our field notes. The observation schedule focused on both whole-class observations (e.g. technical set-up, teacher role, pupil engagement) as well as individual pupil observations that recorded what pupils were engaged in during a two- to three-minute time period.

Table 8: Interviewees spoken to in case study schools

School	Visit 1 (January/February 2025)	Visit 2 (June/July 2025)
Case study 1	One headteacher, one teacher, one pupil focus group (with five pupils)	One teacher (who is also a senior leader), one pupil focus group (with five pupils)
Case study 2	One headteacher, one teacher, one pupil focus group (with five pupils)	One assistant headteacher, one teacher, one pupil focus group (with six pupils)
Case study 3	Two teachers, two teaching assistants, one co-headteacher, one pupil focus group (with nine pupils)	Two teachers, one co-headteacher and one pupil focus group (with six pupils)
Case study 4	Three teachers, one deputy head and Key Stage 2 lead, one pupil focus group (with six pupils)	*Second visit not conducted due to school withdrawal from programme*
Case study 5	One teacher, one deputy head and literacy lead, one pupil focus group (with six pupils)	One teacher, one deputy head and literacy lead, one pupil focus group (with five pupils)
Case study 6	One headteacher, one teacher, one group interview with teaching assistants, one pupil focus group (with seven pupils)	One teacher (who is also a senior leader), one group interview with teaching assistants, one pupil focus group (with four pupils)

Delivery team interviews

We had planned to conduct an online interview with reading consultants allocated to case study schools around the time of the first case study visits. To avoid revealing the identities of the case study schools to the delivery team and potentially affecting the delivery of the intervention, we spoke to two reading consultants who were heavily engaged with the support provided to trial schools. We asked open questions about their experiences of, and reflections on, delivering support to schools, seeking to draw on a range of examples from consultants' knowledge of schools in the trial.

Further data collection

The evaluation team reviewed the delivery documentation to become familiar with the expectations and guidance relayed to schools. We received login details to Reading Plus to try a lesson ourselves.

We also used the Reading Plus platform itself as an instrument for gathering data about usage and pupil progress. Platform data provides an indication of how frequently each pupil used the platform (i.e. number of times per week), the average amount of time spent on the platform each week, and the total amount of time that each pupil spent engaging with the platform over the intervention period. Throughout the intervention the Reading Plus platform automatically collected formative assessment data in relation to pupils' reading comprehension, vocabulary, and fluency. As a measure of pupil progress, we collected the following data from the platform at monthly intervals over the intervention period (October to July): comprehension level; vocabulary level; reading rate; reading self-improvement belief; reading confidence; and reading interest. We also collected pupils' summative scores from the platform at the beginning and end of the intervention period (October 2024 and July 2025). These scores relate to the constructs listed above with the addition of an overall reading proficiency measure (which the platform only provides within the summative assessment). We collated this longitudinal data at the end of the trial to answer IPE RQ7 and IPE RQ8.

Analysis

Data from closed questions in the surveys was analysed quantitatively in SPSS (SPSS Inc., Chicago, Illinois, USA) statistical software to generate descriptive statistics. Textual data from the surveys and interviews was analysed using thematic analysis (Braun and Clarke, 2006; Braun and Clarke, 2012). This data was organised and coded in NVivo, using a mixed coding method with a coding framework derived from the logic model applied deductively and additional themes derived inductively.

Quantitative analysis of the platform usage data and pupil progress measures generated within Reading Plus was conducted to investigate IPE RQ7 and IPE RQ8:

> IPE RQ7: To what extent is the number of texts completed by pupils within Reading Plus (dose) associated with reading attainment at endline (response)?
>
> IPE RQ8: How does pupils' reading proficiency change over time as they engage with Reading Plus? a) How do trends over time vary by prior attainment, FSM, EAL, SEND, and gender?

To address IPE RQ7, a mixed-effects linear regression model was estimated using the `mixed` command in STATA version 18, with New PiRA Year 5 Summer Term Test scores specified as the dependent variable and the number of texts read by each pupil as the main independent variable. Covariates included age, gender, FSM status, EAL status, SEND status, and prior attainment to account for pupil characteristics associated with engagement with the intervention.

To address IPE RQ8, average reading levels, as recorded weekly by the Reading Plus platform, were plotted over time. Separate trend lines were produced for subgroups defined by prior attainment, FSM status, EAL status, SEND status, and gender. For each subgroup, trends were compared with the overall average trajectory, as well as with the trajectories of pupils with high and low prior attainment, to examine differences in patterns of reading development over time.

A core function of the IPE is to aid interpretation of the impact analyses, providing the opportunity to develop further hypotheses around possible mediators and sources of heterogeneity in treatment effects. It also enables us to develop possible explanations for the findings. Within the IPE itself, different data sources are analysed comparatively to assess convergence and divergence between findings. For example, interview data from the case studies provides rich data about how staff experienced Reading Plus, while data from the staff surveys enables us to gain a sense of how representative individual views expressed within the case studies were across the sample as a whole.

Costs

The aim of the trial's cost evaluation was to estimate the costs of adopting the Reading Plus intervention. It would seek to answer the following questions:

- What was the cost per class to implement and deliver the Reading Plus trial?
- What was the cost per pupil to implement and deliver the Reading Plus trial?
- What would the cost per school and per pupil be to implement and deliver Reading Plus over a three-year period?

The cost feasibility analysis studied programme's affordability rather than comparing it to another programme. The analysis included the following categories:

- software licence fees;
- pre-requisite costs;
- time that teachers and other staff would require to attend training, and deliver Reading Plus; and
- additional unpaid time reported by headteachers that staff would require to deliver Reading Plus.

The evaluation followed the EEF's cost evaluation guidance (EEF, 2023) and covered pre-requisites, start-up costs, and recurring costs. Software licence fees were obtained from the delivery team, while additional costs were estimated using responses to the teachers' and headteachers' post-intervention surveys.

Timeline

Table 9: Timeline

Dates	Activity	Staff responsible / leading
December 2023 – January 2024	Start-up meetings/review theory of change	The EEF, evaluation team, delivery team
January 2024 – March 2024	Data governance/MoU, parental withdraw, and data processing notices drafted and agreed	Evaluation team, delivery team
February 2024	Ethical approval	Evaluation team
February 2024 – June 2024	School recruitment	Delivery team
February 2024 – June 2024	Parental withdrawal process	Delivery team
March 2024 – April 2024	Protocol	Evaluation team
March 2024 – September 2024	Sample enumeration	FFT
June 2024 – July 2024	Review of delivery documentation	Evaluation team
June 2024 – July 2024	Headteacher surveys	Evaluation team
August 2024	Endline sampling	Evaluation team
August 2024	Randomisation	Evaluation team
September 2024 – October 2024	Teacher surveys	Evaluation team
September 2024 – October 2024	Initial training sessions (intervention schools), with observations	Delivery team (observations by evaluation team)
September 2024	SAP completed	Evaluation team
October 2024 – May 2025	Delivery of Reading Plus	Delivery team
October 2024	Reports Training Session 1	Delivery team (observations by evaluation team)
November 2024	Reports Training Session 2	Delivery team (observations by evaluation team)
January 2025 – February 2025	First case study visit (intervention schools)	Evaluation team
May 2025	Second case study visit (intervention schools) quality assurance of PiRA administration in case study schools	Evaluation team
May 2025	Training for test administrators	Evaluation team
June 2025 – July 2025	Endline assessments	AlphaPlus
June 2025	Teacher and headteacher surveys	Evaluation team
June 2025	Interviews with the delivery team	Evaluation team
July 2025	Collection of usage and progress data from delivery team	Evaluation team
August 2025 – February 2026	Data analysis and report writing	Evaluation team
February 2026	Draft report submitted	Evaluation team

Impact evaluation results

Participant flow including losses and exclusions

School recruitment and attrition

Over 14,000 schools were approached by the delivery team. Out of 392 schools that completed an EOI form, 260 schools were excluded due to inability to comply with the requirements of the study, and a further six eligible schools withdrew. In total, 124 schools signed the trial MoU and were randomised. Out of 124 schools, 62 were randomised into the intervention group, and 62 to the control group. Following randomisation, one of the control schools failed to provide baseline pupil data and withdrew from the study. A further two intervention schools withdrew from the evaluation after randomisation but before endline. One of the schools cited a shift in strategy towards a whole-school focus on improving reading, following a recent Office for Standards in Education, Children's Services and Skills (Ofsted) visit, as their reason for leaving the trial. In the other school, reduced staffing levels undermined its capacity to deliver the intervention. Two more schools from the intervention group decided not to continue with the intervention but did not leave the evaluation. One was not able to commit due to the cost of the intervention (£500 plus VAT), while the other decided to stop using the platform due to concerns about their pupils' summative reading test results.

Pupil recruitment and attrition

There were 5,406 eligible pupils in the schools that signed the MoU. Before the randomisation took place, two pupils were withdrawn from the trial. At randomisation, 5,404 pupils were included in the trial. Following publication of the SAP, one pupil was withdrawn from the study. As a result, all records relating to that pupil were removed from the dataset, reducing the effective randomised sample from 5,404 to 5,403 pupils. The figure of 5,403 is therefore used throughout the analysis.

Key Stage 1 Reading Teacher Assessment

During recruitment, schools were asked to provide data for pupils in the relevant year group. These data were collected by FFT. As part of this process, schools were asked to provide Key Stage 1 reading test scores as well as the teacher assessment (working at/working toward/working beyond) based upon it. Because a substantial proportion of Key Stage 1 Reading Teacher Assessment data and test data were missing, an application was submitted to the DfE to access this information in the NPD. Of the 5,403 pupils originally included in the trial at randomisation, 5,281 records were forwarded to the DfE for matching—the difference being pupils whose schools had withdrawn from the evaluation. This linkage process successfully matched 4,972 pupils to NPD records. From that sample, 18 pupils were excluded from the analysis sample due to 'Absent' status of their Key Stage 1 Reading Teacher Assessment record.

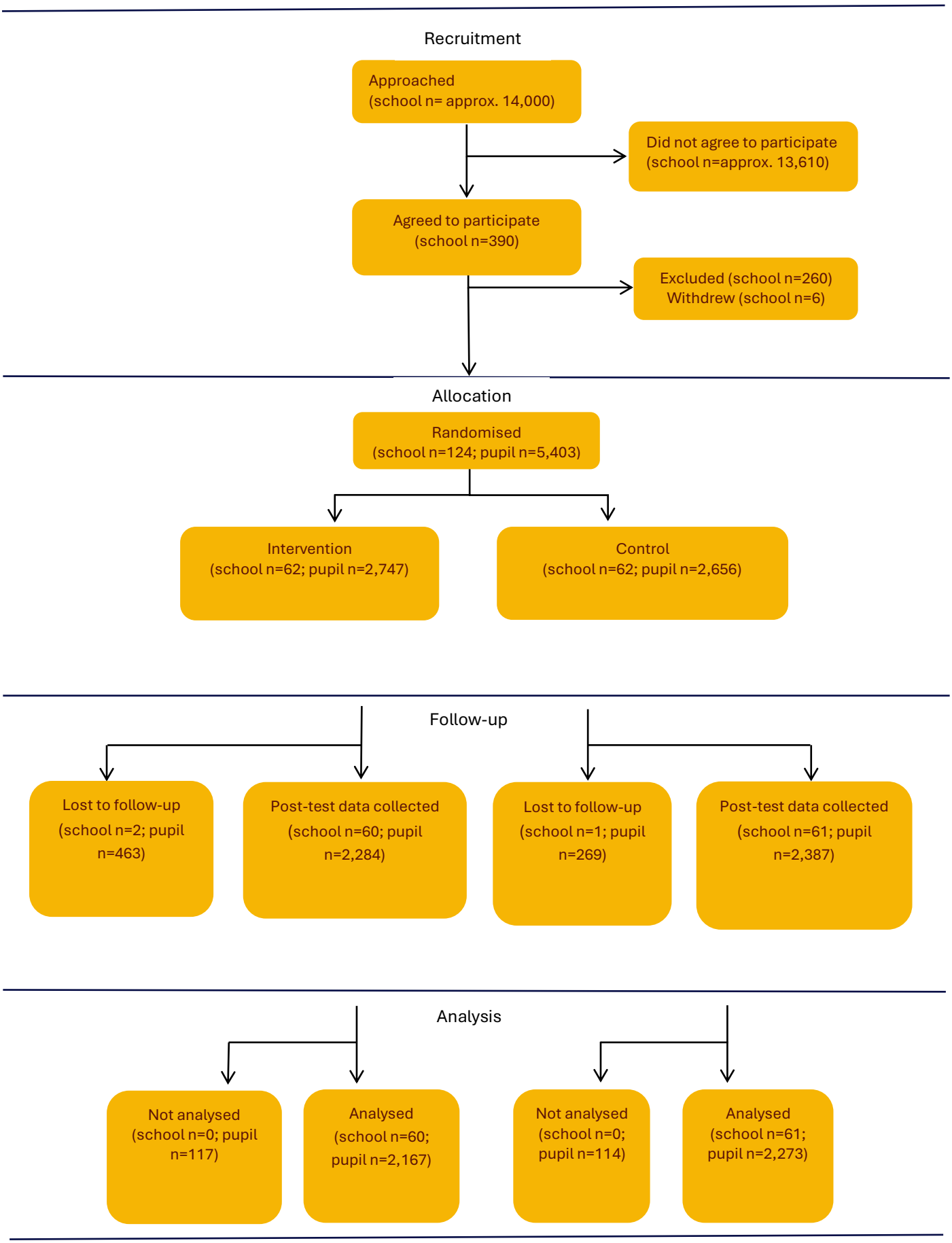
Endline New PiRA Year 5 Summer Term Test data

We received 4,671 endline New PiRA Year 5 Summer Term Test assessments from 121 schools. Because both baseline Key Stage 1 Reading Teacher Assessment data and endline New PiRA Year 5 Summer Term Test data were required for inclusion in sample for the primary analysis, the final 'at analysis' sample comprised 4,440 pupils.

The following reasons contributed to the loss of pupil observations between randomisation and endline:

- School withdrawal n=122 (intervention n=122; control n=0).
- Parental withdrawal n=1 (intervention n=1; control n=0).
- Endline data not provided n=610 (intervention n=341; control n=269).
- Baseline data not provided n=231 (intervention n=117; control n=114).

Figure 5: Participant flow diagram (two arms)



Sample size and statistical power

The study protocol (Gellen *et al.,* 2025) specified a sample size to achieve 80% power for detecting an MDES effect size of 0.18 for 126 schools. Assumptions included a pre-test/post-test correlation between the outcome measure at endline and baseline of 0.6 at the pupil level and 0.32 at both class and school levels. ICCs were assumed to be 0.10 at the school level and 0.04 at the class level. At randomisation, effect sizes were recalculated based on the number of schools randomised (124) and the size of the schools (average size of approximately 27 rather than 30 assumed at the protocol stage, with average number of classes of around 1.6 rather than 1.7). This gave a total number of 5,404 pupils and an MDES effect size of 0.18. At analysis, the number of schools in the sample decreased to 121, and the average class size reduced to 23 from that assumed at the design stage. Despite these changes, the MDES remained at 0.18.

Table 10: MDES at different stages

		Protocol		Randomisation		Analysis	
		Overall	FSM	Overall	FSM	Overall	FSM
MDES		0.18	0.20	0.18	0.19	0.18	0.20
Pre-test/post-test correlations	Level 1 (pupil)	0.6	0.6	0.6	0.6	0.6	0.6
	Level 2 (class)	0.32	0.32	0.32	0.32	0.32	0.32
	Level 3 (school)	0.32	0.32	0.32	0.32	0.32	0.32
ICCs	Level 2 (class)	0.04	0.04	0.04	0.04	0.04	0.04
	Level 3 (school)	0.10	0.10	0.10	0.10	0.10	0.10
Alpha		0.05	0.05	0.05	0.05	0.05	0.05
Power		0.8	0.8	0.8	0.8	0.8	0.8
One-sided or two-sided?		Two	Two	Two	Two	Two	Two
Average cluster size – level 1 per level 2		30	8	27	9	23	8
Average cluster size – level 2 per level 3		1.7	1.7	1.6	1.6	1.6	1.6
No. of schools	Intervention	63	63	62	62	60	59
	Control	63	63	62	62	61	60
	Total:	126	126	124	124	121	119
No. of pupils	Intervention	3,213	857	2,748	799	2,167	700
	Control	3,213	857	2,656	849	2,273	710
	Total:	6,426	1,714	5,404	1,737	4,440	1,410

Attrition

As shown in Table 11, of the pupils who were randomised, baseline and endline outcome measures were obtained for 4,440 (82%) pupils. As previously noted, attrition resulted from schools withdrawing from the study or due to missing baseline

and/or endline outcome data. The primary analysis included 2,167 pupils in the intervention group, compared to 2,747 pupils originally randomised (ratio 2,167:2,747). In the control group, 2,273 pupils were included, compared to 2,656 who were randomised (ratio 2,273:2,656).

Table 11: Pupil-level attrition from the trial (primary outcome)

		Intervention	Control	Total
No. of pupils	Randomised	2,747[a]	2,656	5,403
	Analysed	2,167	2,273	4,440
Pupil attrition (from randomisation to analysis)	Number	580	383	963
	Percentage	21%	14%	18%

[a] *The study's SAP (Morris and Gellen, 2025) recorded that 2,748 pupils were in schools allocated to the intervention group at randomisation. One pupil withdrew from the study subsequent to publication of the SAP hence the size of the intervention group reported in Table 11 at randomisation is 2,747.*

Pupil and school characteristics

In the 'as randomised' sample similarities between the intervention and control groups in terms of school-level characteristics are reassuring. For example, the average proportion of pupils eligible for FSM was 28.8% in intervention group schools and 26.7% in the control group schools. Similarly, the average Key Stage 2 reading scaled score was 105 in intervention group schools, compared to 104 in control group schools.

There were more schools from rural areas in the control group (19.7%) compared to in the intervention group (11.3%). On the other hand, both arms had a similar ratio of single and multi-form schools. There were also comparable distributions of schools across geographical regions by trial arm.

At the pupil level, there were similar proportions in both trial arms across the main categorical variables collected prior to randomisation. Moreover, the average values of age, FAR self-efficacy score, and FAR motivation score at baseline were comparable.

Table 12: Baseline characteristics of groups as randomised

School level (categorical)	National-level mean	Intervention group		Control group	
		n/N (missing)	Count (%)	n/N (missing)	Count (%)
Region: East Midlands East of England London North East North West South East South West West Midlands Yorkshire and The Humber		62/62 (0)	6 (9.7) <5 (–) 6 (9.7) <5 (–) 18 (29) 8 (12.9) <5 (–) 6 (9.7) 10 (16.1)	61/61 (0)	<5 (–) 8 (13.1) 7 (11.5) <5 (–) 16 (26.2) 7 (11.5) <5 (–) 6 (9.8) 7 (11.5)
School area: Rural Urban		62/62 (0)	7 (11.3) 55 (88.7)	61/61 (0)	12 (19.7) 49 (80.3)
Form of entry: Single Multi		62/62 (0)	30 (48.4) 32 (51.6)	61/61 (0)	32 (52.5) 29 (47.5)
Ofsted rating: Outstanding		62/62 (0)	3 (4.8)	61/61 (0)	7 (11.5)

Good Requires improvement Inadequate			57 (91.9) 1 (1.6) 1 (1.6)		50 (82) 3 (4.9) 1 (1.6)	
School level (continuous)		n/N (missing)	Mean (SD)	n/N (missing)	Mean (SD)	
Proportion of FSM pupils	24.85	62/62 (0)	28.8 (16.6)	61/61 (0)	26.7 (14.6)	
Key Stage 2 reading average scaled score	105	61/62 (1)	105 (2.34)	61/61 (0)	104 (2.23)	
Pupil level (categorical)		n/N (missing)	Count (%)	n/N (missing)	Count (%)	
Gender: Male Female		2,747 /2,747 (0)	1,369 (50) 1,378 (50)	2,643/2,656 (13)	1,360 (51) 1,283 (48)	
EAL pupil: Yes No		2,494/2,747 (253)	574 (23) 1,920 (77)	2,499/2,656 (157)	608 (24) 1,891 (76)	
FSM pupil: Yes No		2,583/2,747 (164)	871 (34) 1,712 (66)	2,501/2,656 (155)	819 (33) 1,682 (67)	
Designated SEND: Yes No		2,583/2,747 (164)	568 (22) 2,015 (78)	2,501/2,656 (155)	512 (20) 1,989 (80)	
Key Stage 1 Reading Teacher Assessment EM to PK4 WTS EXS GDS		2,558/2,747 (189)	238 (9) 678 (27) 1,286 (50) 356 (14)	2,496/2,656 (160)	274 (11) 630 (25) 1,200 (48) 392 (16)	
Pupil level (continuous)		n/N (missing)	Mean (SD)	n/N (missing)	Mean (SD)	Effect size
Age (in months)	Not applicable	2,747/2,747 (0)	124 (3.67)	2,656/2,656 (0)	124 (3.63)	Not applicable
FAR self-efficacy score	Not applicable	2,341/2,747 (406)	104 (23.3)	2,338/2,656 (318)	103 (24.8)	0.06
FAR motivation score	Not applicable	2,341/2,747 (406)	51.7 (13.5)	2,338/2,656 (318)	51.8 (13.5)	0.02

School-level and pupil-level baseline characteristics by trial arm in the 'as analysed' sample are presented in Table 13. The low level of school attrition resulted in minimal changes in the balance between the two trial arms in school-level characteristics in the 'as analysed' as compared to the 'as randomised' samples. Geographical distribution of the schools and proportion of the schools' by 'form entry' remained similar. Although the proportion of rural area schools is smaller in the intervention group compared to the control group (11.7% and 19.7%, respectively), it remained similar to that seen in the 'as randomised' sample. This represents the most notable imbalance between groups. However, rurality was not identified a priori as a key predictor of outcomes, and there is no clear evidence from the data to suggest that it is strongly associated with reading attainment. As such, imbalances by rurality are unlikely to be important. The proportion of FSM pupils was 29.1 in the intervention arm, and 26.3 in the control arm. Key Stage 2 reading average scaled scores were 105 in both arms.

At the pupil level, in the 'as analysed' sample, both categorical and continuous variables remained broadly balanced despite attrition from the sample at the pupil level.

Table 13: Baseline characteristics of groups as analysed

School level (categorical)	National-level mean	Intervention group		Control group		
		n/N (missing)	Count (%)	n/N (missing)	Count (%)	
Region: East Midlands East of England London North East North West South East South West West Midlands Yorkshire and The Humber		60/60 (0)	5 (8.3) <5 (–) 6 (10) <5 (–) 17 (28.3) 8 (13.3) <5 (–) 6 (10) 10 (16.7)	61/61 (0)	<5 (–) 8 (13.1) 7 (11.5) <5 (–) 16 (26.2) 7 (11.5) <5 (–) 6 (9.8) 7 (11.5)	
School area: Rural Urban		60/60 (0)	7 (11.7) 53 (88.3)	61/61 (0)	12 (19.7) 49 (80.3)	
Form of entry: Single Multi		60/60 (0)	29 (48.3) 31 (51.7)	61/61 (0)	32 (52.5) 29 (47.5)	
Ofsted rating: Outstanding Good Requires improvement Inadequate		60/60 (0)	3 (5) 55 (91.7) 1 (1.7) 1 (1.7)	61/61 (0)	7 (11.5) 50 (82) 3 (4.9) 1 (1.6)	
School level (continuous)		n/N (missing)	Mean (SD)	n/N (missing)	Mean (SD)	
Proportion of FSM pupils	24.85	60/60 (0)	29.1 (15.2)	61/61 (0)	26.3 (13.6)	
Key Stage 2 reading average scaled score	105	59/60 (1)	105 (2.22)	61/61 (0)	105 (2)	
Pupil level (categorical)		n/N (missing)	Count (%)	n/N (missing)	Count (%)	
Gender: Male Female		2,165/2,167 (2)	1,081 (50) 1,084 (50)	2,271/2,273 (2)	1,153 (51) 1,118 (49)	
EAL pupil: Yes No		2,163/2,167 (4)	497 (23) 1,666 (77)	2,269/2,273 (4)	535 (24) 1,734 (76)	
FSM pupil: Yes No		2,164/2,167 (3)	700 (32) 1,464 (68)	2,270/2,273 (3)	710 (31) 1,560 (69)	
Designated SEND: Yes No		2,164/2,167 (3)	447 (21) 1,717 (79)	2,270/2,273 (3)	434 (19) 1,836 (81)	
Key Stage 1 Reading Teacher Assessment: EM to PK4 WTS EXS GDS		2,167/2,167 (0)	186 (9) 567 (26) 1,113 (51) 301 (14)	2,273/2,273 (0)	222 (10) 567 (25) 1,115 (49) 369 (16)	
Pupil-level (continuous)		n/N (missing)	Mean (SD)	n/N (missing)	Mean (SD)	Effect size (95% CI)

Age (in months)	Not applicable	2,167/2,167 (0)	124 (3.61)	2,273/2,273 (0)	124 (3.6)	Not applicable
FAR self-efficacy score	Not applicable	2,035/2,167 (132)	105 (22.9)	2,130/2,273 (132)	104 (24.5)	0.06 (-0.04; 0.16)
FAR motivation score	Not applicable	2,035/2,167 (132)	51.8 (13.4)	2,130/2,273 (132)	51.8 (13.5)	0.01 (-0.11; 0.12)

Outcomes and analysis

Primary analysis

The primary analysis sought to estimate the effects of Reading Plus on reading attainment, which was the primary outcome, measured using the New PiRA Year 5 Summer Term Test. Pupils' Key Stage 1 Reading Teacher Assessment was used as a covariate in an adjusted analysis. The correlation between the New PiRA Year 5 Summer Term Test and pupil's Key Stage 1 Reading Teacher Assessment was 0.62. As noted earlier, three schools left the trial, resulting in available endline data for 121 of the 124 randomised schools. Data for both the baseline and endline measures was obtained for 4,440 pupils out of 5,403, representing 82% of the randomised sample. Figure 6 presents histograms of endline New PiRA Year 5 Summer Term Test scores for both intervention and control groups. As discussed in the 'Methods' section above, the online version of the New PiRA Year 5 Summer Term Test appears to yield scores that have a very slight floor effect compared to the paper version of the test. However, the scores still appear approximately normally distributed.

The average New PiRA Year 5 Summer Term Test scores were 15.20 (95% CI: 14.37; 16.04) for the intervention group and 15.00 (95% CI: 14.31; 15.69) for the control group. The unadjusted mean difference was 0.17 (95% CI: -0.93; 1.27). The adjusted estimate was derived using a linear mixed-effects model (Equation 1 in the 'Methods' section of this report). The residuals from the adjusted model are approximately normally distributed, as illustrated by the Quantile-Quantile (Q-Q) plot in Figure 7.

Figure 6: Histogram of the endline unstandardised New PiRA Year 5 Summer Term Test scores for the primary analysis

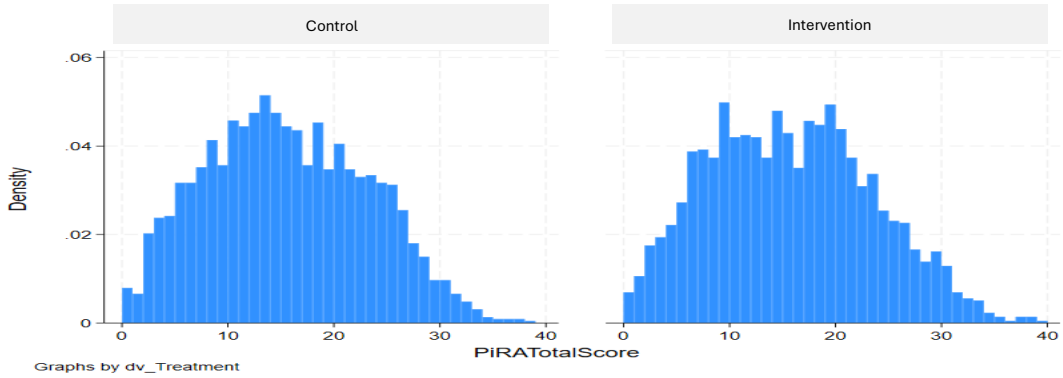
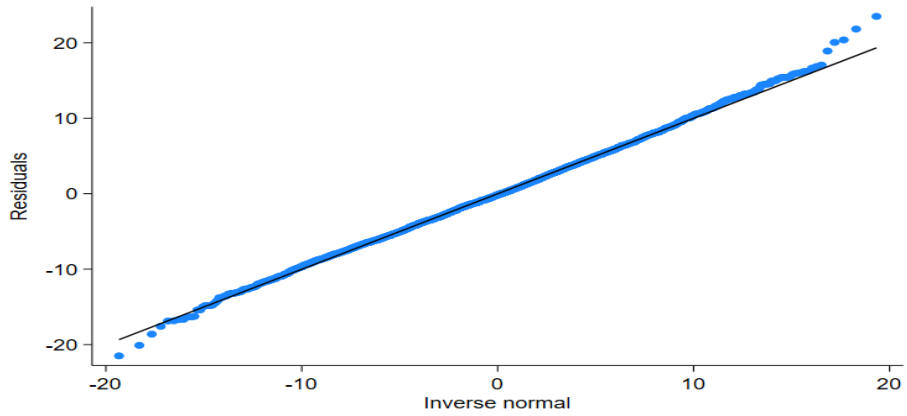


Figure 7: The New PiRA Year 5 Summer Term Test Q-Q residuals Q-Q plot



The adjusted mean difference was 0.22 (95% CI: -0.75; 1.19), which equates to Hedges' g effect size of 0.03 (95% CI: -0.10; 0.15). The effect size is small (equivalent to zero months' progress) and the CI contains a range of both positive and negative values, showing that our data are consistent with values ranging from medium-sized positive effects to medium-sized negative effects. The p-value of p=0.66 is reasonably large, suggesting that our data are compatible with the null hypothesis that the intervention does not improve reading attainment. The total variance used for estimation of the effect size was 59.00. It was comprised of school-, class-, and pupil-level variances 5.73, 2.85, and 50.42, respectively. In the adjusted model, ICC was 0.14 (95% CI: 0.10; 0.20) at the school level and 0.03 (95% CI: 0.01; 0.06) at the class level. For the unadjusted (empty) model, the ICC values were 0.10 (95% CI: 0.07; 0.13) at the school level and 0.05 (95% CI: 0.03; 0.08) at the class level.

In summary, the effect of Reading Plus on pupil's reading attainment is small, and pupils receiving the intervention made the equivalent to zero months' additional progress. The result comes with a high degree of uncertainty reflected in a wide CI, covering both negative effect sizes as low as -0.10 as well as positive effect sizes as high as 0.15.

Table 14: Primary analysis

Outcome	Unadjusted means				Effect size		
	Intervention group		Control group				
	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n (intervention; control)	Hedges' g (95% CI)	P-value
PiRA score	2,167/2,747 (580)	15.20 (14.37; 16.04)	2,273/2,656 (383)	15.00 (14.31; 15.69)	4,440 (2,167; 2,273)	0.03 (-0.10; 0.15)	0.66

Secondary analysis

The secondary analysis looks at the effects of Reading Plus on outcomes derived from three assessments in the KTEA-3 instruments and two outcomes derived from the FAR questionnaire. All secondary analysis were exploratory. The KTEA-3 was administered individually by a trained test administrator and evaluated three aspects of reading: comprehension; fluency; and vocabulary. For this assessment, ten pupils were randomly selected prior to randomisation from each school to complete the assessments at endline. Key Stage 1 Teacher Assessment of reading was used as a covariate in the adjusted analysis of the KTEA-3 measures, with correlations of 0.59, 0.53, and 0.62, respectively between the Key Stage 1 Teachers Assessment and the outcomes derived from the KTEA-3 at pupil level. At school level, these correlations were calculated to be 0.003, 0.67, and 0.37, respectively.

The FAR test was delivered to pupils one-on-one online and was designed to assess pupils' reading self-efficacy and motivation to read. The FAR test was administered to all eligible pupils at baseline as well as at endline. The correlation between baseline and endline was 0.54 and 0.55 for self-efficacy and motivation, respectively.

KTEA-3 comprehension

The KTEA-3 comprehension measures were collected from 1,017 pupils out of 1,220 eligible/selected pupils (see Table 15). The unadjusted mean KTEA-3 comprehension scores were similar across the arms of the trial: 58.26 (95% CI: 57.01; 59.50) for the intervention group and 57.68 (95% CI: 56.46; 58.90) for the control group. The unadjusted difference in means was 0.57 (95% CI: -1.17; 2.31) (Appendix D Table 1).

In the adjusted analysis, the difference in means was 0.56 (95% CI: -0.93; 2.05), corresponding to Hedges' g of 0.04 (95% CI: -0.07; 0.16) (Appendix D Table 1 and Table 15). This represents a small effect size (equivalent to zero months' progress), with a CI containing both negative and positive values. The p-value is again relatively large standing at p=0.46 (Table 15), suggesting a high degree of compatibility of our result with the null hypothesis. Since the models were specified as two-level linear models (school and pupil levels), the variances used to estimate the effect size were 5.55 at school and 151.38 at pupil level (Appendix D Table 2). The ICC was 0.04 (95% CI: 0.01; 0.11) for the adjusted model and 0.05 (95% CI: 0.02; 0.12) for the unadjusted (empty) model (Appendix D Table 2).

In summary, our results suggest that Reading Plus had a small effect on reading comprehension. Again, this result comes with a high degree of uncertainty reflected in a wide CI embracing effect sizes that are negative and as low as -0.07, and positive and as high as 0.18.

KTEA-3 fluency

As shown in Table 15, KTEA-3 fluency scores were collected for 1,037 pupils. Consistent with the approach used for the KTEA-3 comprehension analysis, the models were specified as two-level linear mixed models. The unadjusted mean fluency scores were 34.03 (95% CI: 33.16; 34.89) for the intervention group and 33.28 (95% CI: 32.16; 34.39) for the control group, resulting in an unadjusted difference in means of 0.76 (95% CI: -0.66; 2.18) (Appendix D Table 1).

In the adjusted analysis, the difference in mean was 0.66 (95% CI: -0.48; 1.8), corresponding to a Hedges' g of 0.07 (95% CI: -0.05; 0.20) (Appendix D Table 1 and Table 15). Although the effect size is nearly twice as big as that for KTEA-3 comprehension, it remains small. The CI crosses the zero boundary, containing negative and positive values, and the reported p-value, p=0.26 (Table 15), is still quite large suggesting some compatibility with the null hypothesis. The total variance applied in effect size estimation was 85.04 (Appendix D Table 1), with 6.66 attributed to school level and 78.38 to pupil level (Appendix D Table 2). The ICC value at the school level was 0.06 (95% CI: 0.03; 0.12) for the adjusted model and 0.08 (95% CI: 0.04; 0.14) for the unadjusted (empty) model (Appendix D Table 2).

The estimated effect size on reading fluency was slightly higher than that obtained for comprehension; however, it remained small. The corresponding CI included more positive than negative values but was relatively wide, indicating a considerable degree of uncertainty surrounding the estimate. In summary, the findings suggest that Reading Plus may have exerted a small effect on reading fluency, although this should be interpreted cautiously considering the uncertainty associated with the estimate.

KTEA-3 vocabulary

Data on KTEA-3 vocabulary was available for 1,020 pupils (see Table 15). The raw, unadjusted mean scores were 28.47 (95% CI: 27.85; 29.09) for the intervention group and 27.69 (95% CI: 26.87; 28.52) for the control group, with an unadjusted difference in means of 0.79 (95% CI: -0.24; 1.82) (Appendix D Table 1).

In the adjusted analysis, the estimated difference in means was 0.77 (95% CI: -0.11; 1.65), translating to a Hedges' g of 0.11 (-0.02; 0.26) (Appendix D Table 1 and Table 15). The 95% CI contains zero and positive as well as a small number of negative values, but this estimate is the largest effect size among all secondary and primary outcomes. The p-value, standing at p=0.09 is also relatively small (Table 15). The total variance used in effect size estimation was 45.25 (Appendix D Table 1), with 3.39 at the school level and 41.86 at the pupil level (Appendix D Table 2). The ICC values were 0.1 (95% CI: 0.06; 0.17) for the adjusted model and 0.07 (95% CI: 0.04; 0.14) for the unadjusted (empty) model (Appendix D Table 2).
In summary, our central estimate of the effect of Reading Plus on reading vocabulary was an effect size of 0.11. By the standard of contemporary field trials in education (Kraft, 2020) this would rank as a 'medium-sized' effect. The associated

CI contains zero, but its coverage embraces more positive than negative values. Moreover, the p-value for the test is quite small.

FAR self-efficacy

FAR self-efficacy scores were collected for 3,910 pupils at both baseline and endline (see Table 15). The unadjusted mean self-efficacy scores at endline were 101.97 (95% CI: 100.17; 103.77) for the intervention group and 103.12 (95% CI: 101.34; 104.90) for the control group, giving an unadjusted difference in means of -1.15 (95% CI: -3.68; 1.38) (Appendix D Table 1).

The adjusted difference in mean was -1.79 (95% CI: -4.03; 0.45), which corresponds to a Hedges' g of 0.00 (95% CI: -0.01; 0.00) (Appendix D Table 1 and Table 15). The p-value associated with this estimate was 0.12. The total variance, which was used to estimate the effect size was 582.6, with school-level variance of 16.67, class-level variance of 19.05, and pupil-level variance of 546.88 (see Appendix D Table 1 and Appendix D Table 2). The ICC values for the school level were 0.03 (95% CI: 0.01; 0.08) and 0.03 (95% CI: 0.01; 0.06) for the class level for the adjusted model (Appendix D Table 2). For the unadjusted model, the ICC values were 0.03 (95% CI: 0.01; 0.07) at the school level and 0.03 (95% CI: 0.01; 0.06) at the class level (Appendix D Table 2).

To summarise, our result is consistent with the conclusion that Reading Plus had no discernible effect on pupils' reading self-efficacy.

FAR motivation

FAR motivation scores were obtained for 3,910 pupils at both baseline and endline (see Table 15). The unadjusted difference in means was -0.53 (95% CI: -2.31; 1.26), with unadjusted mean motivation scores at endline of 38.69 (95% CI: 37.57; 39.81) in the intervention group and 39.21 (95% CI: 38.17; 40.25) in the control group.

The adjusted difference in means was -0.43 (95% CI: -1.83; 0.96) (Appendix D Table 1), corresponding to a Hedges' g of -0.03 (95% CI: -0.13; 0.07) (Table 15). The effect size is small and the CI includes zero and covers a wide range of both positive and negative values, reported p-value p=0.54 (Table 15). The total variance used to estimate the effect size was 204.6 (Appendix D Table 1), which consisted of a school-level variance of 8.11, class-level variance of 13.96, and pupil-level variance of 182.53 (Appendix D Table 2). The ICC values for the school level were 0.04 (95% CI: 0.02; 0.09) and 0.07 (95% CI: 0.03; 0.10) for the class level for the adjusted model (Appendix D Table 2). For the unadjusted model the ICC values were 0.03 (95% CI: 0.01; 0.09) at the school level and 0.07 (95% CI: 0.03; 0.10) at the class level (Appendix D Table 2).

In summary, even though our results suggest that Reading Plus may have had a negative effect on pupils' motivation to read, this result comes with a higher degree of uncertainty, and the CI contains zero.

Table 15: Secondary analysis

Outcome	Unadjusted means				Effect size		
	Intervention group		Control group				
	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n (intervention; control)	Hedges' g (95% CI)	P-value
KTEA-3 Comprehension	505 (108)	58.26 (57.01; 59.50)	512 (95)	57.68 (56.46; 58.90)	1,017 (505; 512)	0.04 (-0.07; 0.16)	0.46
KTEA-3 Fluency	518 (95)	34.03 (33.16; 34.89)	519 (88)	33.28 (32.16; 34.39)	1,037 (518; 519)	0.07 (-0.05; 0.20)	0.26
KTEA-3 Vocabulary	511 (102)	28.47 (27.85; 29.09)	509 (98)	27.69 (26.87; 28.52)	1,020 (511; 509)	0.11 (-0.02; 0.26)	0.09
FAR self-efficacy	1,928 (819)	101.97 (100.17; 103.77)	1,982 (674)	103.12 (101.34; 104.90)	3,910 (1,928; 1,982)	0.00 (-0.01; 0.00)	0.12
FAR motivation	1,928 (819)	38.69 (37.57; 39.81)	1,982 (674)	39.21 (38.17; 40.25)	3,910 (1,928; 1,982)	-0.03 (-0.13; 0.07)	0.54

Analysis in the presence of non-compliance

CACE analysis is conducted when there is evidence that a significant portion of the intervention and/or control group did not comply with the treatment to which they were randomised and in the case of the intervention group fail to take-up the programme. In the case of the control group, non-compliance would see members of this group accessing the treatment.

This study was designed so that non-compliance was impossible among the control group. Therefore, compliance analysis focuses solely on non-compliance among the intervention group. Its purpose is to estimate the effect of the intervention on those that comply with their assignment. In this study, compliance was defined at the pupil level.

Compliance as defined in this study had four elements. For a pupil to be deemed non-compliant the following elements were taken into account:

1. Whether the school failed to send teachers to Reading Plus training.
2. The school sent teachers to training, but there is no evidence that the school subsequently went on to use the Reading Plus platform.
3. The school sent teachers to training, and there is evidence that Reading Plus was used in the school but a pupil engaged with fewer than 15 texts over the three terms the programme ran for.
4. The school sent teachers to training, and there is evidence that Reading Plus was used in the school but a pupil engaged with 15 or fewer texts over the first two terms and no texts in the third term.

Based on analysis of compliance data obtained through the Reading Plus platform and provided by the delivery team, we found the following:

1. A total of 21 pupils were non-compliant because they were taught by a teacher that had not be trained to use Reading Plus due to the school not sending them to training.
2. A total of 87 pupils were deemed non-compliant because they were in a school randomised to the intervention which sent teachers to training but the school never used the platform.
3. Of schools that sent teachers to training and used the platform, fewer than ten children engaged with 15 or fewer texts.
4. Of schools that sent teachers to training and used the platform, fewer than ten children engaged with 15 or fewer texts in the first and second terms, and no texts in the third term.

In total, 118 pupils would be deemed non-compliant through meeting conditions 1, 2, and 3 above; while the same number would be deemed non-compliant through meeting conditions 1, 2, and 4 above. Overall, the maximum rate of non-compliance based on these two definitions is 3%. We judge this to be too low to warrant compliance analysis.

Missing data analysis

To address the extent and potential consequences of missing data at endline in the primary outcome, we first examined the amount of missing data in both trial arms. To complete the primary analysis, we matched our trial records to the NPD in the ONS SRS. When this process was complete (schools that withdrew from the trial were not included in the NPD matching process) and the 'as analysed' sample formed, we calculated the rate at which endline PiRA test scores were missing in that sample. We found that in total 8% of PiRA scores were missing in the control group and 11% in the intervention group.[8] Since these proportions exceeded the threshold specified in the SAP (Morris and Gellen, 2025) (5% per arm), a missing data analysis was undertaken.

[8] Note that these rates of missingness are not the same as the total rates of missingness when comparing total samples at randomised and at analysis in the two arms. This is because analysis of missingness requires access to NPD data which are available only for a subset of the full trial sample.

First, a mixed-effects logistic regression model was estimated, where the dependent variable was a binary indicator of whether a pupil's PiRA score was obtained at endline. Covariates included as predictors in the model were: Key Stage 1 Reading Teacher Assessment, SEND status, FSM status, EAL status, gender, and FAR baseline measures. The model identified Key Stage 1 Reading Teacher Assessment, SEND status, and FSM status as associated with the likelihood of observing a PiRA score at endline. Consequently, these variables were incorporated into a missing data sensitivity test involving multiple imputation.

Before we ran the multiple imputation analysis, an OLS model with cluster-robust standard errors was fitted, using a specification consistent with the primary analysis model. This served as a benchmark for evaluating the imputation results. This was required because the statistical software used requires this form of statistical estimation in multiple imputation for clustered data.

The imputation process involved generating ten complete datasets using the "`mi impute chained`" command in STATA version 19.5. Each imputed dataset contained 4,927 observations, compared to 4,440 in the primary analysis. Subsequently, the "`mi estimate`" command was used to fit a model analogous to the benchmark OLS model. The results indicated that the adjusted difference in means from the imputed datasets was 0.23 (95% CI: -0.69; 1.15), closely aligning with the adjusted difference in means of 0.29 (95% CI: -0.72; 1.30) obtained from the benchmark OLS model. Furthermore, the results are also similar to those obtained from the restricted maximum likelihood linear mixed-effects model estimated in the primary outcome analysis above, of 0.22 (95% CI : -0.75; 1.19). The similarity between the OLS regression results using imputed datasets and those from the benchmark OLS regression, and the primary analysis model, indicate that the missing data likely follow a MAR process.

The SAP (Morris and Gellen, 2025) states that a significant imbalance in attrition between the trial arms would warrant estimation of the intervention effects using Lee bounds (Lee, 2005). As previously mentioned, from the data available for analysis in the ONS SRS, the difference between the arms of the trial was 3% (11% attrition in the intervention arm and 8% attrition in the control arm). It was decided that the imbalance is not big enough to justify the additional analysis.

Subgroup analyses

The SAP (Morris and Gellen, 2025) specifies two subgroups: pupils eligible for FSM within the past six years; and those identified as SEND. For each subgroup, pupils were divided into two categories: those with the characteristic; and those without it. This resulted in four groups for analysis: FSM; non-FSM; SEND; and non-SEND. The analysis followed the same specifications as the primary analysis.

For the FSM subgroup, results indicated that pupils eligible for FSM appeared to benefit in a similar way from the intervention to non-FSM pupils. The adjusted difference in means was 0.34 (95% CI: -0.8; 1.49) for the FSM group and 0.29 (95% CI: -0.7; 1.29) for the non-FSM group. These correspond to Hedges' g of 0.05 (95% CI: -0.11; 0.20), and 0.04 (95% CI: -0.09; 0.17), respectively (Table 16). However, both CIs included zero and covered a wide range of both negative and positive values. Additionally, a model containing an interaction between the intervention group indicator and FSM indicator was also run. The resulting coefficient on the interaction term had a CI that was wide containing positive and negative values (0.34, 95% CI: -0.42; 1.09). This result is consistent with the conclusion that the intervention did not benefit FSM pupils more nor less than non-FSM pupils.

In contrast, pupils identified as SEND seemed to gain more from the intervention than non-SEND pupils. The adjusted difference in means was 0.51 (95% CI: -0.83; 1.85) for SEND pupils and 0.2 (95% CI: -0.81; 1.21) for non-SEND pupils, translating to Hedges' g of 0.07 (95% CI: -0.12; 0.26), which is equivalent to one month's progress, and 0.03 (95% CI: -0.11; 0.17), respectively (Table 16). Although the effect size for the SEND subgroup was notably larger than for the non-SEND subgroup, the CI for both effects contained zero and were wide suggesting they were imprecisely estimated. A further model which contained an interaction term between SEND status and intervention group variable revealed a small effect with a positive sign but that also had a wide CI containing zero (B=0.22, 95% CI: -0.62; 1.06).

Table 16: Subgroup analysis

Outcome	Unadjusted means		Effect size
	Intervention group	Control group	

	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n (intervention; control)	Hedges' g (95% CI)	P-value
FSM only	700 (171)	13.39 (12.46; 14.32)	710 (109)	13.13 (12.31; 13.94)	1,410 (700; 710)	0.05 (-0.11; 0.20)	0.56
Non-FSM only	1,464 (248)	15.99 (15.16; 16.83)	1,560 (122)	15.74 (15.01; 16.46)	3,024 (1,410; 1,560)	0.04 (-0.09; 0.17)	0.57
SEND only	447 (121)	10.24 (9.09; 11.40)	434 (78)	9.86 (8.98; 10.74)	881 (447; 434)	0.07 (-0.12; 0.26)	0.45
Non-SEND only	1,717 (298)	16.46 (15.62; 17.30)	1,836 (153)	16.28 (15.53; 17.02)	3,553 (1,717; 1,836)	0.03 (-0.11; 0.17)	0.70

Additional analyses and robustness checks

Two sensitivity analyses were conducted for the primary outcome. The first examined the inclusion of a continuous Key Stage 1 reading test scaled score as a covariate replacing the Key Stage 1 Reading Teacher Assessment, as the covariate in an adjusted analysis. The adjusted mean difference was 0.23 (95% CI: -0.75; 1.20), and the estimated Hedges' g effect size was 0.03 (95% CI: -0.10; 0.16). These findings closely mirror the primary analysis, indicating that using a continuous Key Stage 1 reading measure does not add explanatory value compared to the categorical Key Stage 1 Reading Teacher Assessment.

The second sensitivity analysis incorporated additional covariates into the primary analysis model. These included: baseline self-efficacy and motivation scores from the FAR questionnaire, FSM status, SEND status, EAL status, gender, school size (form entry), and the average school-level Key Stage 2 reading scores over the past three years. The adjusted mean difference was -0.038 (95% CI: -0.96; 0.88), and the estimated Hedges' g effect size was -0.01 (95% CI: -0.13; 0.12). These results are very similar to those from the primary analysis, indicating that the findings are robust to the inclusion of additional covariates.

Implementation and Process Evaluation results

The IPE proceeded as planned with the exception of the withdrawal of one of the case study schools which meant that a second visit was not undertaken. One observation of the Reports Training Session 2 was not undertaken as the school staff member did not attend the scheduled session (which was subsequently rearranged but without an observation taking place). Table 17 summarises the data collected.

Table 17: IPE data collection summary

Data collection methods	Participants/data sources (planned sample)	Participants/data sources (responses received)
Headteacher survey, baseline	All, n=126	88/121
Teacher survey, baseline	All, n=250	138/209
Observation field notes of: Welcome webinar; Initial training session; Reports Training Session 1; Reports Training Session 2	One x Welcome webinar; three x Initial training session; three x Reports Training Session 1; three x Reports Training Session 2 Total planned: ten	One x Welcome webinar; three x Initial training session; three x Reports Training Session 1; two x Reports Training Session 2 9/10
Observation field notes of Reading Plus session	Case study field notes (at all six case studies on two occasions, n = 12)	11/12
Interviews with headteachers/senior leaders and teachers/teaching assistants	Headteachers/senior leaders (n = 6 x 2) Teachers (n = 6 x 2)	Headteachers/senior leaders (seven, two of whom interviewed twice); Teachers (nine, six of whom interviewed twice with two also representing the senior leadership team [SLT] at second case study visit); teaching assistants (four, two of whom interviewed twice)
Interviews with a group of pupils (two visits)	Case study school pupil sample (from six schools, six to eight pupils on two occasions, n = >36)	Six groups on first visit; five groups on second visit (n=66)
Headteacher survey (intervention), endline	All, n=63	40/58
Headteacher survey (control), endline	All, n=63	42/61
Teacher survey (intervention), endline	All, n=125	59/99
Teacher survey (control), endline	All, n=125	78/107
Interviews with reading consultants	All, n=2	2/2

Usual practice

This first section addresses IPE RQ1 using survey data from Year 5 teachers and headteachers in intervention and control schools at baseline and endline. Some caution is needed in the interpretation of survey results due to differential response rates, which were particularly low from intervention schoolteachers at endline and control schools at baseline. We begin by reporting on the usual reading practices in intervention and control schools at baseline. We then compare these to reading practices during the trial, first in control schools and then alongside Reading Plus in intervention schools.

Summary of findings

- Baseline findings showed that both intervention and control schools already had well-established reading provision, with regular teaching of comprehension, vocabulary, and fluency, widespread use of guided reading, and generally positive reading cultures.
- Control schools had stronger existing provision and a greater number of reading programmes than intervention schools and were more likely than intervention schools to say that two or more were available (control 42%, n=18; intervention 33%, n=15).
- During the intervention year, Reading Plus was commonly used as a replacement for existing reading provision rather than as an additional intervention.
- Teachers reported that Reading Plus did not fully address some aspects of reading instruction, particularly extended written comprehension, oral fluency, and prosody, which continued to require teacher-led input. This may help explain why schools retained substantial elements of their existing reading provision alongside the programme.

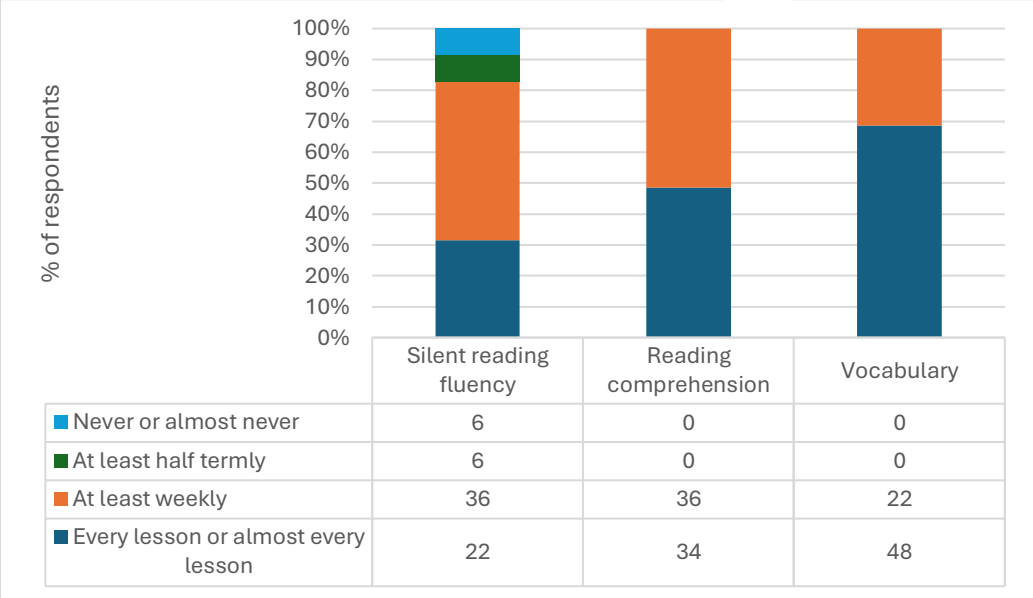
Usual practice at baseline

Teaching reading

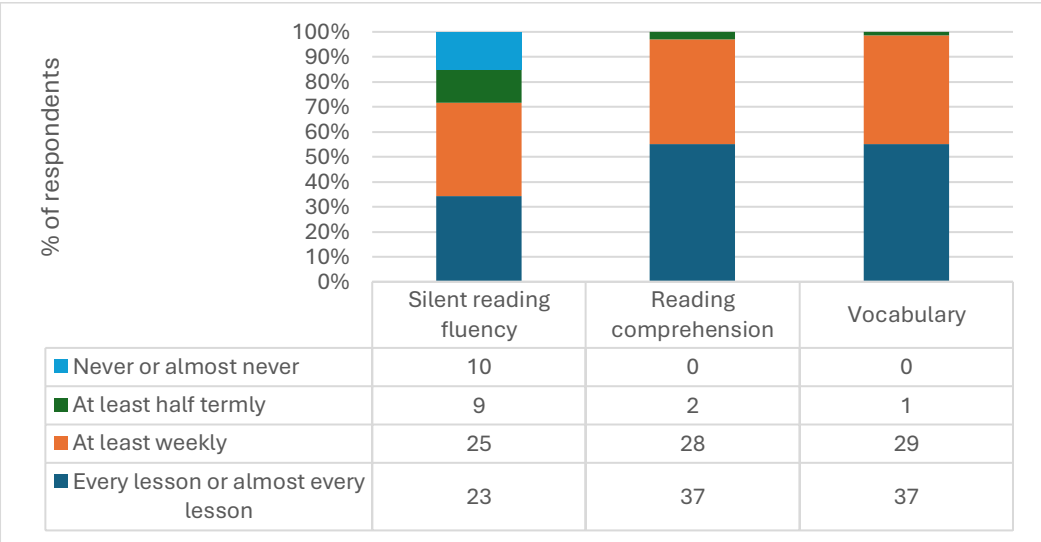
Teachers were asked how often they teach the core aspects of reading that are covered by Reading Plus lessons. Results are presented in Figure 8. Results were similar across the two groups. Out of the three aspects that we asked about, silent reading fluency tended to be taught less frequently than comprehension and vocabulary. All respondents in intervention schools and almost all in control schools taught reading comprehension and vocabulary at least weekly. In terms of silent reading fluency, 82% (n=58) of teachers in the intervention group and 71% (n=48) in the control group were teaching it at least weekly.

Figure 8: Frequency of teaching aspects of reading at baseline in (a) intervention schools and (b) control schools

(a)



(b)



Reading programmes

Around a quarter of teachers in each group reported that they used a reading programme in Year 5 for all pupils irrespective of ability (intervention 26%, n=18; control 24%, n=16). Accelerated Reader and Lexia Reading Core5® were commonly named by teachers as the reading programmes that they used. For example, one teacher from a control school said that pupils used Lexia at least once a week in school and were encouraged to use it at home as part of their homework. And a

teacher from an intervention school said that pupils used Accelerated Reader at home and daily in school during silent reading.

Nearly half of respondents to the teacher survey in each group reported that they used a reading programme in Year 5 for pupils who were struggling to read (intervention 47%, n=33; control 48%, n=32). Read Write Inc. and Reciprocal Reading were commonly named by respondents, alongside Little Wandle and Toe by Toe.

Headteachers were also asked about the reading programmes that were available at the time for Year 5 pupils in their school. The number of programmes available varied and ranged from none to three or more, with respondents in intervention schools more likely than control schools to say that none were available (intervention 33%, n=15; control 21%, n=9). Control schools were more likely than intervention schools to say that two or more were available (control 42%, n=18; intervention 33%, n=15). Popular reading programmes included: Read Write Inc.; Accelerated Reader; Lexia; Lightening Squad; Reciprocal Reading; Cracking Comprehension; Pathways to Read; and Toe by Toe.

Reasons for reading programme choice varied. Most commonly headteachers said that the chosen programme helped to develop specific skills such as phonics, comprehension, vocabulary, and oracy (control, n=11; intervention, n=30). Programme accessibility and tailoring to individual pupil needs were also popular responses (control, n=4; intervention, n=4). Intervention schools were slightly more likely to be targeting specific subgroups of pupils than not (59%, n=24) compared to control schools (51%, n=24). Where a subgroup was identified, this was always in terms of pupils needing additional support with reading; there were no programmes offered by respondents' schools specifically to more able readers. Reading programmes in both groups were likely to be delivered as an additional activity (intervention 78%, n=32; control 77%, n=36) rather than part of the school's core literacy lessons (intervention 20%, n=8; control 23%, n=11).

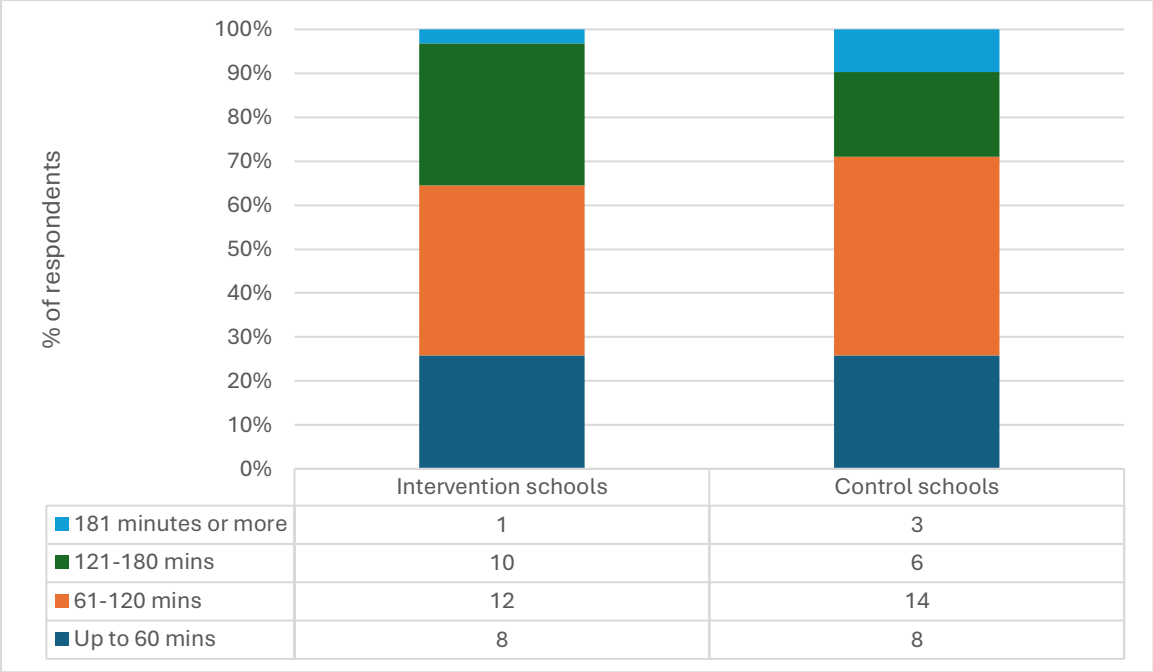
Headteachers also mentioned availability of in-built diagnostics and assessment tools as justifications for using a reading programme (control, n=4; intervention, n=5). In most schools across both groups, programmes were likely to be delivered in-person (intervention 73%, n=30; control 72%, n=34) rather than online (intervention 22%, n=9; control 21%, n=10). Individual comments included being a programme that could be delivered by a teaching assistant and the provision of clear guidance for teachers. In both groups, most reading programmes being delivered by schools involved a combination of silent and oral reading fluency (intervention 49%, n=20; control 36%, n=17). The programmes being delivered in control schools, however, were more likely than those in intervention schools to focus on silent reading fluency (control 26%, n=12; intervention 5%, n=2). In both groups, reading programmes being delivered were more likely than not to include explicit teaching of vocabulary, although the programmes delivered in control schools (74%, n=35) were more likely to include this than those in intervention schools (62.5%, n=25).

Headteachers in both groups reported that, if their school was allocated to the intervention group, they were likely to continue using existing programmes (intervention 63%, n=26; control 66%, n=31) rather than replacing them with Reading Plus (intervention 27%, n=11; control 23%, n=11) (see Figure 9).

Guided reading

The majority of teachers in both groups reported that they used guided reading as a strategy to support the teaching of reading (intervention 77%, n=54; control 77%, n=51). The response was similar from headteachers: high proportions of headteachers in intervention schools (69%, n=31) and control schools (72%, n=31) reported that their school used guided reading to support the teaching of reading. When we asked headteachers how much guided reading time Year 5 pupils currently had on their timetables per week, the most common response in both groups was between one and two hours (see Figure 10).

Figure 10: The amount of guided reading time that Year 5 children had on their timetables per week at baseline as reported by headteachers



	Intervention schools	Control schools
181 minutes or more	1	3
121-180 mins	10	6
61-120 mins	12	14
Up to 60 mins	8	8

Guided reading was more likely to be delivered as a whole-class lesson in both intervention (71%, n=22) and control (67%, n=20) schools than a small group lesson (intervention 29%, n=9; control 30%, n=9).

Other reading strategies

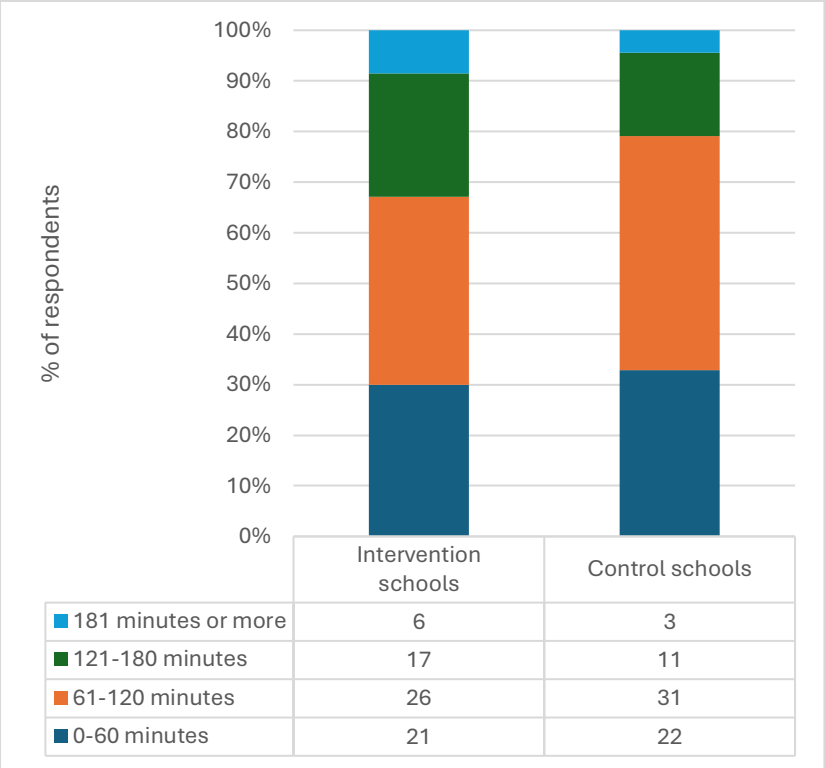
Headteachers were asked about the other ways that teachers were supporting the teaching of reading in Year 5 in addition to guided reading, particularly with regards to teaching fluency, comprehension, and vocabulary. The most common responses were specific lessons focusing on fluency, comprehension, and vocabulary. Several headteachers referred to teaching vocabulary and other reading skills across the curriculum. Other common responses included one-on-one reading sessions for those pupils needing additional support, whole-class reading, daily independent reading, and library sessions. Responses were similar across control and intervention schools.

Time spent reading

We asked teachers about the time that pupils spent on reading and reading activities in school each week (see Figure 11). Respondents in both groups were most likely to report that Year 5 pupils spent between one and two hours reading within school each week (including independent reading, paired or group reading) plus between one and two hours engaged in other reading activities each week (including guided reading, whole-class reading lessons, being read to, etc.).

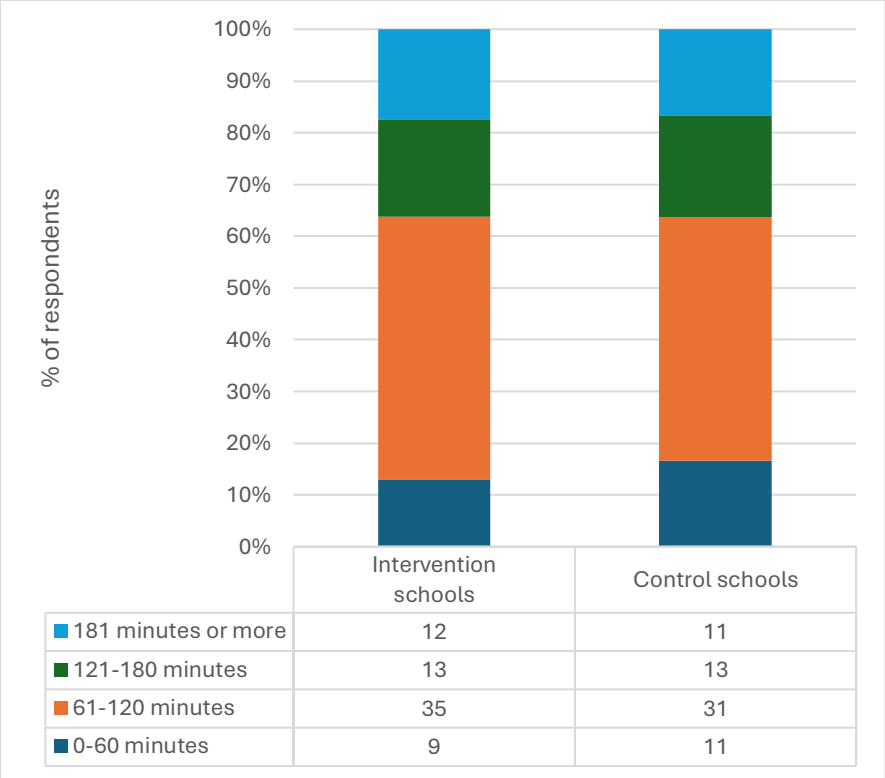
Figure 11: Teacher perceptions of (a) time spent reading in school each week, and (b) time spent engaged in other reading activities in school each week

(a)



	Intervention schools	Control schools
181 minutes or more	6	3
121-180 minutes	17	11
61-120 minutes	26	31
0-60 minutes	21	22

(b)



	Intervention schools	Control schools
181 minutes or more	12	11
121-180 minutes	13	13
61-120 minutes	35	31
0-60 minutes	9	11

Reading assessment

When asked how reading attainment was monitored in Year 5, teachers talked about different approaches to formative and summative assessments most commonly identifying standardised reading tests (National Foundation for Educational Research [NFER]/National Test-Style Standardised [NTS]) and Accelerated Reader/Star Assessment data. When asked

about how often pupils' reading is assessed, responses in terms of formative assessment were distributed between 'daily' and 'every half-term' in both groups. The vast majority of teachers said that they undertook formative assessments through listening to pupils read and asking questions or marking comprehension activities; there were no noticeable differences between control and intervention schools. Summative assessment was most likely to be every term in both groups, with around a quarter of teachers in both groups reporting that they conducted summative assessments more often. The most popular summative assessments were standardised tests including NFER, NTS, Testbase, Star Reading (Accelerated Reader), and PiRA. Some teachers mentioned other general standardised reading tests, as well as those targeting specific skills such as fluency and comprehension or designed for struggling readers. As with formative assessment, there were no noticeable differences between control and intervention schools.

Use of EdTech

Most teachers in both groups reported that EdTech was not used to support reading in Year 5. For intervention schools, 29% of respondents (n=20) reported that it was used and for control schools this was 27% (n=17). A variety of EdTech tools were named by both control and intervention teachers with Accelerated Reader, Learning by Questions, and Lexia being the most popular. Just under half of respondents in both groups reported that EdTech was used in other areas of the curriculum for Year 5 (intervention 45%, n=30; control 44%, n=28). A variety of EdTech tools were used, typically to practice specific skills in maths (Times Table Rock Stars) or English (Spelling Shed).

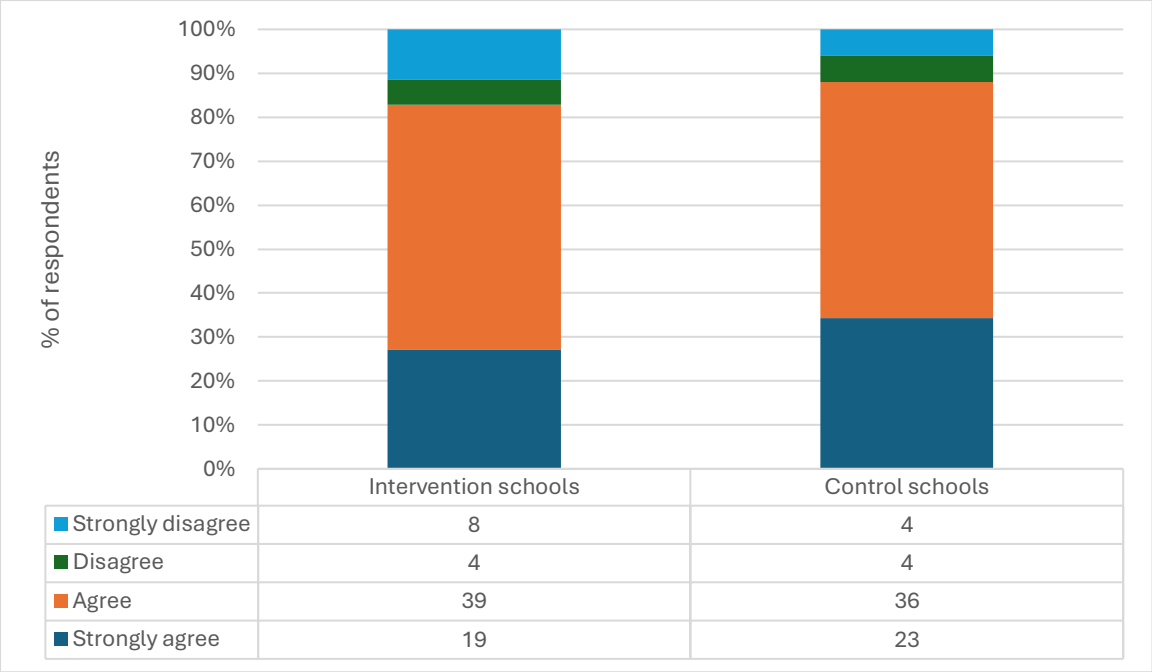
Among those that did use EdTech, the majority of respondents in both groups said that it was meeting reading instruction needs in Year 5 'to little extent' (intervention 42%, n=8; control 31%, n=5) or 'to some extent' (intervention 58%, n=11; control 56%, n=9). Among those who did not use it, the most common reasons were lack of funding and insufficient digital infrastructure. A small number of teachers said that they did not have sufficient knowledge about appropriate EdTech products or had not had relevant training. Two teachers from control schools said that they preferred their pupils to read books rather than use EdTech (i.e. to avoid screen time) and one felt that it was better practice to hand write question answers given that national assessments are paper-based.

Reading culture in school

We asked teachers whether there was an integrated whole-school approach to cultivating confident readers and developing readers who are self-motivated to read (see Figure 12). Across both measures and in both arms of the trial, teachers were most likely to agree, with significant minorities strongly agreeing. Teachers in the intervention group had higher levels of disagreement than those in the control group on both measures.

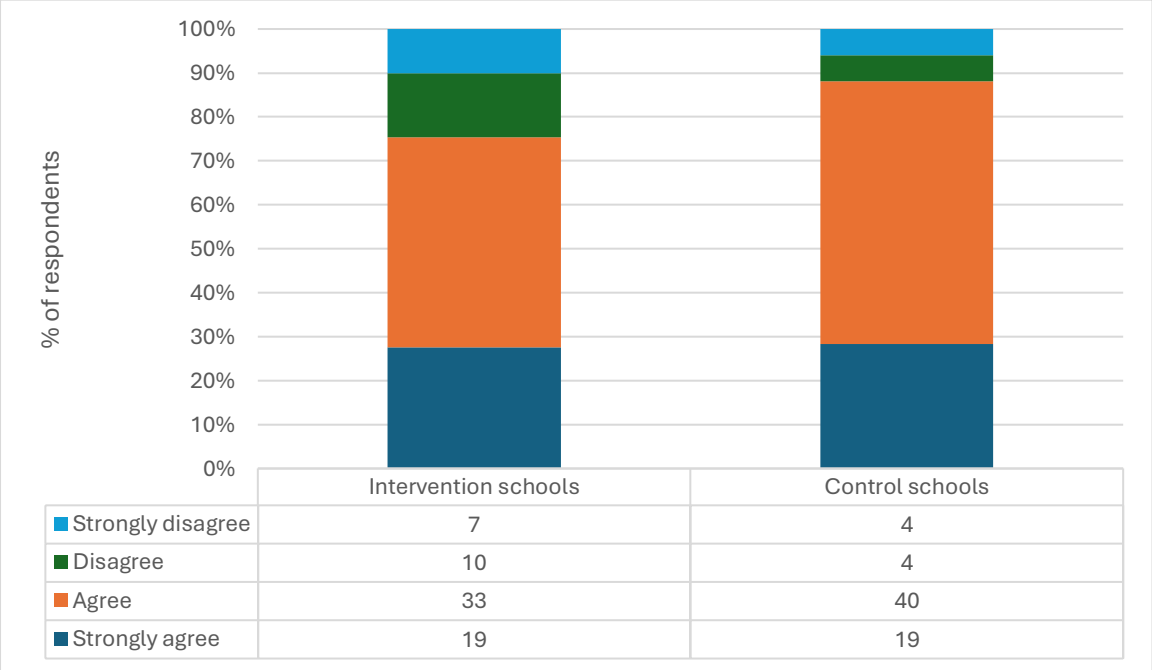
Figure 12: Teachers perceptions of whether (a) there was an integrated whole-school approach to cultivating confident readers, and (b) developing readers who are self-motivated to read, at baseline

(a)



	Intervention schools	Control schools
Strongly disagree	8	4
Disagree	4	4
Agree	39	36
Strongly agree	19	23

(b)



	Intervention schools	Control schools
Strongly disagree	7	4
Disagree	10	4
Agree	33	40
Strongly agree	19	19

Asked how a positive reading culture was developed in their schools, the majority of headteachers and teachers mentioned providing a school library and/or a class library. Other popular responses included incentivising reading through award schemes and challenges, providing inviting reading areas both inside and outside, reading events such as World Book Day, author visits (both virtual and in-person), and reading daily, both individually and as a whole class. Smaller numbers mentioned sharing staff and pupil recommendations, book fairs, book clubs, book buddies, celebrations/assemblies, reading ambassadors, promoting reading for pleasure and reading more generally, parental involvement, encouraging home reading, and arranging book swaps. There were no noticeable differences between control and intervention schools.

> *We have two libraries, one just for the children in Key Stage 2 and they visit it weekly. We have librarians, Reader Leaders (like reading ambassadors) and our Junior Leadership Team who regularly ask their peers about books and choices they would make. Each classroom has an appealing reading area with books recommended by the teacher and by peers. We have had author visits (virtually) and reading days. We also hold a termly book swap to encourage children to have new reading material.* (Headteacher, Control school)

Future plans

We asked headteachers whether there were any plans to make changes to the ways in which reading is taught in Year 5 in the forthcoming academic year (2025/2026). The response was similar across the two groups, with 69% (n=31) of respondents in intervention schools and 67% (n=29) of respondents in control schools saying that there were no plans to make changes. Of the very small number of respondents in each arm of the trial (six control schools and seven intervention schools) who indicated that they had definite plans to make changes, there were no real differences between the two groups in the activities respondents described. Plans included introducing new reading schemes, streaming groups for literacy in Year 5 and Year 6, introducing interventions for struggling readers, and focusing more on teaching specific skills such as comprehension, fluency, and vocabulary.

The majority of respondents in both groups said that if they were selected to use Reading Plus, it would be complementary to their existing approach to teaching reading, although this was higher in control schools (74%, n=31) than intervention schools (58%, n=26). When asked to explain their answer, those headteachers who felt it would be complementary and talked about it aligning well with existing approaches but adding something different to the range on offer currently. A few specifically mentioned the development of fluency and a love of reading being potentially beneficial. Some were a little unsure saying that they needed to judge the impact of Reading Plus once it was being used by their pupils.

Headteachers who felt it would replace existing provision instead typically mentioned it replacing guided reading. Others mentioned replacing Lexia, Accelerated Reader, VIPERS (Vocabulary, Inference, Prediction, Explanation, Retrieval, Sequence or Summarise), and directed activities related to texts (DARTs) activities. There were no major differences between headteachers in the control arm and the intervention arm.

Usual practice in control schools at endline

The following subsection addresses IPE RQ1a. It describes the reading practices, programmes, and interventions that were happening in control schools during the time of the trial using survey data from teachers and headteachers.

Summary of findings

- Control schools continued to provide substantial literacy support throughout the intervention year.
- Use of reading programmes increased compared with baseline, particularly for struggling readers and whole-class support.
- Just under half (45%, n=35) of teacher respondents in control schools reported that they had used a literacy intervention for all pupils during the intervention year. This was an increase from baseline, when only a quarter (24%, n=16) had used one in the preceding year.
- Common programmes included Accelerated Reader, Read Write Inc., Pathways to Read, and Lexia.
- Reading programmes were integrated into core literacy lessons rather than delivered separately.
- Guided reading remained common, although delivery shifted more towards whole-class teaching instead of small groups.
- Pupils appeared to spend more time reading in school compared with baseline.
- Use of EdTech to support reading increased, although schools reported barriers such as limited infrastructure and cost.
- More schools offered Continuing Professional Development (CPD) in reading instruction (a 20% increase), though teachers reported participating in fewer formal and informal CPD activities themselves.
- Around a quarter of teachers (26%, n=20) reported that there had been changes to the reading culture in their school through activities such as library visits, reading challenges, author visits, and shared reading.
- Around 51% (n=40) of teachers reported evidence of increased reading for pleasure among pupils.
- Around 38% of headteachers reported making changes to reading provision and classroom practice, particularly focusing on fluency, comprehension, consistency of teaching, and reading for pleasure.
- Compared with baseline, control schools reported greater use of interventions, more whole-class delivery, increased EdTech use, expanded CPD offers, and stronger reading cultures.

Teaching reading

We asked teachers in control schools how often they taught the core aspects of reading skills covered by Reading Plus during the intervention year. Compared to baseline, the proportion teaching silent reading fluency, comprehension, and vocabulary at least weekly remained reasonably consistent. There was a slight increase in the proportion of respondents

who reported teaching silent reading fluency at least weekly (71% to 77%) and a reduction in comprehension (97% to 92%), while vocabulary remained steady (98% to 98%).

The changes were not large and are likely a quirk of the sample. In addition, only around two-thirds of teachers and headteachers in control schools responded to the endline surveys, resulting in a possible non-response bias.

Reading programmes

Just under half (45%, n=35) of teacher respondents in control schools reported that they had used a literacy intervention for all pupils during the intervention year. This was an increase from baseline, when only a quarter (24%, n=16) had used one in the preceding year. Accelerated Reader was the programme most commonly used by control schools. Around 62% (n=48) of teacher respondents reported that they used a literacy intervention for pupils who are struggling to read, which again was an increase from baseline when just under half (48%, n=32) had used one. Read Write Inc. was commonly named by respondents as the programme that they used.

At endline, headteachers in control schools reported that they had one (38%, n=16) or two (38%, n=16) reading programmes available to Year 5 pupils in their school, with around a fifth (19%, n=8) saying that none were available. This was broadly comparable to baseline, although there is some suggestion that control schools were offering fewer programmes, with number offering three or more falling from 16% (n=7) at baseline to 5% (n=2) at endline and those offering two instead rising from 26% (n=11) at baseline to 38% (n=16) at endline. The most popular programmes named by headteachers were Accelerated Reader, Pathways to Read, and Read Write Inc. Fresh Start.

While there were some shifts in the types of programmes offered, many of the programme features remained comparable to baseline. Three-quarters of the programmes offered in control schools at endline were delivered in-person (75%, n=38), a fifth online (20%, n=10) and 6% (n=3) a combination of the two. This was very similar to the situation at baseline. Again, very similar to baseline, just over half of the programmes (53%, n=27) were targeted at specific subgroups of pupils, and just under half were not (47%, n=24).

Around half (54%, n=26) of the programmes described by headteachers focused on both oral and silent reading fluency and around a fifth (21%, n=10) on oral reading fluency only. Only 12.5% (n=6) focused on silent reading fluency only and 12.5% (n=6) focused on neither. Compared to baseline, this represents a decrease in programmes focusing on silent reading fluency or oral reading fluency only and an increase in those focusing on both or neither. Overall, most control school headteachers that responded to the survey had provided teaching on oral and silent reading fluency throughout the intervention year. The figures may suggest a shift in strategy as control schools continued to develop their literacy provision while they were part of the trial, with schools moving away from teaching only oral or silent reading fluency to teaching both or choosing a different focus for reading lessons.

Guided reading

At endline most headteachers who responded to the survey in control schools reported using guided reading to support the teaching of reading in Key Stage 2 (67%, n=28), while a minority had not (33%, n=14). A majority of teachers (64%, n=48) reported using guided reading during the intervention year, which was a smaller proportion than at baseline, when 77% (n=51) of teachers in control schools reporting using this approach.

Similarly to baseline, out of those who did offer guided reading, many said that their Year 5 pupils had between one and two hours on their timetables per week (37%, n=10), or up to an hour (30%, n=8), with around a fifth (22%, n=6) having between two and three hours. Headteachers reported that guided reading was taught as a whole class (81%, n=22) rather than in small groups (15%, n=4). This was similar overall compared to baseline, although the proportion using whole-class lessons had increased over time (67% > 81%) while the proportion using small group instruction had dropped (30% > 15%).

Time spent reading

Most teachers (56%, n=43) reported that pupils in their class spent between one and two hours reading within school each week, with nearly a fifth (19%, n=15) saying two to three hours. Compared to baseline, when a third (33%, n=22) of teachers reported that pupils were reading for less than an hour a week, pupils in control schools were spending more time reading

in school. When asked how much time pupils in their class spent engaged in other reading activities in school each week, 45% (n=35) of teachers responded that it was between one and two hours, and 30% (n=23) said between two and three hours. This pattern of responses was similar to baseline.

Reading assessment

Responses to the question of how often teachers formatively assessed the readers in their class were distributed across the answer categories: 27% (n=21) said 'daily'; 31% (n=24) said 'several times a week'; 22% (n=17) said 'weekly'; and 14% (n=11) said 'every half-term'. Compared to baseline, teachers were more likely to report that they completed formative assessment several times a week and less likely to choose any of the other options. Typically, teachers listened to pupils read and asked them to respond to either oral or written questions about the texts they had been reading.

As at baseline, most teachers (71%, n=55) reported that they summatively assessed readers in their class every term, primarily using standardised tests (e.g. NFER tests, NTS assessments).

Use of EdTech

Reported use of EdTech to support reading in Year 5 increased from 27% (n=17) at baseline to 38% (n=29) of teachers at endline. The most popular programmes were Accelerated Reader and Lexia, which teachers felt addressed their needs sufficiently. Of those teachers who gave reasons for not using EdTech, most said that they did not have sufficient digital infrastructure (n=14) and some mentioned that the cost was prohibitive (n=7).

CPD

There was a 20% increase in the number of headteachers reporting that Key Stage 2 staff had been offered CPD on teaching reading during the intervention year, from 53% (n=23) in the year preceding the intervention to 73% (n=30). Beyond general reading CPD, headteachers identified a wide range of topics that had been offered in their schools, typically aligned to a specific programme (e.g. Accelerated Reader, Pathways to Read).

We asked teachers in control schools about the professional development that they had undertaken during the intervention year. Just under half (46%, n=36) said that they had completed some formal professional development and around a third (36%, n=28) reported undertaking some informal development activities. This represents a reduction on both measures from baseline, when 57% (n=38) of respondents reported completing formal activities and 49% (n=33) reported completing informal activities. As with CPD uptake identified by headteachers, a wide range of topics were acknowledged with some focused on specific reading skills identified (developing fluency, n=5; guided reading, n=4; phonics, n=4). The most popular informal development activities were social media (n=13) and accessing online reports and articles including those published by the EEF (n=10).

Reading culture in school

Control schools continued to offer a wide range of activities and strategies to cultivate a positive reading culture. The most popular identified by teachers were: school and local library visits; incentivising reading through challenges, competitions and rewards; offering indoor and outdoor spaces for reading; celebrating reading through World Book Day and special assemblies; reading a book together (e.g. a novel chosen by the class); and author visits. Headteachers also identified a similar range of activities and strategies.

Around a quarter of teachers (26%, n=20) reported that there had been changes to the reading culture in their school during the intervention year such as increasing the range of books on offer, with six noting that developing reading for pleasure had been a school focus.

Just over half of teachers (51%, n=40) said that they had seen some evidence of their pupils' reading for pleasure increasing during the intervention year. The most popular evidence offered by teachers was pupils reading more and pupils being more motivated to engage in reading, for example, wanting to read out loud to their peers. They also mentioned pupils requesting books, asking for recommendations, making recommendations, and accessing a wider range of books than previously.

A few boys in class never wanted to read for homework and it was described as being a chore. Now they are bringing books from home to read during break times and are sharing good books among one another as recommendations. (Teacher, Endline survey, Control school)

Changes over the year

Although a majority of headteachers who responded to the survey (62%, n=26) reported that their school had not made any changes to the way in which reading was taught in Year 5 during the intervention year, this meant that a large minority of schools (38%, n=16) had made changes. Headteachers identified a range of changes that had been made primarily in relation to the introduction of a new programme (e.g. Accelerated Reader, Lexia, Pathways to Read).

Around half (52%, n=22) of the control school headteachers who responded to the survey reported that the teaching of reading has been a focus for school development in Key Stage 2 during the intervention year. The focus varied but the most common were developing fluency (n=7), introducing a new programme (n=7), developing comprehension (n=3), improving consistency of approach to teaching reading (n=3), and developing reading for pleasure (n=3).

Almost half the teachers (45%, n=35) reported that they had changed their own practice in relation to teaching reading during the intervention year compared to the previous year. Of these, nine teachers mentioned an increased focus on developing fluency and four mentioned developing comprehension skills.

Literary practices in intervention schools during the intervention

The following subsection addresses IPE RQ1b and IPE RQ1c. It describes the reading practices, programmes, and interventions that were happening alongside Reading Plus and what practices were replaced in in intervention schools using data from surveys of teachers and headteachers as well as staff interviews in case study schools. It is worth noting that only two-thirds of headteachers and half of teachers in intervention schools responded to the endline survey.

Summary of findings

- Around 55% of headteachers who responded to the survey reported that Reading Plus had replaced their existing provision.
- Most teachers who responded continued to teach fluency, comprehension, and vocabulary alongside Reading Plus, although there were indications that teacher-led comprehension and vocabulary teaching reduced during the intervention year.
- Many teachers felt that Reading Plus did not fully cover skills such as extended written comprehension, oral fluency, and prosody, requiring additional teacher-led instruction.
- Schools continued to use a range of literacy interventions, particularly for struggling readers, although the overall number of reading programmes running alongside Reading Plus reduced compared at baseline.
- Schools also supported reading through comprehension lessons, cross-curricular literacy, class read-alouds, and reading for pleasure activities, showing that Reading Plus operated within an already established literacy environment.
- Pupils generally spent less time reading outside Reading Plus lessons than at baseline, while use of additional EdTech tools for reading also declined.
- Professional development related to reading reduced during the intervention year, with fewer schools offering CPD and fewer teachers engaging in informal professional learning.
- Case study findings showed that schools often adapted implementation over time, balancing Reading Plus with existing teacher-led reading lessons and literacy practices.

Teaching reading

Just over half (55%, n=22) of headteachers who responded to the survey said that Reading Plus had replaced aspects of their existing approach to teaching reading, rather than being complementary to it. It should be noted that only about two-thirds of headteachers in intervention schools responded to the endline survey. Of those that told us Reading Plus had replaced aspects of their existing practice, 15 said that Reading Plus had replaced guided or whole-class reading. Other aspects replaced included Accelerated Reader sessions, comprehension lessons, independent reading sessions, and general reading skill instruction.

The majority of responding teachers also reported that Reading Plus had replaced guided or whole-class reading (n=32). Again, it must be noted that only around half of teachers in intervention schools responded to the endline survey. Most

teachers (88%, n=49) who responded agreed that Reading Plus had replaced a similar reading activity in their schools during the intervention year. Other activities that had been replaced included comprehension lessons (n=8) and Accelerated Reader (n=3). Of the six teachers who said that Reading Plus had not replaced any reading activity, three teachers said that other curriculum subjects had been reduced in order to accommodate Reading Plus in the existing timetable.

A majority of teachers (59%, n=33) said that they continued to teach reading fluency this year alongside Reading Plus lessons. When asked to explain how fluency had been taught, a wide variety of strategies were mentioned by all but one of these teachers, more commonly focused on reading aloud (e.g. paired reading or choral reading). While Reading Plus was being delivered, intervention schoolteachers continued to teach silent reading fluency at least weekly (46%, n=26) or in every lesson or almost every lesson (27%, n=15), proportions only slightly reduced from baseline.

A majority of teachers also reported teaching reading comprehension (84%, n=46) and vocabulary (86%, n=48) alongside using Reading Plus. When asked to explain how they taught comprehension, teachers typically referred to specific lessons which focused on reading text, discussion, and answering questions, with some referring to specific resources such as Complete Comprehension (n=3) and Cracking Comprehension (n=4) while five teachers referred to the use of the VIPERS comprehension framework. However, there were indications of a reduction in time that teachers spent teaching reading comprehension during the trial. While around half of teachers continued to teach reading comprehension at least weekly, the proportion teaching it in every lesson or almost every lesson had reduced from 49% at baseline to 29% (n=16) at endline and the proportion teaching it at least 'half termly', 'never', or 'almost never' had risen from 0% at baseline to 20% at endline.

Similarly, a majority of teachers also reported teaching vocabulary (86%, n=48) alongside using Reading Plus using a variety of strategies and resources linked to reading programmes and teaching comprehension. Notably, 15 teachers mentioned that teaching vocabulary is a cross-curricula activity. There was also some indication of a reduction in the time that the teacher spent teaching vocabulary. While the proportion teaching it at least weekly had risen to 41% (n=23) from 31% (n=22) at baseline, the proportion teaching it in every lesson or almost every lesson dropped from 69% (n=48) to 50% (n=28).

Around 43% (n=24) of responding teachers thought that there were reading skills not covered by Reading Plus. Almost two-thirds of these teachers (n=16) felt that they had to teach pupils how to respond to longer, written comprehension questions separately. Six teachers also noted that the development of oral fluency and prosody required additional input.

Reading programmes

There was an increase in the proportion of teachers who reported using a literacy intervention in Year 5 for pupils who are struggling to read, from 47% (n=33) at baseline to 66% (n=37) at endline. Read Write Inc. was the most popular named by teachers as an example (n=11) with Little Wandle also identified by a small number of teachers (n=6).

However, half of all headteachers who responded to the survey (50%, n=20) reported having no reading programmes running alongside Reading Plus for Year 5 pupils, while 27.5% (n=11) said that they had one. A wide range of different programmes were referred to with more than one reference to Little Wandle (n=3, subgroups), FFT Lightning Squad (n=3, subgroups), Read Write Inc. (n=3, subgroups), Cracking Comprehension (n=3, all readers and subgroups), Accelerated Reader (n=2, all readers), Pathways to Read (n=2, all readers and subgroups), and Reading Eggs (n=2, subgroups). Five headteachers indicated that the additional programme was bespoke, having been developed in-house or by the local authority, with four teachers indicating that the programme was targeted at subgroups. As at baseline, most additional programmes (67%, n=16) were targeted at specific subgroups of pupils. Headteachers reported an overall reduction in the number of reading programmes offered by schools compared to baseline, with fewer schools reporting that they had any reading programmes and more schools reporting that they had none.

Most of the programmes offered by intervention schools involved a focus on oral reading fluency (24%, n=6), silent reading fluency (17%, n=4), or a combination of the two (54%, n=13). Compared to baseline, this was an increase in programmes that involved silent reading fluency and a decrease in those that involved oral reading fluency. Developing fluency (n=4) and opportunities for reading aloud (n=2) were two of the most popular reasons given for implementing an additional reading programme in relation to supporting subgroups, alongside developing comprehension (n=4) and phonics (n=4). Most of the programmes (75%, n=18) included an explicit teaching of vocabulary. This was an increase from 62.5% (n=25) of programmes at baseline.

Most programmes were run as an additional activity (67%, n=16) rather than as part of core literacy lessons (29%, n=7), although the proportion of the former had reduced from 78% at baseline while the latter had increased from 20%.

Guided reading and other approaches

Most headteachers who responded to the survey (67.5%, n=27) reported that their school had used guided reading to support the teaching of reading in Key Stage 2 during the intervention year, a figure that was very similar to baseline. Half (50%, n=27) of responding teachers reported using guided reading during the intervention year, a reduction from 77% (n=54) who reported using it at baseline.

As at baseline, the most popular response to the question of how much guided reading time Year 5 pupils had on their timetables per week was between one and two hours (41%, n=11), with around a quarter having up to an hour (26%, n=7) and a quarter having two to three hours (26%, n=7).

As at baseline, most headteachers (85%, n=23) reported that guided reading was delivered to whole classes in Year 5 rather than small groups (15%, n=4). Headteachers indicated that guided reading was primarily teacher-led with 11 teachers saying that teachers had support from teaching assistants. When asked to provide further details about the delivery of guided reading, the vast majority of the 21 headteachers who responded, indicated that the focus was on developing comprehension skills (such as prediction and summarising).

Headteachers reported a wide range of other activities to support the teaching of reading beyond specific programmes and guided reading with the most popular responses being comprehension lessons (n=9), embedding literacy skill development across the curriculum (n=9), teaching vocabulary (n=6), a class story (n=5), and opportunities for pupils to read with an adult (n=4).

Time spent reading

Teachers' survey responses suggested that the amount of time that pupils in Year 5 classes spent reading in school each week, other than in Reading Plus lessons, had (unsurprisingly) generally reduced from baseline: the proportion spending up to two hours had increased from 67% (n=37) to 79% (n=44), while the proportion spending more than two hours had reduced from 33% (n=24) at baseline to 22% (n=12) at endline. The amount of time that pupils spent engaged in other reading activities in school each week did not change significantly, with 68% (n= 38) spending up to two hours (compared to 64%, n=44 at baseline).

Use of EdTech

Very few teachers (9%, n=5) reported using EdTech to support reading in Year 5, apart from through Reading Plus, although a further five teachers mentioned EdTech tools in response to other questions. This was a reduction from 29% (n=20) at baseline. Specific tools were identified such as Accelerated Reader and Lexia. One teacher referred to pupils using EdTech to conduct research.

CPD

Half (50%, n=20) of headteachers in intervention schools who responded to the endline survey said that Key Stage 2 staff had been offered CPD on teaching reading, other than that related to Reading Plus, during the intervention year. This was a reduction from 62% (n=28) at baseline. Around 12 headteachers said that the CPD had been delivered in-house by the English or reading lead with four teachers noting that there had been a focus on fluency. Three headteachers said that CPD had been provided by the local authority, with one also delivering training on fluency. Other CPD offers were related to specific programmes such as Little Wandle and Read Write Inc.

Nearly half of teachers (46%, n=26) reported undertaking formal professional development related to teaching reading during the intervention year, other than that related to Reading Plus, a figure similar to that at baseline. They reported a similar range of foci to that reported by headteachers, and that CPD was often delivered in-house by the English or reading

lead, with some CPD provided by the local authority, MAT, or other professional network. Three teachers mentioned CPD on developing reading for pleasure.

Most teachers (73%, n=41) told us that they did not do any informal professional development activities related to teaching reading during the intervention year, other than anything that related directly to Reading Plus. The proportion that had done some had dropped from 41% (n=28) at baseline to 27% (n=15) at endline. Of those who said that they did do some, four referred to social media and three mentioned reading articles. A further two referred to accessing the EEF website.

Reading culture in school

As for control schools, intervention schools continued to offer a wide range of activities and strategies to cultivate a positive reading culture. The most popular identified by teachers were: school and local library visits (n=17); incentivising reading through challenges, competitions, rewards, and celebrations (n=32); offering indoor and outdoor spaces for reading (n=14); celebrating reading through World Book Day, special assemblies, and other reading events like booknics (reading picnics), and book fairs (n=34); reading a book together (e.g. a novel chosen by the class) (n=13); and promoting reading at home (n=10). Headteachers also identified a similar range of activities and strategies. Four headteachers and 13 teachers indicated that developing a stronger reading culture and/or reading for pleasure had been a specific focus over the course of the year.

Around a third of teachers that responded to the survey (35%, n=19) also indicated that there had been changes to the reading culture in their schools during the intervention year. When asked to explain the changes that had taken place there were a variety of responses. Most commonly, teachers mentioned specific initiatives that had been introduced (n=9) such as a book vending machine and reading passports to promote reading for pleasure. Seven teachers also referred to changes in relation to the library including new books, increased access, relaunching, and a new library system. Given the wide range of strategies to support the development of a reading culture that teachers had mentioned in response to a previous question, the changes reported are considered to be relatively small and tweaks to the previous provision.

Changes over the year

Most headteachers who responded to the survey (82.5%, n=33) said that apart from running Reading Plus, their school had not made any changes to the ways in which reading was taught in Year 5 during the intervention year. Two headteachers said that they had introduced a new reading programme (alongside Reading Plus) and three said that Reading Plus had replaced something they had been delivering previously (e.g. Accelerated Reader).

Around a third of teachers (34%, n=19) reported that they had changed their practice in relation to teaching reading during the intervention year. Five teachers referred to a greater focus on fluency and five referred to a greater focus or new resources to support the teaching of comprehension.

Findings from case study schools

Teachers in all case study schools reported that Reading Plus replaced guided reading or similar reading lessons on the days that it was used.

At the same time, case study schools continued to teach reading alongside Reading Plus. In four of the case study schools, classes continued to do reading lessons alongside Reading Plus. In two of these schools, reading lessons were delivered on the days that Reading Plus was not used. In another, a reading lesson was delivered once a week and in another it was every day. One school did a reading comprehension session involving writing and practice questions on two afternoons every three weeks. In two case study schools, the number of weekly reading lessons was increased towards the end of the intervention year and the number of Reading Plus sessions reduced.

Two of the case study schools delivered separate English lessons, one using Power of Reading and one focusing on spelling, punctuation, grammar, and writing. In three case study schools, teachers read a book to their classes on most days. In one school, every child reads to an adult at least once a week with target children reading up to everyday. Other programmes

were also used by one school alongside Reading Plus including ReadTheory. In another school, many pupils access Reciprocal Reading sessions and the Key Stage 2 Herts for Learning Reading Fluency Project as well. In two schools there had been a focus on supporting pupils to read at home, and a teacher in one school described how they had a focus on reading for pleasure during the year.

Fidelity

Training and support

This section address IPE RQ5 and examines the extent to which the Reading Plus intervention was delivered as intended to the intervention schools and highlights where this was not the case. It includes exploration of staff's perceptions of a) the initial Reading Plus training; b) support from the reading consultant; c) the optional additional training; and d) access to the resources hub.

Summary of findings

- Schools reported high levels of satisfaction with the support provided by Daisy Education, and evidence from surveys, observations, and case studies suggests that the training and ongoing support enabled schools to implement Reading Plus confidently and largely as intended.
- Initial training and webinars were viewed positively and helped teachers understand both the purpose of the programme and how to use assessment and reporting features effectively.
- Ongoing support from reading consultants was seen as responsive and practical, with teachers particularly valuing tailored advice and proactive communication.
- Most schools delivered Reading Plus close to the intended dosage of 90 minutes per week across two or three sessions, indicating strong fidelity to the core intervention model. Where delivery varied, this was usually due to timetable pressures, staffing constraints, competing school activities, or pupil engagement.
- Some schools adapted delivery for lower-attaining pupils, by reducing Reading Plus use or combining it with alternative provision and taught lessons. This indicates that schools viewed adaptation as necessary to meet pupil needs rather than implementing the programme in a fully standardised way.
- Teachers made use of Reading Plus data to monitor progress, identify gaps, and support grouping and communication with parents and leaders. However, some teachers questioned the reliability of the initial assessment data, particularly where pupils struggled with the unfamiliar format or technology.
- Optional elements of the programme, including visual skills activities, worksheets, and home use, were used more selectively and mainly targeted at struggling readers or pupils with SEND. These elements were generally viewed positively but functioned as supplementary enhancements rather than core parts of implementation.
- Overall, the findings suggest that Reading Plus was implemented with generally strong fidelity to its core requirements, supported by effective training and ongoing guidance. However, variability in adaptation, optional feature use, and school capacity highlights that implementation was shaped by local contexts and existing literacy practices.

The training and support provided to schools by Daisy Education included was made up of an initial Reading Plus training session for teachers, support for teachers from a reading consultant, optional additional training, and access to the Resources Hub. Evaluation data in this section is drawn from observations of the training sessions, the endline teacher and headteacher surveys, and case study teacher interviews.

Observations of the training sessions included the introductory webinar, initial training session, and two Reports Training Sessions. Observation data suggest the introductory webinar and training sessions were delivered in a professional and competent manner, with trainers appearing to have very sound knowledge of Reading Plus and its features. Although a lot of content was covered in a relatively short period of time during each session, exemplars from the school's own data were used to illustrate key points and teachers were encouraged throughout to ask questions. We also asked teachers a range of questions in the endline survey to measure their opinions of whether the support provided by Daisy Education enabled them to deliver the programme. Finally, we asked teachers at case study schools to express their views on the training and support provided. Data from the surveys and case studies support our own observations with teachers being broadly positive about the training and support provided by Daisy Education.

The introductory webinar provided a showcase of what the programme offers, and an explanation of the approach, noting the potential benefits for children and schools. Aspects which were brought to the teachers' attention included: the benefits

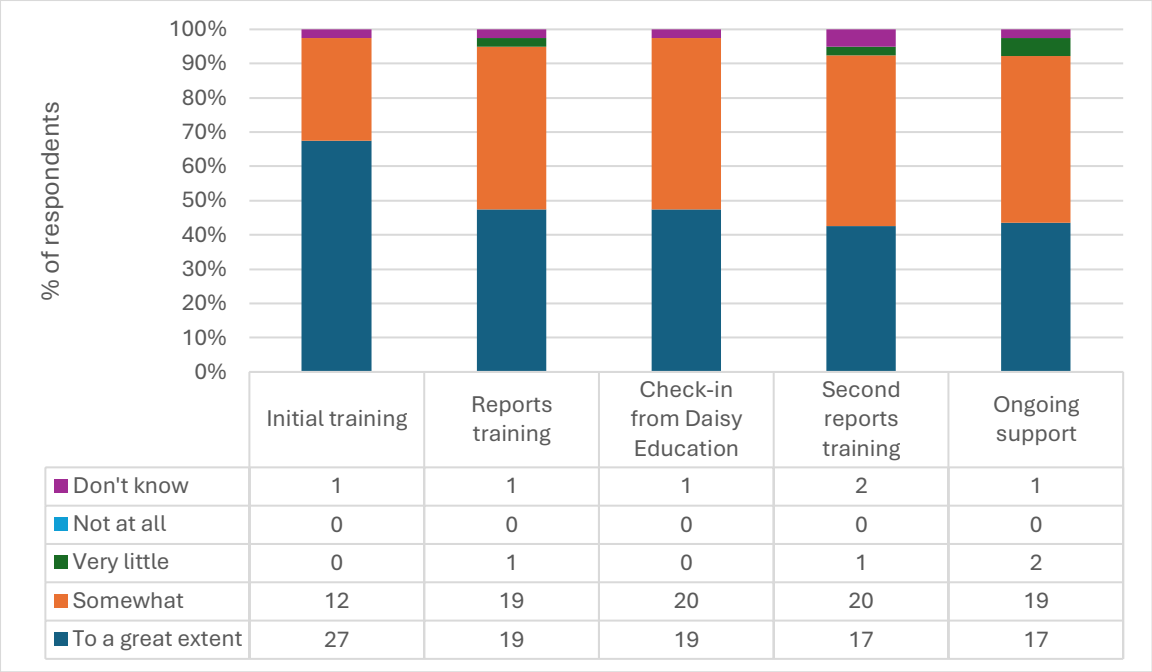
of personalisation and gamification; the focus on fluency as a unique selling point and the role of the Guided Window; the importance of regular use; and support structures such as reread options. In our view, the content presented during the webinar should have provided teachers with a good understanding of the purpose of Reading Plus and an overview how it might work in practice. Teachers in case study schools also gave feedback on the onboarding process. For three teachers, the introductory webinar gave them a good understanding of what the programme would involve. One teacher also said that the initial workload implications were minimal as Daisy Education set their school up on the Reading Plus system.

The initial training session was provided on a school-by-school basis. Our view of the three sessions which were observed is that the content coverage was very comprehensive and the facilitator was knowledgeable and responded well to any questions asked by school staff. The session focused on the baseline assessment and general features such as the Guided Window, combos, rereading and dealing with 'holds', and the range of data that teachers could access. School staff were encouraged to ask questions. At two schools, a small number of basic functionality questions were asked such as how to remove pupils who have left the school. One of the schools had already started to use Reading Plus so the session was adapted and the teacher asked a lot more specific questions, reflecting deeper knowledge of the basic features, such as how best to encourage pupils to engage with the reread option.

Teachers in four case study schools told us that they found the initial training useful for getting started with Reading Plus, with a manageable amount of information clearly delivered. One teacher said that the training requirements were low and appreciated the flexibility of Daisy Education in scheduling these. A teacher in one school said that they would have appreciated more information on the expectations of their own role in delivering Reading Plus, with insight into how other teachers support its implementation.

Out of the three training sessions offered, headteachers who responded to the survey thought that the initial training was the most useful Reading Plus implementation facilitator, with 67.5% (n=27) considering it useful 'to a great extent' (Figure 13). In relation to other facilitators, less than half of responding headteachers found them useful 'to a great extent', with many saying that they were 'somewhat' useful. This pattern of response may be explained by headteachers being less involved in the implementation of the programme after the initial training.

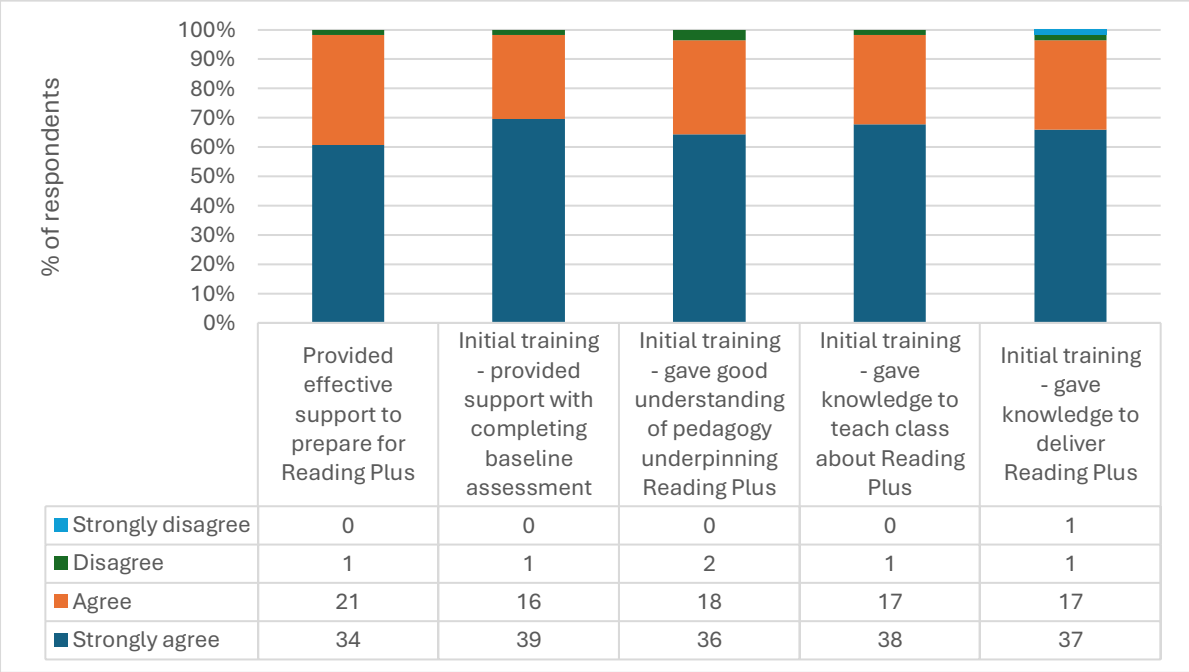
Figure 13: Headteacher perceptions of Reading Plus implementation facilitators



	Initial training	Reports training	Check-in from Daisy Education	Second reports training	Ongoing support
Don't know	1	1	1	2	1
Not at all	0	0	0	0	0
Very little	0	1	0	1	2
Somewhat	12	19	20	20	19
To a great extent	27	19	19	17	17

Teacher survey responses in relation to preparation and initial training (Figure 14) were positive, with over 90% of respondents agreeing or strongly agreeing with each of the measures.

Figure 14: Teacher assessment of support (preparation and initial training) provided by Daisy Education



	Provided effective support to prepare for Reading Plus	Initial training - provided support with completing baseline assessment	Initial training - gave good understanding of pedagogy underpinning Reading Plus	Initial training - gave knowledge to teach class about Reading Plus	Initial training - gave knowledge to deliver Reading Plus
Strongly disagree	0	0	0	0	1
Disagree	1	1	2	1	1
Agree	21	16	18	17	17
Strongly agree	34	39	36	38	37

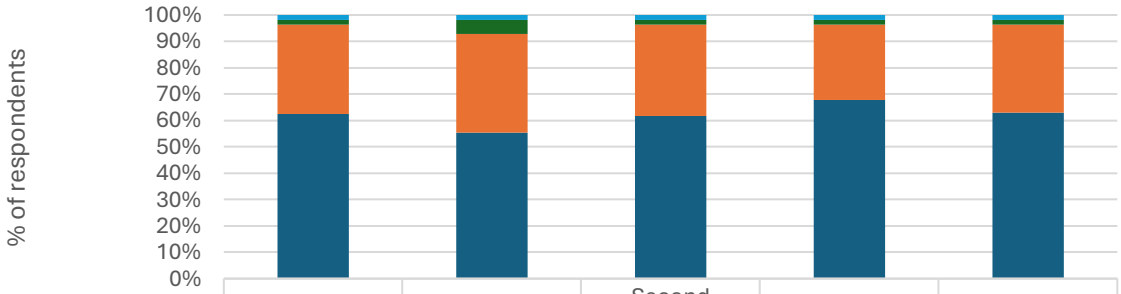
The objective of Reports Training Session 1 was to review the baseline assessment data and discuss how to identify and support low-level readers. School data were shared with the school staff to support the discussion including usage, progress, and assignments. For example, the trainer demonstrated the progress report feature suggesting that the teacher focused on those making little or no progress. Teachers were guided on how to tailor the programme for pupils who are struggling readers (i.e. setting fewer reading assignments per week) and were provided with suggestions to enhance engagement, for example, through competitions. Trainers also responded to specific questions and comments made by staff such as how to deal with pupils who are put on hold regularly. Teachers raised concerns about baseline assessments for some pupils being inaccurate, pupil and staff account access issues, and identified challenges in relation to how to accommodate Reading Plus sessions in an already packed timetable. Again, the facilitators were noted to be knowledgeable and to answer questions fully. Using the school's Reading Plus data as a starting point helped to contextualise content that needed to be covered as well as illustrate specific concerns that the school staff had.

Reports Training Session 2 was designed to help teachers understand pupil progress and the skills gap analysis report, providing teachers with a deeper understanding of how they could use assessment data. The trainer spent most of the session sharing pupil progress data and talking about how to identify and support individual pupils not making sufficient progress. Often in response to questions from teachers, the trainer repeated much of what had been covered in previous sessions such as explaining visual skills, the Guided Window, generating reports, combos, the leaderboard and awards, and the data. As with Reports Training Session 1, by drawing on the school's own data and responding to questions, the content covered was relevant and informative, enabling teachers to seek advice and guidance on how to get the most out of the features of Reading Plus.

Feedback from case study schoolteachers on Reports Training Sessions 1 and 2 was generally positive. A teacher in one school commented that it was very thorough. Three others appreciated the graduated structure of the sessions, with detail about the programme and opportunities to seek advice on individual pupils delivered over further sessions. Teacher survey responses in relation to reports training and methods of delivery (Figure 15) were also positive, with over 90% of respondents agreeing or strongly agreeing with each of the measures.

Both the reading consultants interviewed also felt that engagement from teachers was high during the training with one of the consultants describing it as 'fantastic' and schools were 'fully on board' from the start. They felt that there were very few issues with teachers understanding the programme and that engagement with the programme continued during implementation.

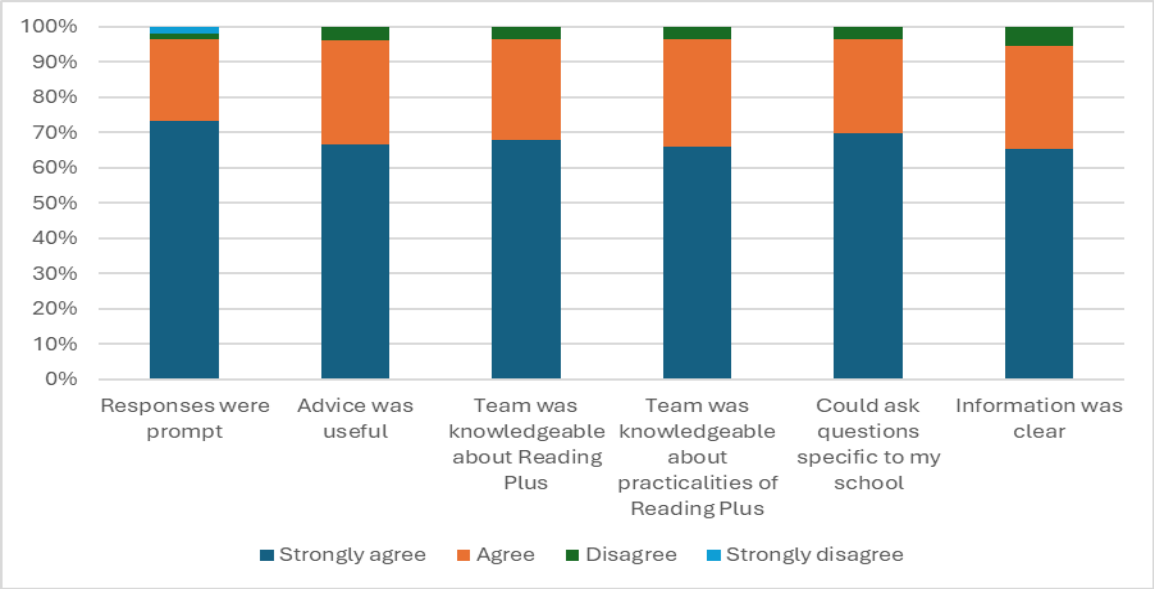
Figure 15: Teacher assessment of support (reports training and methods of delivery) provided by Daisy Education

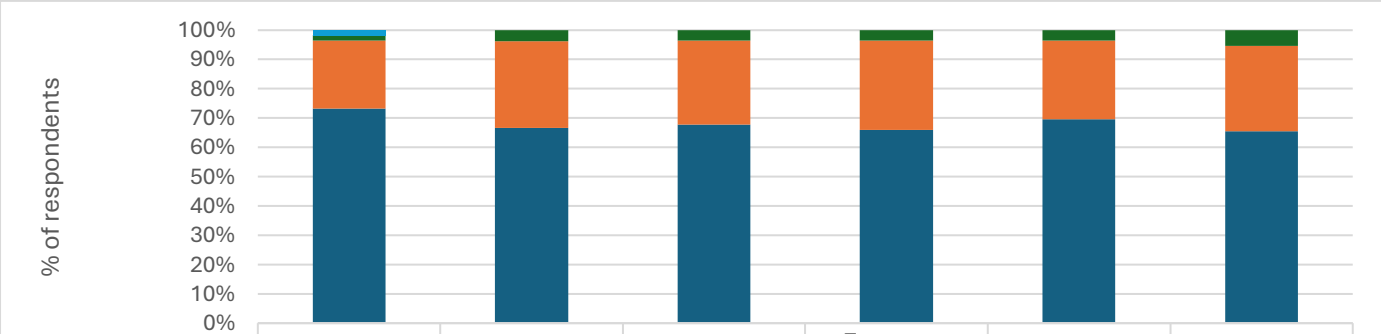


	First reports session - good understanding of insights provided by Reading Plus	First reports session - taught me to use the assessment data	Second reports session - enabled me to monitor pupils' progress	Online Teams sessions were effective method of delivery	School-based training enabled me to maximise benefits for my school
Strongly disagree	1	1	1	1	1
Disagree	1	3	1	1	1
Agree	19	21	19	16	18
Strongly agree	35	31	34	38	34

We also asked teachers to assess the quality of support given by the Daisy Education team. Responses were again positive overall, with over 90% of respondents agreeing or strongly agreeing with every measure (Figure 16). In addition, 94% (n=51) 'agreed' or 'strongly agreed' that email was an efficient way to receive support. Appreciation was particularly strong for the initial training and the online method of support and training delivery. When asked if there were any improvements that could be made by Daisy Education to the support offered, only 26 teachers commented, with 23 saying that nothing needed to change. Ten of these 23 stated that support had been excellent. One comment related to experiencing technical issues, and one teacher suggested that a simple feedback log for reporting technical issues would be helpful.

Figure 16: Teacher assessments of quality of support given by Daisy Education





	Responses were prompt	Advice was useful	Team was knowledgeable about Reading Plus	Team was knowledgeable about practicalities of Reading Plus	Could ask questions specific to my school	Information was clear
Strongly disagree	1	0	0	0	0	0
Disagree	1	2	2	2	2	3
Agree	13	16	16	17	15	16
Strongly agree	41	36	38	37	39	36

Teachers in case studies schools were also very positive about the support from their reading consultants. In all six case study schools, teachers were very satisfied with the quality, relevance, and friendliness of advice that they received from their reading consultant, for example, about the speed of the Guided Window for particular pupils and queries about generating reports. Teachers in three schools appreciated that Daisy Education had contacted them proactively to check-in or make suggestions on how to use Reading Plus with particular pupils or to highlight the progress of a pupil. In five schools, teachers told us that Daisy Education were quick to respond to any queries. Later on in the year, two teachers said that they had not recently needed to contact Daisy Education.

We also asked teachers in the endline survey about the supplementary online training, the Resources Hub, and extra initiatives offered by Daisy Education.

Very few (7%, n=4) of the teachers that responded to the survey reported that they or their colleagues had accessed the supplementary online training. Only two teachers commented on the benefits of this. One said that it provided a refresher of what Reading Plus could offer in relation to functionality and reporting. The other said that they had gained a new understanding of how to assess individuals' progress.

Around a third of teachers (36%, n=20) that responded to the survey said that they had used the Resources Hub on Daisy Education's website. Around 14 teachers said that they had accessed the certificates to reward pupils. Teachers also

referred to accessing guidance and videos, and booster lesson resources. Two teachers noted that the certificates and resources were difficult to find. Four teachers said that they were not aware of the Resources Hub with one noting that relevant resources (such as certificates) had been emailed directly.

Around a third of teachers (36%, n=20) also reported that they had taken part in an extra initiative organised by Daisy Education, including Star of the Month, Reading Plus Champions, or the Festive Poem Competition. Around 12 teachers said that there had been a positive impact on pupil engagement as a result with two saying that home use of Reading Plus had increased. Three teachers felt that there had been no or little impact for various reasons.
In terms of introducing pupils to the programme, case study schools had mixed experiences. In one school the teacher gave demonstrations of how to use it but in three others this was not necessary, and pupils had intuitively understood how to use Reading Plus. In two schools the pupils took a bit of time to get used to the programme, particularly the Guided Window, and teachers in one school felt that this had significantly affected the baseline assessment scores. A teacher in one school said that it had also taken them time to learn how to use the programme.

Programme delivery

This section addresses IPE RQ2 and reports on the extent to which the intervention was delivered as intended in relation to the frequency pupils accessed the Reading Plus platform, the way in which additional visual skills activities support struggling readers and to support individuals/small groups, use of data by teachers to identify and address skills gaps, and optional pupil use of Reading Plus at home.

Summary of findings

- The majority of schools (97.5%, n=39) delivered Reading Plus close to the intended 90 minutes per week across two or three sessions, indicating generally strong fidelity to the core intervention model. Delivery was supported by timetabling, technology access, and pupil motivation.
- Where delivery was less consistent, this was usually due to timetable pressures, staffing issues, competing school activities, or lower pupil engagement. Some schools reduced Reading Plus use later in the year in favour of more teacher-led reading lessons.
- Just under half (48%, n=26) of teachers used visual skills activities to support struggling readers, particularly lower-attaining pupils and pupils with SEND. Teachers generally viewed these activities positively for improving both engagement and reading confidence.
- Additional teaching tools and resources within Reading Plus were used more selectively, mainly for targeted support with individuals or small groups. Time and timetable constraints limited more widespread use.
- Most teachers (80%, n=43) used Reading Plus data to monitor progress, identify skills gaps, and support grouping, intervention planning, and communication with parents and school leaders. However, some teachers questioned the reliability of the initial assessment data, particularly where pupils were unfamiliar with the format or technology.
- Home use of Reading Plus was reported by most teachers 71% (n=39) but was generally limited to a small number of pupils. Access to devices, technical barriers, and differing school approaches to homework affected the extent of use at home.
- In some schools, Reading Plus appeared to support reading at home and pupil engagement with technology, while others preferred paper-based reading due to concerns about inequality of access or parental preferences.
- Classroom observations suggested that Reading Plus was generally easy for pupils to access independently, with few technical problems observed. Staff mainly used sessions to monitor engagement, support targeted pupils, and respond to difficulties identified through the programme.
- Schools adapted implementation to meet pupil needs, including allowing some pupils to read aloud, work in quieter spaces, or access additional interventions alongside Reading Plus.

IPE RQ2a: How often pupils use the Reading Plus platform?

Nearly all headteachers who responded to the survey (97.5%, n=39) reported that their school had delivered Reading Plus sessions for 90 minutes a week over two or three sessions per week between October 2024 and May 2025. The one headteacher who said this had not happened explained that the class teacher had been on long-term sick leave and that the supply teacher had not always delivered Reading Plus.

The proportion of the 54 teachers who reported delivering Reading Plus for 90 minutes a week was slightly lower than headteachers although still high at 91% (n=49). Of the five teachers who said that they had not delivered Reading Plus in full, two said that they managed 90 minutes most but not all weeks due to other demands on time, one said that pupils were distracted because the class were mixed-age and did not always engage fully,[9] and two said that less than 90 minutes had been devoted to Reading Plus due to timetable constraints.

A large proportion of teachers that responded to the survey (67%, n=37) reported that they delivered three sessions of Reading Plus a week, while less than a fifth delivered two (15%, n=8) or four or more (18%, n=10). When asked how they kept on track, 34 teachers said that the sessions had been timetabled with nine mentioning that having to book the required technology helped also. Nine teachers mentioned that pupil motivation and engagement was an important factor and six said that incentivising use through rewards and challenges was also helpful.

Similarly, teachers in two case study schools told us that their pupils did Reading Plus for at least 90 minutes per week during the trial. Four schools did Reading Plus for around 90 minutes per week. Two of these schools began to use Reading Plus less in the second half of the year, instead prioritising taught reading lessons. Teachers at five case study schools described occasional disruption to the usual practice of 90 minutes due to timetable demands, school trips and other special events, short school weeks, and pupil absence. A teacher in one case study school said that pupils who were working below the level that Reading Plus starts at typically, used Reading Plus less and a different reading programme instead.

IPE RQ2b: The way in which additional visual skills activities are used to support struggling readers

Just under half (48%, n=26) of responding teachers said that they had assigned visual skills activities to pupils in their class. When asked why they had done so, 16 said it was to enable low-ability readers (n=13) and pupils with SEND (n=3) to experience more success, three said it was to motivate pupils with poor engagement and three specifically referred to pupils who were experiencing difficulties with following the text in the Guided Window.

> *Pupils enjoyed them. These were SEND children who struggled to engage with the reading tasks and who took a long time to complete reading tasks. It has helped them make small steps of progress in their fluency*.
> (Teacher, Endline survey)

Teachers in two case study schools told us that they use the visual skills activities to support struggling readers. Both said that the activities were helpful in developing both reading skills and motivation to read and that pupils enjoyed doing them.

IPE RQ2c: How often and for what purposes teachers use the additional activities to support individuals/small groups

Around a third of teachers who responded to the survey (30%, n=16) reported using the teaching tools that are found in the skills tab on Reading Plus, including the worksheets and lesson plans to support individuals or small groups. Nearly half of these teachers (n=7) used the tools once a term, with the others using them once half-term (n=5) or fortnightly (n=4). Most of these teachers felt that the tools were useful, using them for targeted interventions for small groups or individuals. One said the tools informed whole-class teaching, and one said that they were considered useful but timetable constraints meant that they could not use them. Only one teacher said that they had tried using the tools but did not find them useful.

A teacher in one case study school felt that resources on the skills tab usefully broke down reading skills for pupils and had printed these for pupils to complete independently in school or at home. This teacher did note towards the end of the trial that they were using these less, in favour of longer extracts for comprehension activities. In another case study school, teachers had used the resources for the whole-year group or a class, but told us that it was not feasible to use them on an individual basis.

A teacher in another case study school described putting a Reading Plus leaderboard on the wall every week to recognise the achievements of and motivate as many pupils as possible.

---

[9] Two respondents to the teacher survey in intervention schools at endline told us that they taught mixed-year group classes. In these cases, children that were not in Year 5 would work with another adult or join in with the Year 5 Reading Plus lesson, or else the Year 5 pupils would join another Year 5 class for the Reading Plus lesson.

IPE RQ2d: Use of data reported within Reading Plus by teachers to identify and address skills gaps

A majority of teachers (80%, n=43) responding to the survey said that they had used the data reporting tools available in Reading Plus. Teachers said that the data reporting tools had been helpful for monitoring pupils' progress and reporting (n=28), identifying individual or whole-class needs (n=10), motivating pupils through sharing data (n=9), monitoring pupil engagement (n=5), and sharing data with parents (n=5). An open question about how schools experienced the initial pupil assessment suggests mixed views. Around 14 teachers said that their pupils had been able to undertake the assessment without any problems and 12 teachers felt that the data had been useful. However, 17 teachers expressed concerns about the initial assessment not reflecting pupils' actual ability saying that pupils struggled due to lack of familiarity with using technology or the test format, and that some did not engage as fully as they might have.

Staff in all six case study schools told us that they used data from the Reading Plus platform. In five schools, teachers compared data from Reading Plus assessments to their standardised test results to gain a more nuanced view of how pupils were doing. Teachers explained various other uses to which they put the data: to monitor pupils during lessons, for example, to see if anyone is 'on hold'; as an ongoing indicator of pupils' progress with different reading domains and areas when additional learning may be needed; to group pupils based on learning need and deliver interventions; as evidence to communicate with pupils, parents, and senior leadership about progress with reading; and to understand what the pupils have been reading and use that knowledge about pupils' interests to inform lesson planning. In general, teachers' reflection suggested that the data from Reading Plus was useful in understanding pupils' progress in learning to read and planning how to address any skills gaps.

In two case study schools, teachers communicated concerns about the reliability of results from the baseline assessment which they felt were not aligned with standardised test results or classroom learning. In one school, the teacher found the amount of pupil data available slightly overwhelming, while a teacher in another school said that it was easy to use.

IPE RQ2e: Optional use of Reading Plus at home by pupils

Around 71% (n=39) of teachers who responded to the endline survey reported that their pupils used Reading Plus at home. However, 74% of these teachers said that usage was not very widespread, with only a few pupils using it once or twice a week.

In one of our case study schools, a teacher reported that Reading Plus was well-used at home by about half of pupils, with nearly all pupils using it when the school was taking part in a competition. In another, Reading Plus was initially well-used at home, but this declined over time. In the other four case study schools, usage was lower, with only a few pupils using it at home.

Case study schools took different approaches to managing use of Reading Plus by pupils at home. In two schools it was optional. In another, one teacher allowed it and another did not. In another it was encouraged. Two senior leaders mentioned access to Reading Plus at home but took different approaches. In one school access to Reading Plus at home was discouraged and not set as homework because the school was in a high deprivation area and not all pupils had access to the internet. They commented: '*So we as a school made the decision that actually moving back to paper-based actual books for home-based learning is more appropriate*' (Senior leader, Interview). In contrast, another senior leader reported that Reading Plus had helped with reading out of school and at home because pupils were able to access the programme on their own devices.

> *All pupils have access to a smartphone. So, although they might not have books at home, they've got that, they've got that access to it. So, I think that has had an impact. We were thinking that it would have an impact, that, actually, (a) you've got no excuse [not to use Reading Plus at home], (Laughter) and (b) you know, that, actually, they like to be on technology.* (Senior leader, Interview)

It is important to note that Reading Plus is not optimised for use on a smartphone. Users are able to log in from their phones via the browser but the delivery team indicated that depending on the device, the experience may be poor and that they do not recommend pupils access Reading Plus on a smartphone. The perceived impacts mentioned by the interviewee in relation to home use, may however, have included accessing Reading Plus at home on devices including tablets or laptops. Another senior leader commented that they do not set Reading Plus for homework as their parents prefer to read a paper

book with their children rather than reading on screen. In two schools it tended to be pupils who enjoyed reading already or were higher ability readers who used it at home, and in another there was some indication that pupils who had previously not read at home were willing to use Reading Plus. One school encouraged pupils to finish lessons started in class at home and another school asked persistently absent pupils to do Reading Plus at home. In two schools, many pupils had difficulty accessing it at home due to either the lack of a suitable device or another technical issue. In three schools, parents had told teachers that Reading Plus helped them to support children with their reading.

Classroom observations of programme delivery

Observations suggested that a key enabler of the programme is that pupils can access the programme easily and independently. No significant technical issues were observed and staff did not need to provide much support. Staff enthusiasm was also noted as an enabling factor, plus the fact that pupils in the classes observed had the devices nearby and ready to use. During the lessons staff tended to circulate and use the time to listen to targeted pupils read aloud and/or monitor pupils use of the programme/achievements at the front of the classroom using the dashboard. Staff also refocused pupils as needed during the lessons and reminded them to use the Reread function. When a child was on hold, they would have a chat with the teacher about why and what they needed to do once released. Sometimes pupils asked staff to clarify something in the text, or to explain something about how the programme works (e.g. one pupil was confused about the video at the start of being on support mode). Across the observations, children were completing a range of activities (reading with and without the Guided Window, reading comprehension, vocabulary, visual skills and writing activities).

Limited technical issues were observed (one pupil struggled to get online, a refresh was needed for one pupil, for another the text had gone back to the beginning). While most pupils appeared focused there were a small number of boys sitting close to each other in one of our case study schools who were distracted and needed quite a lot of refocusing. In this case, the teacher remained close to the group for much of the lesson and worked closely with one of the pupils, facilitating the engagement of the pupils with the lesson.

Adaptations included some pupils reading out loud to a teacher instead of in their head. Some pupils reading in different parts of the room, for example, outside the classroom so they can read out loud or in a calm space. One teacher said that they ran interventions in small groups based on the Reading Plus data. Observed lessons ranged from 30 to 45 minutes.

Changes or adjustments to the programme

The following section explores the adjustments made to the programme by school staff, and the reasons for making these changes given by survey respondents and case study participants. It answers the following question:

> IPE RQ3: What changes or adjustments, if any, were made to the programme during its implementation? a) Why were these adjustments made?

Around 84% (n=46) of teachers who responded to the endline survey had not made or considered making any adaptations to the delivery of Reading Plus, while 16% (n=9) had. Five teachers said that they had made adjustments to accommodate specific needs: three said that they had adjusted the balance of activities for struggling readers; one said that a pupil with SEND had worked with an adult; and one said that the text levels had been manually altered. One teacher had adjusted the number of sessions from three to two but overall time remained at 90 minutes.

Teachers in three case study schools told us about adjustments that they made to the delivery of Reading Plus. These adjustments mainly related to how the programme was delivered to meet the needs of particular pupils. This includes for example, allowing a pupil to listen to music on headphones or to do the lesson in the corridor if the pupil needed to read out loud. In one school, two pupils read with an adult or used Nessy Reading and Spelling instead of Reading Plus. In another, a teacher in this school adjusted two pupils' assignments and dashboard and used support mode to better support their needs.
One school used Reading Plus to listen to pupils reading every week. This involved staff turning the Guided Window off if possible or else waiting until the pupil was on a section of still text.

There were also adjustments in relation to the time that pupils spent on Reading Plus. One school ran a Reading Plus session every day so that slower readers would be able to finish five lessons. One teacher described shortening lessons depending on pupil needs:

> *I think if you're just giving them it all there, you'd get some children who would be on hold all the time. I have got one child who's consistently on hold, but she has got severe dyslexia. The programme itself says, 'If you're not getting it, they shouldn't be doing it.' But again, because we're doing the trial and they want to be part of everyone else, they have a shorter period of time, and we try to do more visual skills for them.* (Teacher, Interview)

In another school, a pupil with EAL accessed vocabulary lessons in Reading Plus one to one with an adult each week in addition to their 90 minutes.

Pupils at case study schools were not asked directly about adaptations to the programme. However, there were a few instances where they noted changes to standard implementation. Pupils in one school noted that sometimes pupils are sent outside the main classroom to read aloud so as not to disturb the other pupils.

Enablers and barriers

This section addresses IPE RQ4 and examines which elements of Reading Plus may have facilitated or limited its effectiveness and whether any enablers or barriers were experienced by a) FSM-eligible or b) SEND pupils.

Summary of findings

- Headteachers identified initial Reading Plus training, ongoing Daisy Education support, and leadership/peer support as key enablers of implementation, particularly for timetabling, collaboration, and sustaining delivery
- One to one device access, pupils' confidence with technology, and the programme's ease of use enabled smooth implementation, alongside teachers valuing the detailed assessment data for tracking progress and targeting support.
- Pupil engagement was driven by enjoyment, visible progress, rewards, gamification, and certificates, with leadership and teacher encouragement further reinforcing participation.
- Although largely self-guided, teachers remained central to delivery, supporting pupils, monitoring progress, and motivating learners; teacher confidence, buy-in, and digital/literacy knowledge were important for effective use.
- Teachers valued the ability to personalise learning and use assessment data to identify struggling readers, while the programme also increased reading exposure for pupils without books at home and supported some EAL learners through home access. Inclusive design features (e.g. anonymity of reading levels and Guided Window tools) were also seen as helpful, including for some pupils with SEND.
- Timetabling helped ensure consistency, though some leaders noted reduced opportunities for developing broader literacy teaching practice.
- Some pupils, particularly SEND and lower-ability learners, struggled with engagement due to repetitive or lengthy texts, overwhelming choice, and independence requirements.
- Additional barriers included lack of home devices for some FSM pupils (as mobile access is not available) and SEND-related challenges such as attention, behaviour, need for adult support, and difficulty managing breaks or independent navigation of tasks.

Enablers

This section is based on headteacher and teacher survey data and case study data collection. The following programme aspects are explored:

- Technology.
- Pupil engagement.
- Peer support.
- Role of teachers.

- Timetabling and time.

These themes were identified based on deductive coding shaped by the RQ and logic model.
Data for this section comes from the endline surveys completed by teachers and headteachers in intervention schools, and teacher, headteacher, senior lead, and pupil interviews.

As discussed in the section on training and support, headteachers considered that the initial training was a most useful enabler of Reading Plus.

Technology

One theme that emerged was access to technology with 16 teachers and three headteachers identifying 1:1 access to it as a key enabler of success, a view reiterated by senior leaders during the case study visits. Four teachers also mentioned access to headphones to maintain a quiet environment. One school had headphones available, which was useful for certain aspects of Reading Plus including assessments and vocabulary lessons. One school was able to purchase a set of Chromebooks for pupils to use for Reading Plus lessons. Others already had a good availability of devices. As one teacher explained:

> *As part of some extra funding that this school got, we benefitted from some laptops. So we do have the availability of extra laptops, so that both of the classes can access Reading Plus at the same time, which is something, logistically, that I think a lot of schools would have to factor in. Because we've got a class set of laptops per key stage, which is, again, not a luxury that every school could have, it's enabled us to implement Reading Plus effectively, I think.* (Teacher, Interview)

One case study school had a choice of devices for pupils, which the teacher believed helped with pupil engagement. In this school, each pupil had their own allocated device which they were familiar with using across a range of lessons and which made timetabling Reading Plus easier for staff. These were new devices that worked well and the school also had access to effective tech support.

Teachers in all six schools commented that Reading Plus was easy to access from the start, and that pupils were technically confident. This was echoed by headteachers, with one commenting that the programme was very easy to pick up and run with '*with minimal training for both staff and pupils*' (Headteacher, Interview). Their pupils are very '*tech savvy*', used to working with Chromebooks and very able to use logins and QR codes™ '*without fuss and faff*' (Headteacher, Interview). A teacher in one case study school also noted that they themselves found it easy to understand and use the data that the platform produced. A senior leader commented that teachers '*love that they can get such detailed indicators of where the children are. They really like that*' (Senior leader, Interview). Teachers in two schools believed that pupils' computer literacy was an important facilitator to the implementation of Reading Plus, with Year 5 pupils having already developed the knowledge and skills to access the technology.

Pupil engagement

Pupils' enjoyment of the programme was mentioned as an enabler by teachers in two case study schools, where the pupils were confident with the routine of a Reading Plus lesson, excited to begin lessons, happy with the progress they were making, and often spoke together about what texts they were reading. Teachers in five case study schools pointed to particular features of Reading Plus that motivated and engaged pupils, including certificates for the number of words read, unlockable background pictures and avatars, quotes from famous people, and awards for levelling up. One senior leader commented that pupils being able to see the progress they are making is very motivational. In the endline survey, five teachers identified the impact on pupil motivation as a key enabler including the praise and reward (n=2) and gamification (n=1) features.

Peer support

Teachers in all six case study schools told us that their colleagues' support was important to the successful implementation of Reading Plus. Senior leadership in four schools were considered supportive of Reading Plus, making timetabling easier and giving the work a clear purpose. One teacher responding to a question on enablers in the endline survey also mentioned senior leadership support. One senior leader also commented that it was beneficial to have someone in a position to be able to ensure Reading Plus '*happens, and that it's on the curriculum*' (Senior leader, Interview).

In three case study schools, having the support of Year 5 colleagues was also considered helpful. As one teacher explained:

> *Because of working with a team of people that have been so involved, wanting their own logins, up for doing baseline assessments and just going for it, getting involved with the programme in a way that everybody can explain things to the children, everybody knows exactly where they are, you all access it at different points to be able to pull off data, are interested in the interventions, are interested in the impact… That, for me, has been really powerful because it's meant that it's been something that we've all worked together on, and it's been easy in that regard.* (Teacher, Interview)

One case study school had two teaching assistants in the classroom who could assist with Reading Plus. Technical support and technical knowledge among staff was mentioned by teachers in three case study schools as important for setting up devices, dealing with any technical issues and making the most of the programme data available. A teacher responding to the endline survey also noted that a teaching assistant with technical expertise had been a key enabler.

Role of teachers

In the teacher endline survey, seven teachers said that their knowledge of teaching reading and/or technical expertise was a key enabler of success.

While Reading Plus lessons are largely self-guided, teachers told us that their input was often important to the success of lessons. This may involve directly supporting pupils. Three case study teachers said that they supported pupils with lessons, for example, explaining the meaning of words in vocabulary lessons, sitting close to pupils that may need help, reading parts of texts out loud to pupils to aid understanding, working through questions together, agreeing individual targets to motivate pupils, or explaining what pupils need to do to improve.

The role of teachers also included planning and monitoring lessons. Two case study teachers also explained to us the importance of knowing their pupils and anticipating how to manage lesson time in accordance with pupil needs. One teacher told us that they had circulated around the class to make sure that pupils were on task and also had their laptop on in case any pupils were put 'on hold'.

Two case study teachers felt that their own knowledge of and confidence in using the programme was important, and one teacher told us that it was important that they explained Reading Plus to pupils in order to motivate them. Two headteachers responding to a question in the endline survey about additional enablers mentioned teaching staff engagement with the delivery of Reading Plus. That is, there was perceived buy-in from the teachers involved in delivery of Reading Plus. One case study senior leader commented that teachers in their school were reluctant to be involved with Reading Plus at first and had to be convinced that the intervention was going to improve reading achievement. For them the key elements that supported buy-in were being able to see pupil progress, that pupils themselves really enjoyed it, and that the intervention was tailored to each individual child. The tailoring aspect was also mentioned as key by three other case study senior leaders.

Timetabling and time

Eight teachers responding to the endline survey and *t*eachers in four case study schools told us that timetabling Reading Plus lessons was important for its success. This was because it ensured the availability of staff, devices, and time, and also supported pupils with the routine:

> *So, I would say it's about timetabling it in and blocking out the computers. Making sure that you've got them all set up, so the children come straight in, get on with it. I think that's what makes it successful*. (Teacher, Interview)

> *I also think because it's timetabled for specific days, they know what's coming, they know what the expectation is and they do look forward to it.* (Teacher, Interview)

One case study senior leader felt that, even though the amount of time needed to be spent on Reading Plus was a key consideration '*we felt that it could amalgamate nicely alongside what we were already doing, and hopefully add something to the provision rather than taking something away*' (Senior leader, Interview).
Another case study senior leader commented that the low teacher input in the classroom is regarded as both a plus and a minus as it frees up teacher time, but the teacher does not necessarily develop any skills in teaching literacy.

Barriers to effective programme implementation

We asked teachers in case study schools, as well as headteachers and teachers responding to endline surveys, about the perceived barriers to effective implementation of Reading Plus. We first report results from the headteacher and teacher endline survey before outlining case study findings. The following programme aspects are explored:

- Assessment/administration.
- Classroom management and pupil engagement.
- Guided Window.
- Choice of texts.
- Technology.
- Time.
- Cost.

These themes were identified based on deductive coding shaped by the RQ and logic model.

Looking at survey findings first, Figure 17 and Figure 18 show the responses from headteachers. Aspects relating to school context, including capacity, competing priorities, and 'buy-in' from school staff were seen as greater obstacles than factors relating to the intervention itself. The expectations for teaching reading set by Reading Plus and the design of the programme were seen as greater barriers than the training and support provided by Daisy Education.

Figure 17: Headteacher perceptions of school-related barriers or obstacles to effective implementation

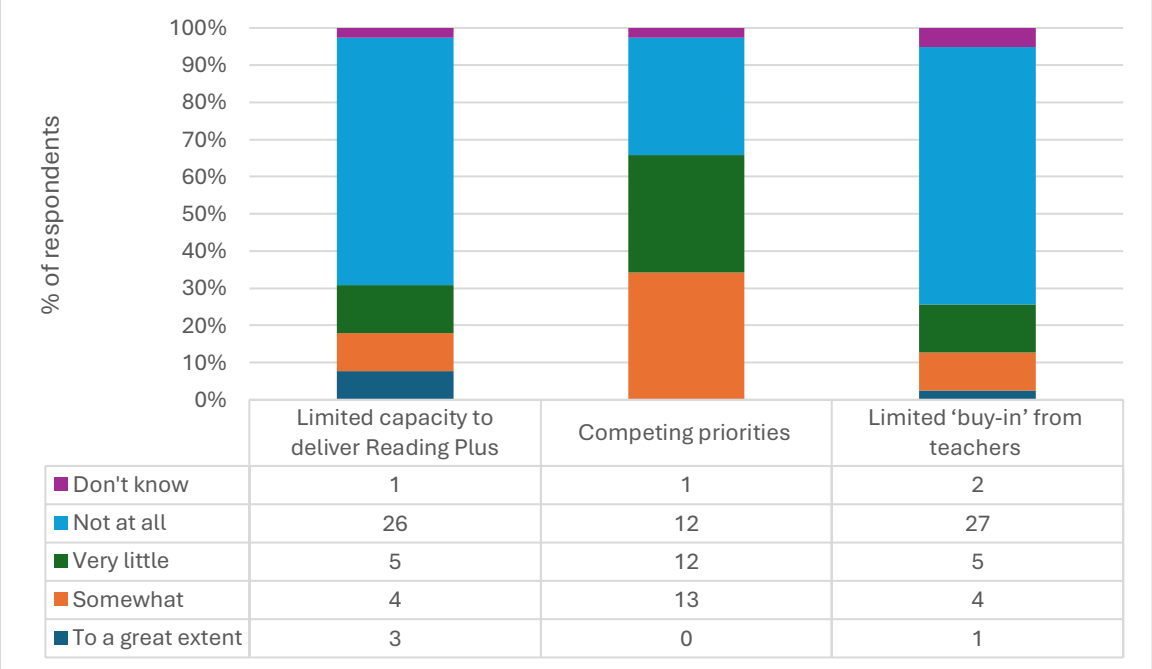
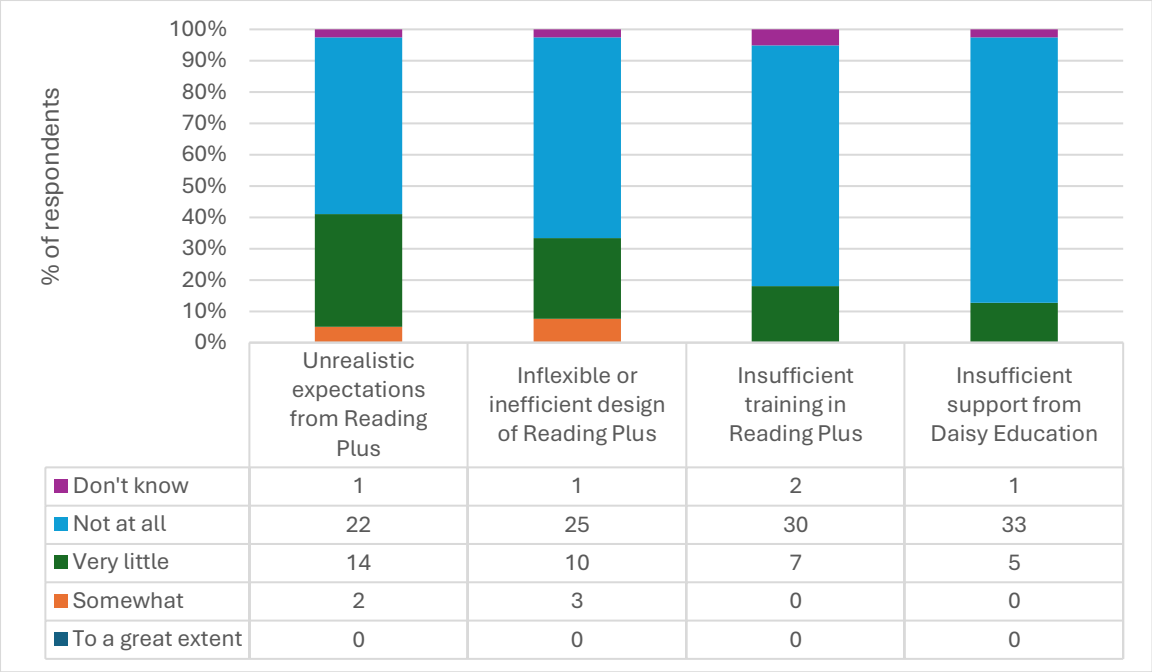


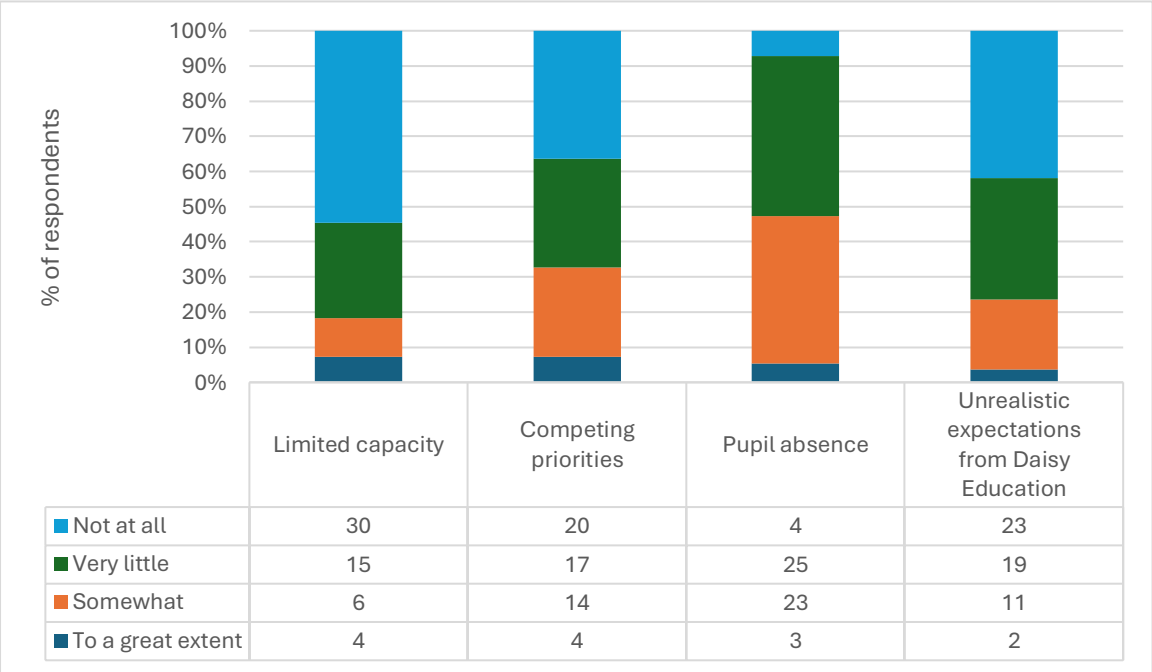
Figure 18: Headteacher perceptions of Reading Plus-related barriers or obstacles to effective implementation



	Unrealistic expectations from Reading Plus	Inflexible or inefficient design of Reading Plus	Insufficient training in Reading Plus	Insufficient support from Daisy Education
Don't know	1	1	2	1
Not at all	22	25	30	33
Very little	14	10	7	5
Somewhat	2	3	0	0
To a great extent	0	0	0	0

Aspects of school context (Figure 19) also posed challenges for teachers: 42% (n=23) of teachers who responded to the survey thought that pupil absence was 'somewhat' of a barrier; and a quarter (25%, n=14) said this of competing priorities (e.g. other interventions or programmes).

Figure 19: Teacher perceptions of barriers or obstacles to effective implementation[a]



	Limited capacity	Competing priorities	Pupil absence	Unrealistic expectations from Daisy Education
Not at all	30	20	4	23
Very little	15	17	25	19
Somewhat	6	14	23	11
To a great extent	4	4	3	2

[a] This question was asked to teachers in intervention schools at endline: 'Please indicate the extent to which you consider the following factors to have been barriers or obstacles to the effective implementation of Reading Plus lessons in your classroom; Limited capacity to delivery Reading Plus lessons (e.g. due to staff turnover), Competing priorities (e.g. other interventions or programmes), Student absence, Unrealistic expectations for teaching reading set by the Reading Plus programme.'

We also asked teachers in case study schools, as well as headteachers and teachers responding to endline surveys, for more detail on the barriers to implementation, and they raised a number of further issues.

Assessment/administration

A teacher in one case study school said that it would be useful to have an option of an additional assessment for pupils, in addition to the mid-term assessment offered by Reading Plus, to support teachers' summative data analysis.

A teacher in another case study school explained the logistical challenges of using the extra resources to support individual pupils, rather than pupils being supported within the programme itself, and said that this was prompting the school to consider increasing the number of taught reading lessons delivered per week.

Classroom management and pupil engagement

A teacher in one case study school told us that pupils in their class finished their Reading Plus lessons at different rates, and that ensuring being quiet for those slower to finish was a challenge. Linked to this point, a senior leader commented:

> *Some of the children have found it very difficult to just slow down and pace themselves. Because they are particularly competitive, they just want to race through and get it done. So, it has been a learning curve for them about what's best for them and why we're doing it… Some of them are adamant that they are quicker readers than the system thinks they are.* (Teacher, Interview)

In one case study school, the teacher reported that pupil engagement was an issue at the start of the programme because some pupils had been assessed at a lower level than they would usually work at, resulting in a lack of engagement with the lessons.

In three case study schools, teachers reported that as pupils progressed through the programme and lessons became harder, confidence and engagement fell. Conversely, in one school, teachers reported that some lower-ability readers were repeatedly on hold and in support mode which was demotivating.

In three case study schools, teachers reported that some pupils began disengaging with Reading Plus around the middle of the year, shown by either a lack of interest in lessons or increased rates of inaccuracy. The teachers explained this through a combination of factors including the novelty of using the programme wearing off, pupil frustration at not levelling up and not being able to access the higher-level texts that their classmates were reading, and not being able to change text if they did not like their chosen text.

In another case study school, the teacher told us that their Year 5 class was not motivated by certificates but would have appreciated another reward (e.g. more wallpaper choices) for levelling up. Teachers in another case study school explained that it was not possible to customise the leaderboard to ensure that a range of pupils were included in it and that this would be useful for encouraging all pupils.

Pupils in three case study schools identified people being noisy (e.g. talking, messing about, or reading aloud nearby) as being a barrier to successful implementation. For example, one pupil noted that when '*everyone's reading out loud, and it just becomes loads of scrambled up words*' (Pupil, Interview, Visit 2). Another pupil noted that it can be distracting when '*teachers, kind of, talk over my head*' (Pupil interview, Visit 2). In one case study school, pupils noted that if they were asked to do Reading Plus outside the main classroom so they could read aloud, it was important for there to be a member of staff to make sure that pupils did not just chat and that they spread out so as not to distract one another.

Guided Window

Teachers in two case study schools specifically discussed the Guided Window as presenting barriers to the implementation of Reading Plus. In one school, the teacher described the Guided Window as a '*hindrance*' for readers at higher levels and teaching assistants said that many pupils preferred reading without the Guided Window. Teaching assistants in this school also reported challenges with their usual practice of asking pupils to read out loud, since the Guided Window moved too fast for oral reading, and discussing the text, since the window resulted in the rest of the page being blurred out. In another school, the teacher had noticed that the meaning of vocabulary in Reading Plus texts was often difficult to explain since the Guided Window often concealed part of the sentence.

Choice of texts

Teachers in three case study schools told us that the choice of texts can be a barrier to pupils' engagement with Reading Plus lessons. Two senior leaders at one case study school also commented that the choice of texts is a drawback:

> *Pupils will choose books on subjects and topics that they enjoy. Which on the one hand is good because it means pupils will make good progress as they're reading what they enjoy; on the other hand pupils aren't exposed to a range of different texts such as poetry*. (Senior leader, Interview)

In one case study school, pupils who had been assessed in the baseline assessment as at a lower reading level struggled with enjoyment of the texts provided at that level. In another school, teachers reported that some pupils needed support to choose texts, either because they found the choice overwhelming or because they tended to spend too much time choosing texts. In the third school, the teacher reported that pupils who had completed many lessons found that their choice of texts was limited.

Technology

Teachers in the case study schools told us about a range of barriers related to the technology needed to access Reading Plus. Similarly, nine headteachers and seven teachers responding to endline surveys also noted that lack of access to devices (n=11) and technical issues (n=5) were barriers. One issue was making sure that devices are available to the class at lesson time and charged. In some schools this involved timetabling access to devices. During a case study visit one senior leader reiterated the challenges of having too few devices. They described how pupils:

> *Had to do Reading Plus at different times which has been a bit challenging because we don't have enough devices for them to do it all at the same time... I think the staff also find it quite hard, you know, that they finish at different times. So, what do you do with that child that's finished a good 10 minutes before?* (Senior leader, Interview)

A second issue is having to use old, poor quality, or unreliable technology. In some situations, schools told us that this involved devices being slow to load, not working at all, or updating system software during lesson time. Teachers mentioned occasional connectivity issues and glitches in the running of Reading Plus that required pupils to refresh the page or restart the device. One teacher mentioned that it took time for pupils to get used to logging in and get started with lessons, while another explained that pupils frequently lost login details for devices.

Time

Teachers in two case study schools reflected on the amount of time that Reading Plus takes in a week and the difficulty with having the time to teach other reading lessons alongside. Four teachers responding to the endline survey also identified time constraints as a barrier.

Cost

Although not a barrier during the trial, two headteachers responding to the survey noted that the cost of Reading Plus would be a barrier to them continuing to use the programme in the future.

Barriers and enablers in relation to pupils who are eligible for FSM and SEND pupils.

Enablers

Four teachers in case study schools told us that having the teacher-led flexibility to assign different types of lessons, for example, vocabulary and visual skills, was useful for these subgroups of pupils. One headteacher responding to the endline survey expressed a similar opinion with three others noting that personalisation was helpful and two saying that the assessment data enabled staff to identity struggling readers more easily and provide targeted support. From a different perspective, one headteacher responding to the same endline survey said that Reading Plus freed the teacher up to focus on the very small number of pupils who they felt were not yet ready to access the programme.

One teacher said that exposure to reading among pupils without reading material at home was beneficial. Three teachers also said that since Reading Plus was available to use at home it was helpful to EAL pupils where parents found supporting with homework a challenge.
While competition among pupils to progress in Reading Plus is an important aspect of the programme, one teacher said that pupils not being aware of each other's levels was inclusive of all reading abilities. One teacher said that the Guided Window was particularly helpful for the pupils in their class with SEND to focus on and understand texts.

Barriers

Just over half of teachers in intervention schools who responded to the endline survey (59%, n=33) indicated that there were some subgroups (including those with SEND, low-ability readers, reluctant readers, and others) who did not appear to enjoy and/or struggled to adapt to the Reading Plus approach. The most frequent reasons given for this included: challenges accessing some or all of Reading Plus (n=15); and poor engagement (n=14) for example, due to the length of some books and repetition. Individual comments included finding the choice of books overwhelming.

While some of these comments suggest barriers that might apply to pupils in general, particularly less able readers, teachers in case study schools gave more details on the barriers faced by FSM-eligible and SEND pupils in particular. Teachers in three case study schools told us that some pupils who were eligible for FSM did not have access to suitable technology at home to use Reading Plus, with part of the issue being that Reading Plus is not available on phones. Clearly this is an issue that may affect some non-FSM pupils as well. Teachers in four case study schools described a range of examples of barriers that were specifically experienced by pupils with SEND. These included behavioural difficulties related to the competitive aspects of Reading Plus, and challenges related to the focus on silent reading rather than reading out loud. Two teachers also told us about the difficulty of taking a break to improve focus compared to paper-based work, because of the need to log back in afterwards. A teacher in one school described some pupils having difficulty focusing without adult input:

> *Obviously, for some children who are on the SEND register, they've found it very hard, some of them, to concentrate on the programme because it has the Guided Window. I know a lot of the time, if I look at those children, they won't be focusing on it. A lesson probably takes about 15 to 20 minutes, but because it's independent and they're not being prompted by an adult, I think that's actually been harder for them than a whole-class reading lesson.* (Teacher, Interview)

In another school, a teacher made the similar point that it was difficult for them to support pupils that need adult input because pupils were working on different texts.

Perceived impact and stakeholder experiences

This section addresses IPE RQ6 and explores what teachers, headteachers, and pupils thought about Reading Plus and the extent to which they felt it had an impact on a) reading fluency, b) reading comprehension, c) vocabulary, d) overall reading attainment, e) feelings about reading, f) closing the 'reading gap', g) teacher workload, h) teachers' understanding around reading. We also explore the extent to which teachers perceive Reading Plus to be effective for all pupils. The findings draw upon staff perspectives gathered through staff surveys sent out to all intervention schools and staff interviews conducted in the case study schools. Pupils' perspectives were captured during group interviews at the six case study schools.

Summary of findings

- Teachers and headteachers were generally positive about Reading Plus and believed it had improved pupils' silent reading fluency, comprehension, vocabulary, and overall reading attainment. Silent reading fluency was perceived to be the area of strongest impact.
- Teachers particularly valued the programme's rewards system, formative assessment tools, and personalised approach, while opinions on gamification features and the Guided Window were more mixed. Some teachers found these motivating and supportive, while others felt they could be distracting or restrictive for certain pupils.
- Most teachers who responded (43) reported that pupils had a positive experience of Reading Plus, particularly at the start of the intervention, although engagement sometimes declined as the novelty wore off. Pupils generally enjoyed the range of texts, rewards, choices, and use of technology.

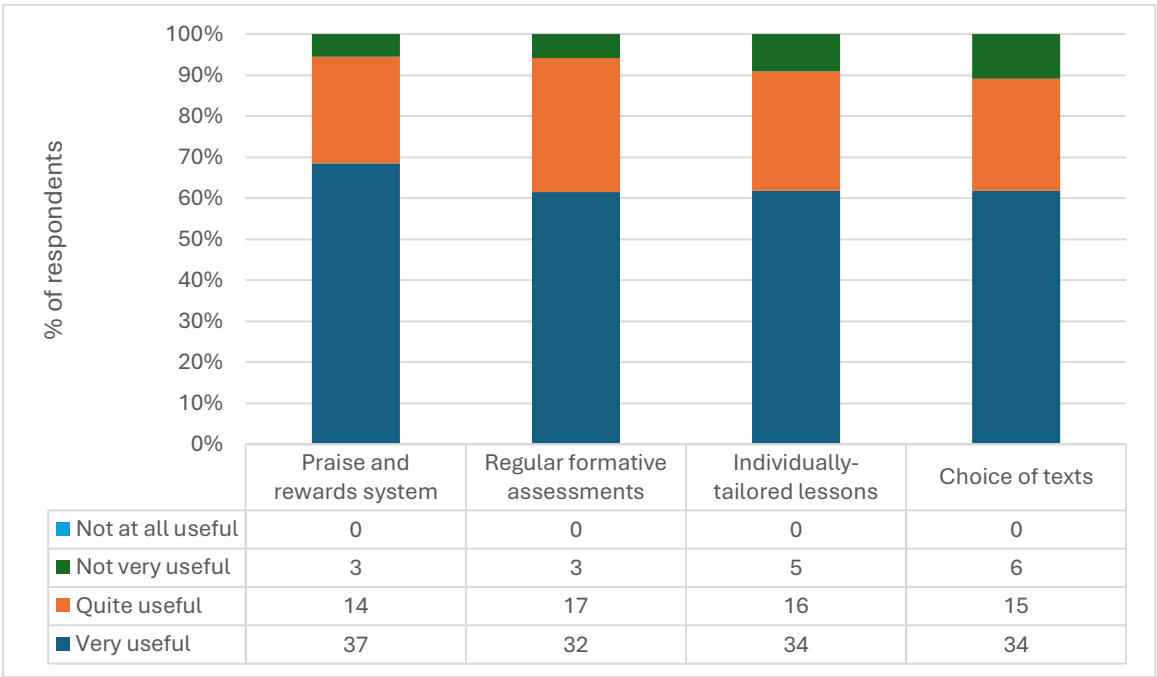
- Teachers believed Reading Plus had positive effects on pupils' silent reading fluency, cross-curricular knowledge (69%, n=37), confidence in reading (82%, n=46), motivation to read (79%, n=44), and interest in reading (77%, n=43).
- Teachers reported that reading for pleasure had increased 61% (n=34).
- Teachers across case study schools reported improvements in pupils' vocabulary, reading stamina, and range of reading.
- Perceptions of impact on fluency and comprehension were more mixed. Teachers often reported improvements in silent reading, fluency, and basic comprehension, but some questioned whether these transferred to oral fluency or extended written responses.
- Reading Plus was often seen as particularly beneficial for reluctant readers, boys, and some pupils with SEND or EAL because of its personalised and technology-based format. However, some teachers felt lower-attaining pupils benefited less.
- Teachers valued the personalised nature of Reading Plus, feeling it allowed pupils to work at their own pace and level and helped build reading confidence.
- Staff consistently reported that Reading Plus reduced workload by reducing lesson planning and allowing more time for monitoring pupils and identifying gaps in learning.
- Teachers also felt that Reading Plus supported wider reading skills, including rereading, scanning texts, understanding assessment-style questions, and developing cross-curricular knowledge.
- Some schools raised concerns that progress shown within Reading Plus did not always align with external summative assessment results, particularly for higher-order comprehension and written responses.

Headteacher and teacher endline survey responses

We asked teachers for their perspective on how useful various features of Reading Plus were in terms of developing their pupils' reading skills. As can be seen in Figure 20, the praise and rewards system built into Reading Plus, for example, notifications about number of words read and certificates, was considered particularly useful among teachers, as was the regular formative assessment. The gamification features, for example, avatars, backgrounds, and combos were considered the least useful features out of the choices presented to teachers.

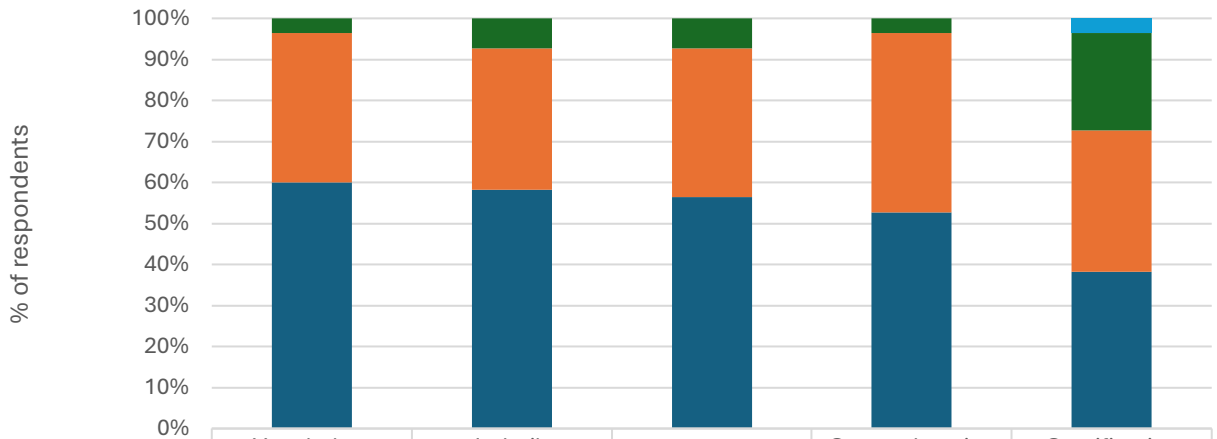
Figure 20: Teacher perceptions of usefulness of Reading Plus features

(a)



	Praise and rewards system	Regular formative assessments	Individually-tailored lessons	Choice of texts
Not at all useful	0	0	0	0
Not very useful	3	3	5	6
Quite useful	14	17	16	15
Very useful	37	32	34	34

(b)



	Vocabulary tasks	In-built assessment	Guided window	Comprehension tasks	Gamification features
Not at all useful	0	0	0	0	2
Not very useful	2	4	4	2	13
Quite useful	20	19	20	24	19
Very useful	33	32	31	29	21

Teachers made a wide range of comments in relation to their views of specific features of Reading Plus, often contradictory, and sometimes variously saying that features could be both enablers and barriers. Eight teachers said that the praise and reward system was motivational. Seven teachers noted that the wide choice of texts was good although one said that it was overwhelming for some pupils. Personalisation was also highlighted as useful with six teachers saying that it had a positive impact on progress and two saying that it enhanced pupil engagement. Comments on the Guided Window were divided with five teachers saying that this feature had a positive impact on reading speed and engagement, while five teachers reported issues such as forcing a pupil to slow down their reading. Five teachers noted that gamification (such as the avatars) was distracting or not motivational. Individual comments included: comprehension tasks not being effective; gamification being beneficial; insufficient gamification; and an overreliance on multiple choice questions. When asked whether any of the features were particularly helpful for supporting pupils who are eligible for FSM, who have SEND, or EAL, teachers most commonly mentioned the visual skills (n=10), the Guided Window (n=4), the vocabulary tasks (n=4), and personalisation (n=3).

The endline survey asked teachers about their pupils' experiences of Reading Plus overall. Of these, 43 indicated that their pupils had a broadly positive experience and a further nine said it had been positive initially, but that pupils' enjoyment had tapered towards the end. Four teachers said that it had been challenging for pupils with poor concentration or low reading ability and two said that their pupils did not enjoy using Reading Plus.

> *At the start of using the programme, pupils were very excited and engaged—they were keen to complete lessons and many children would go on at home. As the year continued, their enthusiasm dwindled slightly as the novelty wore off, so there was less engagement at home but the children still completed the weekly lessons to a high standard. The majority of the pupils speak very positively about the programme, especially because of the vast range of texts, the rewards and the avatars. I think many of the pupils also enjoy the programme due to it being on a device, rather than paperback*. (Teacher, Endline survey)

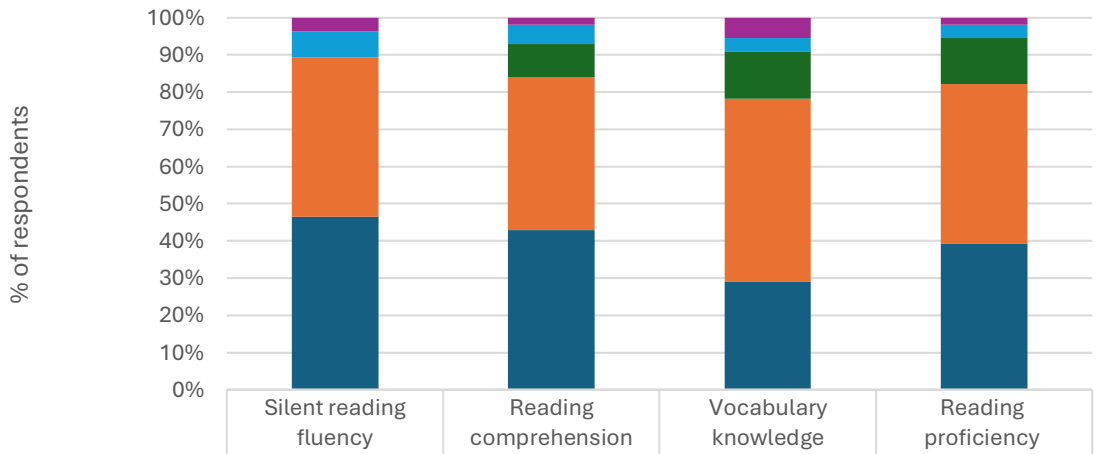
> *The children really enjoyed using Reading Plus. They liked the Guided Window and the fact that they got feedback on their progress. As the novelty wore off engagement dropped but I was supported by the [Daisy Education] team to offer incentives for comprehension scores and this raised engagement again*. (Teacher, Endline survey)

> *They did not particularly enjoy it as a whole. Lower-ability children [were] frequently off task*. (Teacher, Endline survey)

We surveyed teachers on their perspectives of the impact of Reading Plus. As shown in Figure 21, there was particularly strong agreement that teachers had observed an improvement in their pupils' silent reading fluency as a result of Reading Plus, and also strong agreement that they had seen a positive impact on comprehension, vocabulary, and reading

proficiency. Responding to an open question about impact, over a quarter of headteachers mentioned a positive impact on fluency (n=13) and reading progress or outcomes (n=13). Similarly, teachers responding to the endline survey felt that the biggest benefit was a positive impact on silent reading fluency (n=14) with five mentioning an impact on outcomes more generally. A smaller number of headteachers and teachers referred to a positive impact on comprehension (headteachers: n=7; teachers: n=3) and vocabulary development (headteachers: n=3; teachers: n=5). Underpinning this, teachers responding to the endline survey identified some additional benefits of Reading Plus: personalisation (n=10), tracking progress (n=4), and an increased amount of time spent reading (n=4). The Guided Window was also specifically mentioned by four teachers in relation to improving fluency.

Figure 21: Extent to which teachers believed Reading Plus had a positive impact on aspects of pupils' reading skills



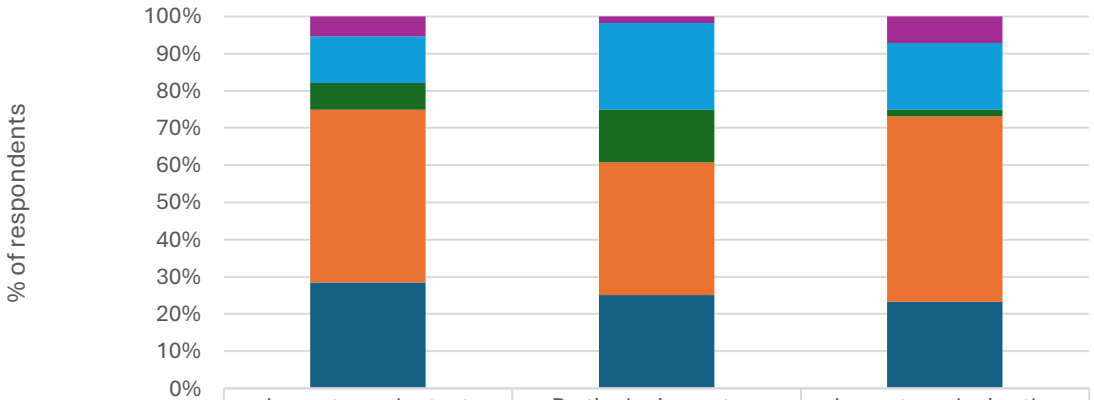
	Silent reading fluency	Reading comprehension	Vocabulary knowledge	Reading proficiency
Strongly disagree	2	1	3	1
Disagree	4	3	2	2
Not sure	0	5	7	7
Agree	24	23	27	24
Strongly agree	26	24	16	22

In addition, a majority of teachers agreed or strongly agreed that Reading Plus had had a positive impact on pupils' cross-curricular knowledge (69%, n=37) and that Reading Plus had prepared pupils well for their end of Key Stage 2 national assessment in reading (66%, n=37). In terms of the affective elements of reading, strong majorities believed that Reading Plus had had a positive impact on pupils' confidence in reading (82%, n=46), motivation to read (79%, n=44), and interest in reading (77%, n=43). Similarly, headteachers responding to an open question about impact, felt that there had been a

positive impact on engagement and enjoyment (n=14) with a small number identifying a positive impact on pupils' confidence in reading (n=4). One headteacher specifically stated that they had hoped that Reading Plus would have a positive impact on engagement but that this had not been realised.

In terms of the impact on subgroups of pupils, a majority of teachers who responded to the survey agreed or strongly agreed on all three measures reported in Figure 22, although on all measures and especially in terms of the programme having a particular impact on boys, at least a quarter of teachers disagreed or were unsure. In terms of Reading Plus working particularly well for boys, this reflects data from our case study schools, discussed in the 'Feelings about reading' subsection later on, where some staff believed that boys had engaged particularly well with the non-fiction texts in Reading Plus. Others had not enjoyed using the programme but this seemed to reflect a disengagement with reading more generally rather that with the programme itself. The closed question survey data also reflects three comments in the endline survey that referred to boys enjoying working on devices, answering multiple choice questions, and the competitive aspects of Reading Plus, but being less interested in discussing book choices with classmates.

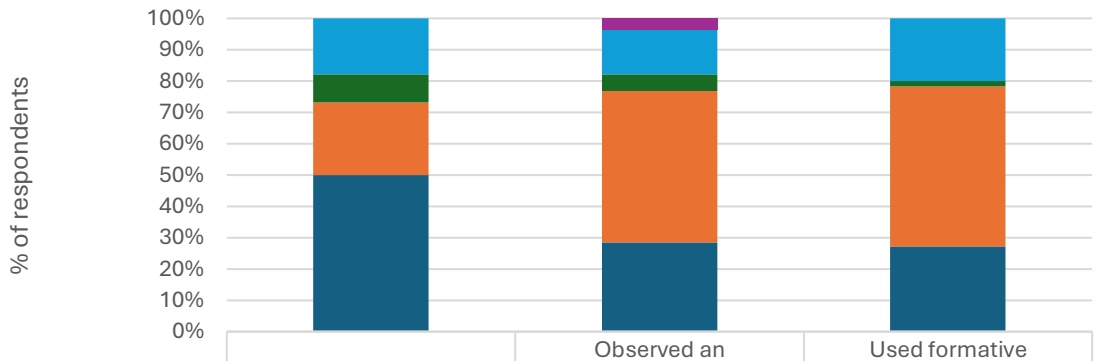
Figure updated 22: Teacher perspectives on the impact of Reading Plus on subgroups of pupils at endline



	Impact on reluctant readers	Particular impact on boys	Impact on closing the 'reading gap'
Strongly disagree	3	1	4
Disagree	7	13	10
Not sure	4	8	1
Agree	26	20	28
Strongly agree	16	14	13

In terms of the impact on teachers' working practices, the response was similarly positive (Figure 23). A majority of teachers agreed or strongly agreed with all measures, with particularly strong agreement that Reading Plus had had a positive impact on teachers' workload, with five identifying this as a key benefit in an open-ended question. At least a fifth of teachers however, disagreed or were unsure about each measure. Five headteachers also noted that teachers benefited from access to the assessment data generated by Reading Plus when responding to an open question on impact.

Figure 23: Teacher perspectives on the impact of Reading Plus on their working practices



	Noticed a reduction in workload	Observed an improvement in my knowledge of silent reading fluency	Used formative assessment provided by Reading Plus in lesson planning
Strongly disagree	0	2	0
Disagree	10	8	11
Not sure	5	3	1
Agree	13	27	28
Strongly agree	28	16	15

Around 61% (n=34) of teachers who responded to the survey reported seeing evidence that Reading Plus had had a positive impact on pupils' reading for pleasure. This was echoed by one headteacher responding to an open question on impact. Examples of impact on reading for pleasure given by teachers responding to the endline survey include:

> *Reluctant readers are now willingly picking up books and enjoying them.* (Teacher, Endline survey)
>
> *They seem to be more interested in non-fiction and finding out about things. Previously we have noticed that the children weren't that keen on non-fiction generally. With Reading Plus it appears to have sparked an interest in non-fiction.* (Teacher, Endline survey)
>
> *When we have reading for pleasure time in class, some pupils will ask to go on Reading Plus during this time as they like having a large selection of texts. Lots of pupils have particularly enjoyed non-fiction texts and have been keen to share new facts learnt from these texts with me.* (Teacher, Endline survey)

Just over a third of respondents to the teacher survey (35%, n=19) believed that Reading Plus had had less impact on some groups of pupils. The most popular responses to a question about which groups, were pupils with SEND (n=12), pupils with EAL (n=4), and low-ability readers (n=3). Two teachers felt that there had been less impact on high-ability pupils. Three headteachers also mentioned this when responding to an open question on impact, saying that pupils with SEND and struggling readers did not benefit as much as their more able peers.

Around a quarter of respondents to the teacher survey (26%, n=14) believed that Reading Plus had had more of an impact on some particular groups of pupils. The most popular responses were: higher ability readers (n=5); pupils with SEND (n=5); and boys (n=3). Individual responses included: pupils working just below the expected level; middle-ability readers; and reluctant readers.

Case study schoolteachers' responses

Fluency

Teachers in two case study schools did believe that pupils in their class were generally more fluent with silent reading, and two had witnessed improved oral reading fluency in class. Teachers in three case study schools told us that silent reading speeds on Reading Plus specifically had improved.

However, one teacher did not believe that Reading Plus had had a broader impact on fluency at all. Two felt that they could not comment fully on the impact due to the individual nature of the programme, although one of these teachers had noticed problems with their pupils' pronunciation and cadence.

Comprehension

Teachers in three case study schools believed that Reading Plus had had an impact on their pupils' reading comprehension. One of these teachers highlighted a particular increase in pupils' accuracy with lower-order questions and another highlighted an impact on lower-ability readers.

Vocabulary

Teachers in all six case study schools told us that Reading Plus had had an impact on their pupils' vocabulary. All felt that vocabulary had improved as a result of doing Reading Plus. This was echoed by a senior leader who talked about the way in which Reading Plus exposes children to vocabulary they may not otherwise experience. Teachers mentioned that pupils enjoyed the vocabulary lessons, that they were useful for teaching verb forms, word families, and subject-specific words, that some pupils were using new words in their writing, and that the lessons were particularly helpful for pupils reading at lower levels. Two teachers mentioned that impact was limited by the limited data available to the teacher on the vocabulary lessons and the teacher not being aware of what vocabulary the pupils have learned and so not able to make links in the wider curriculum.

Reading proficiency

One teacher told us that all of their pupils had made progress through the Reading Plus levels and two others said that the results of their pupils' summative assessments had generally improved.

There were different experiences among case study schools in terms of which groups of pupils seemed to have benefited most from the programme in terms of their reading proficiency. One teacher told us that it was pupils working at age-related expected level or greater depth that had made the most progress. In one case study school, pupils were scoring well halfway through the year as assessed by a standardised paper test, but towards the end of the year, pupils working at greater depth had not improved while those working at a lower reading age continued to improve. In another school, the teacher felt that reading proficiency had improved, particularly for those 'working towards' the expected standard.

Pupil progress may have been aided by the individually tailored nature of Reading Plus lessons, which four teachers in case study schools told us was a particularly helpful aspect of the programme. These teachers liked that Reading Plus enabled pupils to read a text and answer questions at their own level and at their own pace, which was not possible with a whole-class text. One teacher liked that the 'support mode' within Reading Plus enabled pupils to access tailored support that teachers would not be able to offer on an individual basis. As one teacher said:

> *I find the programme, I like that it's personalised to each individual child, so it really is based on their progress each week. You couldn't get a more personalised programme, which I like*. (Teacher, Interview).

Feelings about reading

Teachers in all six case study schools said that they had noticed an impact on their pupils' reading enjoyment. Pupils were engaged in the lessons and enjoyed choosing texts that they were interested in and sharing reflections on those texts with the teacher. As one teacher said:

> *And I think particularly from a child engagement point of view they really enjoy going on it, they really enjoy finding the text, they really enjoy telling us about things that they've learnt from the texts. So in terms of them wanting to read, that motivation to read, that's worked very, very well.* (Teacher, Interview)

In one school, teachers had noticed that pupils were more attentive when listening to class books and more likely to complete their reading at home tasks. Teachers in three schools told us that their pupils were starting to enjoy a wider range of books, particularly non-fiction as these types of texts were prevalent in Reading Plus. According to teachers in two schools, pupils took pride in their scores and enjoy trying to achieve high scores, although this became harder to achieve as they progressed through the levels and may have affected those pupils' confidence.

For three case study schools, teachers told us that Reading Plus had encouraged boys to engage with reading lessons, increasing their reading range and volume. One senior leader perceived that Reading Plus had been '*good for bigging up non-fiction*' (Senior leader, Interview) which the boys particularly benefited from. They added:

> *I've noticed in my class that boys have really enjoyed the non-fiction because I think although we give them a broad and balanced array of books, maybe we do tend to go down the fiction route more so in our reading lessons.* (Senior leader, Interview)

While teachers also suggested that boys particularly enjoyed reading non-fiction texts, a teacher in one school told us that the boys in their class had not engaged well with Reading Plus and in another many boys had disengaged towards the end of the year.

Teachers in all six case study schools believed that Reading Plus had been beneficial for reluctant readers. As one teacher said:

> *I do think, in my class, it has. It has been better for reluctant readers. They're the ones that have gone up, but they'd previously disengaged, and I think they've found something with Reading Plus that they've struggled with before. It has given them a boost'*. (Teacher, Case study school)

Teachers told us that all pupils were keen to progress through levels to read the same texts as their peers, were more willing to go on Reading Plus than to read a book, enjoyed working on devices, and reading shorter texts. In two schools, the teachers believed that Reading Plus lessons provided dedicated time for pupils to actively read when they would not usually. In three schools, reluctant readers who would not usually read at home had been willing to use Reading Plus at home, although this tailed off towards the end of the year in one school. One senior leader mentioned the competition factor as motivating reluctant readers at home. In one school, the teacher did not believe that Reading Plus had encouraged reluctant readers to read outside of lessons.

The choice of texts within Reading Plus was an important facilitator of pupil enjoyment for staff in two schools. Teachers in one school reported that pupils liked the range of texts available and that the categorical structure of the library was useful in aiding pupil choice:

> *So I think the wide range of texts that's on Reading Plus in the many different areas means they are really engaging with it. They can find things that suit their interest levels in a way that we can't always necessarily do through our book corners or our school library, just because of space limitations.* (Teacher, Interview)

Teaching assistants in the second school enthusiastically praised the text of choice for covering a range of tastes and prompting pupil enjoyment. Teachers in three schools also said that pupils having the choice of texts, rather than texts being chosen for them, was an important motivator of pupil engagement. As one teacher said:

> *I think what's been important for Reading Plus is that it is far more driven by them as well. I think they quite like that, I think they like time away from me talking to them. It's a lesson where they have a choice over what they read. They like the fact that they get to rate the stories afterwards, I think that's quite important for them.* (Teacher, Interview)

Closing the reading gap

In one case study school, the teacher believed that Reading Plus was closing the reading gap in their class and explained this through the individually tailored nature of the programme. In two other schools, teachers were more tentative although believed that Reading Plus had closed the reading gap in their classes to some extent.

One senior leader described how there were learning gains for lower-ability pupils but they were hoping that all pupils would make progress. Staff had hoped to see stronger progress across the cohort, but some pupils identified as greater-depth learners showed a decline in their NFER scores rather than the expected improvement. They went on to say that this led to discussion about whether, if they were to use the programme once the trial had finished, Reading Plus would be most effective as a targeted intervention with certain pupils.

In two other schools, the teachers did not believe that Reading Plus had closed the reading gap in their classes; while Reading Plus had helped most pupils, there were a group of pupils persistently reading at a significantly lower level. A senior leader at one case study school commented that pupils feel like they're making progress because that is what Reading Plus is telling them, but that '*a more formal paper-based assessment of an hour (three texts and sets of questions) didn't reflect this progression*' (Senior leader, Interview).

Teacher workload

Staff in all six case study schools reported that using Reading Plus had reduced their workload. Teachers in five case study schools said that using Reading Plus led to a reduction in the amount of time that they spent planning lessons, because Reading Plus lessons did not need to be planned. There was also a shift in how staff in four schools spent their time as a result of the self-directed nature of Reading Plus lessons. Instead of directly teaching a reading lesson, teachers could spend time interacting with pupils, monitoring pupils' work, listening to pupils read, or completing other tasks. As one teacher said:

> *I'd say, in terms of workload, it has reduced the workload for teaching reading because it's all there for you. You spend your time more looking at the progress that they're making or being able to identify any gaps.* (Teacher, Interview)

In terms of the workload of implementing a new programme, a teacher in one school had not found this burdensome, while a teacher in another had.

Teachers' understanding of teaching reading

While the impact of Reading Plus on teachers' knowledge of teaching reading is necessarily shaped by their previous experience, in three schools staff felt that Reading Plus had refined their knowledge of teaching reading in some way. In one case, the teacher felt there had been some increase in their knowledge in terms of approaches to teaching reading and in particular to teaching spelling and vocabulary. A teacher in another school felt that using Reading Plus had improved their knowledge of question types and pace, and teaching assistants in the third school also felt that their knowledge of question types had improved.

Teachers in three schools felt that Reading Plus had not improved their understanding of how to teach reading. In one case, the teacher felt that practice in teaching reading within their school was lacking due to using Reading Plus. One of these teachers did feel that using the small group lessons, which they had not yet done, could be an opportunity for professional development.

Variety and volume of reading

Teachers in three schools said that their pupils were reading more as a result of Reading Plus, both in school and at home. Two teachers said that pupils' stamina had improved, in that they were more willing to listen to and to read text outside of Reading Plus lessons. Teachers in five case study schools said that their pupils were reading more broadly across genres than before, and two of these teachers believed that this was good preparation for reading tests.

In addition, teachers in three schools said that the Guided Window helped most pupils to focus and read the words instead of skimming:

> *I think that the window [Guided Window] has really focused them on what they're reading. Compared to before, when they do free reading and sometimes maybe don't focus. And it has helped their pace as well. So I do think it has been really useful*. (Teacher, Interview)

A teacher in one school said that it was particularly useful for pupils reading at a lower level. Teachers in two schools mentioned that the Guided Window did not help to focus a minority of pupils, although it is not clear from the comments why this was.

Cross-curricular knowledge

Teachers in all six case study schools told us that Reading Plus had had an impact on pupils' cross-curricular knowledge. They described a two-way relationship, where pupils sought out Reading Plus texts that were linked to their wider curriculum and also contributed what they had learned from Reading Plus texts to other lessons and also used this knowledge in their own writing.

Subgroups of pupils

Teachers in four case study schools told us that Reading Plus had been useful for pupils with EAL. In particular, the possibility of using Reading Plus to independently continue learning at home and the vocabulary lessons and were mentioned. One senior leader also reflected that pupil vocabulary had improved at their school, particularly for pupils eligible for Pupil Premium and FSM. Reading Plus has helped to expose these pupils to language they may not have otherwise come across. For these pupils, the programme has helped close the gap with higher attaining pupils and has helped to increase their confidence *'because it's at their own level'* (Senior leader, Interview).

A teacher in one school said that Reading Plus had been popular among some of their pupils with SEND, who found it motivating and tailored to their learning needs. In another school, teachers felt that Reading Plus had been engaging and confidence-building for readers at a lower than age-related reading level but less so for pupils reading at an age-related level. These teachers also felt that some of the pupils that they have targeted for extra support with reading were held at low levels by Reading Plus because of the baseline assessment when they were working at higher levels in other areas of the curriculum.

The perceived positive impact on reluctant readers was also echoed by one of the reading consultants:

> *There was one school that came back to me and said they had a little boy who didn't like reading at all, but actually he's asked to go to the library to pick a book on the back of what he's read on Reading Plus. It's moments like that that you realise you're making a difference.* (Reading consultant, Interview)

Reading culture

While a teacher in one case study school said that using Reading Plus had strengthened the school's image as a 'reading school', comments from teachers in other schools focused more on its impact on classroom reading culture. Teachers in two case study schools told us that Reading Plus had raised the profile of reading in their classroom, for example, through increased book talk and pupils competing to read the most words.

Reading behaviours

Teachers in three case study schools told us that the 'rereads' in Reading Plus, where pupils are able to refer back to the text to find the answer to a question, have enabled pupils to develop useful skills for answering questions in assessments. As one teacher said:

> *Before, they were just trying to sit there and stare at the question and think it was just going to come up in their brain. They know now, 'Oh, I need to go and reread it,' because they're used to using the reread button.* (Teacher, Interview)

Teachers mentioned other reading skills that pupils had developed through using Reading Plus, including: skills at understanding new vocabulary; of reading an unknown text and pulling information from it; scanning text; understanding questioning language commonly used in assessments like 'summarise'; and of working independently which is good for their confidence as well as staff workload. These skills were useful for other lessons as well as assessments.

There was some disagreement around pupils' understanding of higher-level questioning, with one teacher believing that Reading Plus had improved this and teachers in another school being concerned that pupils had not developed those skills.

Unexpected outcomes

One of our case study schools withdrew from the trial because of concerns about the results of summative tests that their pupils had completed. At our first visit to this school, staff had identified that some pupils were not making progress, and that the progress that was being made in Reading Plus did not correlate with the results of external summative assessments.

This is the only school that we know of that withdrew from the trial for these reasons. However, in three case study schools, concerns had emerged after a few months of implementation about reading comprehension among some pupils based on summative assessment results. In one of these schools, the results of summative tests did not correlate with the rate of progress that staff had seen in Reading Plus data.

> *We felt that during our end of term assessments, we were seeing gaps in their reading comprehension ability. Although they're very good at the multiple-choice or picking something out, they do still struggle with writing reasoned answers to reading comprehension questions*. (Teacher, Interview)

We can also say that in two case study schools, staff felt that the Reading Plus data did correlate with the results of summative tests, and in two schools, staff had no concerns about pupils' performance in summative assessments. For example:

> *We did the interim assessment with Reading Plus, but then we did an assessment, which is a written one. Through our assessments that we do, our NTS reading assessments, standardised testing, I saw progress in every child, which was great*. (Teacher, Interview)

Case study school pupil perspectives

Below, we outline what pupils perceived to be the impact of Reading Plus to be on the outcomes specified within the logic model (see IPE RQ6 above) and their insights in terms of the mechanisms which might support these outcomes.

Summary of findings

- Pupils felt Reading Plus improved reading fluency mainly through the Guided Window, which helped them read at a better pace, track text more easily, and gradually increase reading speed, although some felt it sometimes forced them to read too quickly or limited independent pacing.
- Pupils reported that Reading Plus increased the amount of independent reading they did, both in school and at home, helping them practise reading more regularly.
- Visual skills activities were generally seen as enjoyable and sometimes helpful for scanning and tracking text, although opinions on their usefulness varied.
- Pupils felt Reading Plus supported comprehension through quiet independent reading, comprehension questions, rereads, and opportunities to revisit key parts of texts.
- The Reread function was widely valued because it helped pupils locate evidence, improve memory of texts, and answer questions more accurately.
- Some pupils found comprehension questions challenging or confusing, particularly drag-and-drop tasks and longer texts requiring strong memory skills.
- Pupils across most schools believed Reading Plus improved their vocabulary knowledge, helping them learn definitions, challenging words, and vocabulary they could use in writing and other subjects.
- Pupils liked the structured vocabulary activities and progress tracking, though some found the activities difficult or frustrating when mistakes were not fully explained.
- Overall, pupils generally enjoyed Reading Plus, especially at the beginning, although some reported that it became repetitive over time.
- Pupils particularly valued the wide choice of fiction and non-fiction texts, especially non-fiction topics linked to interests such as sport and history.
- Rewards, combos, certificates, avatars, and visible progress tracking were strong motivators and often made reading feel more game-like and engaging.
- Many pupils felt Reading Plus improved their confidence as readers because they could see measurable progress and work at an appropriate level.
- Pupils often preferred Reading Plus to previous whole-class or guided reading approaches because it was more personalised, independent, flexible, and less pressured.
- Several pupils felt Reading Plus increased their motivation to read and encouraged more reading at home, although a small number still disliked reading overall.

Pupils' perceived impacts on reading fluency

There were three mechanisms through which pupils felt Reading Plus promoted reading fluency, relating to the Guided Window, the volume of independent reading, and the visual skills activities.

Guided Window as a tool for promoting fluency

In all of the focus group interviews pupils talked positively about the Guided Window as a useful scaffold for reading. A key theme of the discussions across all schools was that pupils felt the Guided Window helped them to '*read at a better pace*' (Pupil interview, Visit 2). Many pupils talked about how the Guided Window helped them to increase their reading speed. For example, one pupil suggested that the Guided Window supports pupils to make incremental progress with their reading speed over the year:

> *It gets faster in little steps. Like, when you start, it goes quite slow, and by the end of Year 5, all of us will be going way faster than we would have at the beginning of the year, back in September.* (Pupil interview, Visit 1)

One pupil suggested that the gains in reading fluency when using Reading Plus transferred to their offline reading, and three pupils described how the Guided Window stopped them from rushing, for example:

> *I think DreamBox has improved my reading because before I was introduced to DreamBox I was always reading very quickly, but DreamBox made me read normally.* (Pupil interview, Visit 1)

Interestingly, one pupil described how the programme slowed them down initially while they strengthened their proficiency and then scaffolded them to gradually speed up:

> *Because it slows you down at first, but then because I used to be really fast at reading but I wasn't so good at it. But it slowed me down but then it started to get faster and faster, so when I know the words properly it helps me to get faster.* (Pupil interview, Visit 1)

Pupils also spoke frequently (across all six schools) about how they felt the Guided Window helped them to follow along/keep track of the words while reading, as illustrated by the example quote below:

> *I like it because sometimes when you're not using it, you can just get muddled up in which part you're on. So if you follow that, you can't lose where you're reading so you don't read two parts at once and it's really helpful.* (Pupil interview, Visit 1)

Additionally, some pupils suggested that having the Guided Window also supported them to focus their attention on the meaning of the text (e.g. '*I feel like I remember it better with the Guided Window*' [Pupil interview, Visit 2]), and several pupils suggested that an important part of why they felt the Guided Window supported them with fluency, was its adaptive nature (e.g. '*I like it, because then it reads at a certain speed, where it reads at the speed that some people like*' [Pupil interview, Visit 1]). Two pupils highlighted how they value being able to choose their own speed (e.g. '*it says, "Too hard or too fast." And you can click one, and then it either slows it down or puts you in support mode*' [Pupil interview, Visit 2]), and three pupils mentioned that they appreciated the fact that you can pause the Guided Window (e.g. '*if you're finding it hard to concentrate, or you need to try and think of what a word means*' [Pupil interview, Visit 2]).

While pupils were positive about the Guided Window overall as a tool to support fluency, some drawbacks and considerations were identified. Three pupils mentioned that they prefer reading at their own pace (rather than following the Guided Window), while acknowledging that it is a useful aspect of the programme initially to help you develop your fluency. For example, one pupil reflected:

> *I like that it actually improves your speed of reading a bit, but the annoying thing about it is that it also makes you rush a bit about it.* (Pupil interview, Visit 2)

Interestingly, one pupil suggested that the drive to read faster was welcomed but implied that this contrasted with the advice they were given when reading aloud to their teacher:

> *It makes you faster, because when it records my G-rate [Guided Reading Rate], and when I read my normal books, I end up, like, going really fast, and I'm getting told to slow down, so it makes me really fast, which is actually quite great for me.* (Pupil interview, Visit 1)

This suggests that perhaps the pupil is not always reading for meaning when reading at speed. Some pupils suggested that they would prefer it if you had the option to turn it on or off across all levels (not just some).

> *Because when you're on, like, level Pre-A, and then A, and then B, I think, you don't get to pick if you read it independently or Guided Window, and I think it would help with it, because [name of pupil] I think is still on Pre-A, and she finds it easier to read it independently, but she can't read it independently, at the minute.* (Pupil interview, Visit 2).

Three pupils suggested that they would like it if you could turn back a page if you wanted to make sure you had understood something properly. For example, one pupil noted:

> *I'd quite like it if, when we're reading, you could also go back a page, so you can really memorise it, so you get all the questions right.* (Pupil interview, Visit 2)

Similarly, another pupil noted that the fact that Guided Window keeps progressing forward means that when you encounter an unfamiliar word, there is not time to '*sound it out*' (Pupil interview, Visit 1). When the pause button is pressed, the text on screen is blurred and so pupils will be unable to sound out words.

<u>Lots of practice with independent reading</u>

The second mechanism in the logic model which was at least implicitly supported by pupils' responses, was the idea that Reading Plus will support fluency because it provides learners with lots of opportunities to read independently. When asked whether Reading Plus had changed anything about how they read, one pupil responded emphatically: '*Definitely the amount*' (Pupil interview, Visit 1), indicating that they now read much more than before. Similarly, another pupil reflected: '*I like how it practices your reading a lot. It's way better than guided reading, because you can just turn on the laptop and go on different books*' (Pupil interview, Visit 1). And a third pupil noted: '*I think Reading Plus has helped me to read more books because before I never read unless I was forced to*' (Pupil interview, Visit 1). While pupils did not mention fluency specifically when talking about how Reading Plus helped them by getting them to read more, the link between reading volume and reading fluency is well established (e.g. Allington, 2014).

<u>Visual skills activities as fun (but less said about impact on fluency)</u>

When asked about the visual skills activities, which the logic model suggests may also support fluency, some pupils described these activities as enjoyable (e.g. '*I find it fun to do if you've done all your reading books and all your vocabulary*' [Pupil interview, Visit 1]); whereas others were less keen (e.g. '*I find the Flash and Scan just boring*' [Pupil interview, Visit 1]). One pupil tried to articulate the mechanism behind the impact of the visual skills activities as follows:

> *It kind of gets your eyesight in a sense, because the one that says you have to find a C in all the O's and scan it, it's kind of helping your eyesight to figure out.* (Pupil interview, Visit 1)

As reflected by the length of the different sections above, it was the Guided Window which pupils had the most to say about in terms of perceived impacts on fluency. This is perhaps to be expected, given that the potential impact of the volume of reading and/or visual skills activities on fluency might be less tangible from an experiential point of view.

Pupils' perceived impacts on comprehension

There was a general consensus among pupils that Reading Plus supports reading comprehension, articulated in terms of three key aspects of the programme: opportunities to read quietly; reading comprehension questions for each text (and related rewards for performing well on the questions); rereads which enable the pupil to go back to the relevant part of the text when trying to answer the questions; and the provision of a broad selection of texts which develop general knowledge.

<u>Reading quietly</u>

Pupils across all six schools highlighted that Reading Plus supports reading comprehension by providing regular opportunities to read independently in a quiet classroom environment. Pupils suggested that this context allowed them to concentrate on what they were reading (e.g. '*I like it because it helps me focus and I won't get distracted that easily*' [Pupil

interview, Visit 1]), allowing them to make better sense of the text. For example, one pupil noted when reading quietly as a whole class:

> *It's a lot easier to concentrate on what you're reading, and now we're in Year 5, it's pretty much silent when we're doing it. And then, it's way easier to answer the questions. Because it sticks in your head, because it's way easier to concentrate.* (Pupil interview, Visit 2)

Another pupil made the insightful comment that it is easier to create a mental model of the text when reading quietly, something which Garnham and Oakhill (1996) highlight as a key aspect of skilled reading:

> *...when I read in my head, I can imagine it in my head. I can imagine what happens in my head, but if I'm reading it out loud, you can't really focus on it. You can't imagine it.* (Pupil interview, Visit 1)

On the other hand, a couple of pupils noted that it is not always possible to realise the ambition for a quiet reading space (e.g. 'Y*eah, it's not always silent; we have some people just pretending to type'* [Pupil interview, Visit 1]), and one pupil noted that they prefer to use Reading Plus to enjoy a quiet moment reading at home, suggesting that is it easier for them to relax there:

> *I usually do it on Saturdays or Sundays after I do football, and then I come home and it's just nice and peaceful and I feel more comfortable doing it at home in a more comfortable area.* (Pupil interview, Visit 1)

While the vast majority of pupils suggested that regular opportunities to read quietly was a key advantage of Reading Plus, one pupil noted that there is limited space to engage in the social side of reading within the sessions:

> *Yeah, I don't like it [reading by myself]. Because I want to tell people what I've been reading [...] I like to tell people what I like.* (Pupil interview, Visit 2)

Within the same conversation, another pupil agreed that some time to talk about books with one another would be useful:

> *I don't think we should talk, but I think after Reading Plus we should have some time to suggest books to other people*. (Pupil interview, Visit 1)

And another pupil suggested that it would be good if there was some time built into Reading Plus to practice reading out loud as well as silent reading:

> *I think it would be more helpful if it had a mode where once every week you get to do a bit where you read it out loud, and it tells you, l, how you're reading out loud. Because reading in my head has always been fine, but reading out loud, sometimes I find it tricky to sound out the word.* (Pupil interview, Visit 2)

<u>Questions</u>

Pupils across four of the six schools talked about how the questions after each text support them with reading comprehension. It was suggested by several pupils that the questions help pupils to think about and remember what is happening in the text. For example:

> *It's like the questions...make me think back to what we read. Like normally I read a book and it's kind of gone out of my mind once I've read it, but I find that I'm thinking more about the books I've read and then making connections between them more.* (Pupil interview, Visit 1)

It was also suggested that having to answer the questions independently (rather than discussing the questions as a whole class) is beneficial for reading comprehension as pupils have to acquire the knowledge themselves:

> *[Previously] we had to answer the question, which was like a whole class, but then if I didn't know the question, then when I was being told the answer, then like I'd be like, Oh..., but in Reading Plus, it's better because you actually know the answer*. (Pupil interview, Visit 2)

Similarly, one pupil commented that the questions provided accountability, encouraging pupils to focus their attention on their reading:

Yeah, so you have to read it. It's not like you can just press 'play' and then chat to your mate next to you. (Pupil interview, Visit 1)

Interestingly, some pupils suggested that the increased focus on reading for meaning had transferred to their wider reading beyond Reading Plus, for example, one pupil commented:

I'm probably reading probably a bit more now, after Reading Plus, because I'm finding it more interesting, because I'm thinking about what I'm reading more. (Pupil interview, Visit 1)

Pupils noted that the questions can be challenging, which can be off-putting but also enjoyable if you persevere:

So sometimes, if you get lots of reds, like I used to do, it said, 'Is it too hard or too fast?' and I always put hard, because I can read it easily, but in the questions, the questions I think are more boring, sometimes, than the actual story, so…and I did Rereads and stuff, but normally I used to speed up on the questions, because I didn't like them, but now I do like them. (Pupil interview, Visit 2)

Pupils in two of the schools noted that some of the questions were confusing, for example, '*a lot of the time the questions aren't worded very well*' (Pupil interview, Visit 1). In particular, pupils in one school discussed not being clear on how to answer the questions where you drag and drop boxes:

My least favourite is the one you drag the boxes, because it doesn't really indicate like, it doesn't say, 'Put the one that happened first here, put the last one there.' It doesn't really say. (Pupil interview, Visit 1)

Pupils in the same school suggested that some of the questions are '*quite wordy*' and '*pretty complicated*' (Pupil interview, Visit 2), which they felt made it tricky to answer them, and one pupil in another school noted that they find it difficult when you have to read the whole text before answering the questions:

…now they've added this new feature, where you read the whole text, and I have a bad memory, so if you read the whole text, and at the end you have to do it, so, I've been really struggling with that, and I don't like that. (Pupil interview, Visit 2)

<u>Rereads</u>

Pupils across five of the six focus groups suggested that the Reread function was helpful for supporting reading comprehension, for example:

…say you didn't know a question and you clicked on the reread, it would give you the paragraph that it's in and like highlight over what it is but if you had just a regular text, then you'd have to scan the whole text again, trying to like see where the actual answer is. (Pupil interview, Visit 1)

Two pupils suggested that rereads helped them with comprehension by supporting them to remember key elements of the texts, for example:

I like the rereads, so that you aren't just doing it just basing it off memory. Because I have awful memory, so if I did it just based off memory, I'd probably get zero every time. (Pupil interview, Visit 1)

One pupil noted that once you get to a certain level on Reading Plus, you are no longer able to use rereads, which creates an additional level of difficulty, for example:

When you get a good G-rate on it, you get to the point where you can't use rereads anymore. So, you really need to challenge your brain a lot. (Pupil interview, Visit 1)

While the general consensus was that rereads were a key strength of the Reading Plus programme, two pupils mentioned that they would like to have more rereads available (rather than five per text). For example, one pupil suggested:

We get five. I think you should have a limit on ten so if you use ten on one story you can't use any other reread for the next two stories. So it's like rechargeable. (Pupil interview, Visit 1)

Pupils in one school highlighted that there were occasions where the rereads were not as helpful as they would have liked, for example:

> *The only problem I have with rereads is some of them aren't [...] You, kind of, have to look at it very hard to actually figure out if the answer is there or if the information you need to help you is there.* (Pupil interview, Visit 1)

In one focus group, pupils reported that they were not clear on what the rereads were at first and so they did not use them initially:

> *I used to think that the Reread button would take you back to the beginning of the story, and you'd have to read it again*. (Pupil interview Visit 1)

This indicates the importance of the different elements of the programme being explained to pupils when they first start using Reading Plus.

Pupils' perceived impacts on vocabulary growth

There was a general consensus (highlighted across five of the six schools) that Reading Plus helps develop vocabulary knowledge, as reflected by the two pupils' emphatic statements: '*I can really say the vocabulary has helped me understand more words*' (Pupil interview, Visit 2); and '*My vocabulary is definitely better. I'm more of a walking thesaurus now*' (Pupil interview, Visit 2).

Three pupils noted that the definitions are helpful, for example, '...*you know many more definitions of the actual word*' (Pupil interview, Visit 1). And four pupils suggested that Reading Plus supports vocabulary growth by providing an appropriate level of challenge, for example:

> *I like how it challenges your brain a lot [...] It's, like, you can get really hard words, and you need to really think about it. It makes me feel like I'm pushing myself a lot.* (Pupil interview, Visit 1)

One pupil noted that the follow-up question that pupils are asked, if they get the initial question wrong, is helpful for developing their vocabulary knowledge:

> *I like that [...] you can do this little bonus question, [...] where you get the definition of the word and then you have to write the word and its correct type of tense into a sentence.* (Pupil interview, Visit 1)

Two pupils mentioned that they liked the fact that Reading Plus gives them enough time to engage with the words in order to absorb their meaning, for example:

> *I like it because when you do vocabulary lessons, it doesn't speed ahead. It gives you time because maybe you might want to write it down in your vocabulary book* (Pupil interview, Visit 2)

However, one pupil suggested that '*It's quite fun, but it is annoying, how you click it and it's only up for, like, really quickly*' (Pupil interview, Visit 1).

Another pupil noted that they find the scoring system motivates them to focus more on the word meanings:

> *I like vocab because it keeps track of your scores on it and it says words in progress [...] well I like how when you do it again, it changes the point. So you'll want to look at it and make sure you don't lose any points.* (Pupil interview, Visit 1)

Three pupils suggested that they were able to transfer their vocabulary knowledge developed through Reading Plus to other areas of the curriculum, for example, '...*it will tell me about the word at the end so that I know what it is. Like when I actually am writing, I can use that word in it*' (Pupil interview, Visit 1). Whereas a pupil at another school, felt that some of the words were '*a bit pointless'* stating '*I didn't think I'd use them in any of my writing*' (Pupil interview, Visit 2).

There were a few minor negative points raised about the vocabulary activities by some pupils. As for the reading comprehension questions (see above), some pupils expressed frustration at the high threshold for success. For example:

> *I don't like when it flashes and you have to pick a definition of it, because if you get that one wrong, then you need to redo the word later on when you do more vocabulary [...] Even if you get like full marks*. (Pupil interview, Visit 1)

> *...it's sometimes annoying when you click on the wrong answer to the first question, because the first one you click on it takes as your answer.* (Pupil interview, Visit 2)

However, as noted above, some pupils appreciated the level of challenge. Pupils in one school made more general points about finding the vocabulary activities particularly difficult, for example, '*I find the vocabulary quite hard, and I just can't work my head around it. I can't just figure it out. It's just... It's really hard*'(Pupil interview, Visit 1). Pupils in the same school noted that they would prefer the words to stay on the screen for longer: '*I don't like the fact that it's on there for a millisecond [...] if you even blink, you miss it*' (Pupil interview, Visit 1).

Another issue, raised by pupils in two of the schools, was that the vocabulary lessons do not explain why you got the answer wrong. For example:

> *It just tells you that it's wrong, and it doesn't even tell you the right answer or anything. So maybe it could tell you the right answer, so you know, like, how you could explain it into that phrase.* (Pupil interview, Visit 2)

Pupils' perceived impacts on overall reading proficiency

As one might expect, pupils did not clearly differentiate between how they felt Reading Plus supported their reading proficiency in general from how they felt it supported the constituent components of comprehension, fluency, and vocabulary. Their statements tended to relate either implicitly or explicitly to these three constituents, so we have grouped their statements under the three different competences above rather than under general reading proficiency.

Pupils' perceived impacts on feelings about reading

On the whole, pupils seemed to enjoy using Reading Plus, at least in the beginning. For example, pupils described it as '*brilliant,*' '*a great reading website,*' and '*a generally amazing place*' (Pupil interview, Visit 2). Some pupils however noted that it '*gets repetitive and it gets harder to move up*' (Pupil interview, Visit 2) after a while. One pupil in the same school summarised their feelings about Reading Plus as, '*I think it works really well, until it gets a bit boring*' (Pupil interview, Visit 2). Similarly, a pupil in another school stated:

> *I found it pretty good. At the start, I think I preferred it to how it is now. It gets... like, sometimes I find the reading is a bit boring, but other than that it's pretty good.* (Pupil interview, Visit 2)

One pupil suggested that that it might better to '*use it for half the week [···] so you get to read real books, and online books*' (Pupil interview, Visit 2). Another suggestion was that Reading Plus could be used for '*three or four weeks*' and then alternated with '*actual reading books for the rest of the weeks*' in a repeated cycle '*so it's not always Reading Plus, Reading Plus, Reading Plus*' (Pupil interview, Visit 2).

On the other hand, three pupils across three schools indicated that they liked Reading Plus more once they had been doing it for a while and were '*more used to it*' (Pupil interview, Visit 2):

> *I feel like I like it better than it was, because now we just know what we're doing and stuff, and it helps you, because if you get lower than 80, then you can work harder the next day.* (Pupil interview, Visit 2)

One pupil suggested that they began to enjoy Reading Plus more as their confidence in reading grew:

> *Yeah. When I first had it, and I thought it was a bit boring for me, and stuff. And now, when I'm doing it now, I notice, myself, I'm liking it more every time. I'm getting better at reading and stuff.* (Pupil interview, Visit 2)

And some pupils were entirely positive about the programme:

Nothing's wrong with it, basically. (Pupil interview, Visit 1)

I like reading and vocabulary, like every single bit, because we don't know what's going to happen next and stories are just random and some are not really real and some are just things that we need to know and learn. And I like the words that pop up in vocabulary. (Pupil interview, Visit 1)

I really like it because really, it's fun. (Pupil interview, Visit 1)

As well as providing general indications of the extent to which they found Reading Plus enjoyable, pupils also provided more specific indications of how they perceived Reading Plus to have impacted their feelings on reading across six themes, relating to their perceptions of: i) potential impacts on motivation to read; ii) the range and quality of the texts available; iii) the potentially motivating influence of the progress trackers and rewards within the programme; iv) impacts on reading confidence; v) comparisons between attitudes towards Reading Plus and prior reading instruction; and vi) comparisons between online and paper-based reading.

Motivation to read

Several pupils indicated that Reading Plus made them feel more positive about reading, for example, '*DreamBox has made me feel more better and motivated about my reading*' (Pupil interview, Visit 1). One pupil articulated that Reading Plus had helped them to enjoy reading within lessons more as well as having a knock-on effect on their feelings about reading more generally:

When I just was originally reading, I wouldn't normally join in, and I'd maybe read a page, maybe, a week, or something silly. And now [...] when I did Reading Plus, it, kind of, boosted it, so then it let me learn a bit, and I found it fun. And when I went back to the original reading, I actually found that fun as well. (Pupil interview, Visit 1)

Two pupils in one school indicated that they now read more at home:

So when I was in Year 4, I didn't really used to read. I only used to read, one page every day. But now, when I get home, I normally hop right on Reading Plus, I read some of that, and then I start reading other books. (Pupil interview, Visit 1)

*It's changed me a lot because the way I used to read, I used to read about a chapter a day, but now I'm reading about five chapters a day [...] Two in the morning and three when I go to bed. (*Pupil interview, Visit 1)

One pupil in the same school noted that a benefit of Reading Plus is that it widens access to texts to make reading more accessible for children to engage in at home:

...*if you are at home and you need your book and you don't really have any at home, then you have to go and buy it. But on Reading Plus, you can just go to it*. (Pupil interview, Visit 1)

One pupil in another school, however, stated that they '*still hate reading*' (Pupil interview, Visit 2) suggesting that Reading Plus may not be able to foster positive attitudes to reading in all pupils. This pupil explained that their dislike of reading stems from the fact that '*it takes forever, when you could just watch television*', that they '*can get very stuck on some of the words*' and be '*there for ages on one word*' (Pupil interview, Visit 2).

Broad choice of fiction and non-fiction texts

A common theme across five of the schools in relation to what pupils found enjoyable about Reading Plus, was the fact that pupils got to choose what they read from a broad range of fiction and non-fiction texts. For example, one pupil noted, '*I like it because you can pick the text that you want to read*' (Pupil interview, Visit 1). The non-fiction texts seemed to be particularly popular. For example, one pupil noted, '*I enjoyed it because of the categories that you can choose from. So I like the type of different categories like history, sports and stuff like that*' (Pupil interview, Visit 2). One pupil indicated that they '*don't like the fiction ones on Reading Plus, because they are a little bit babyish*' (Pupil interview, Visit 2). However, some pupils reported enjoying the fictional stories (e.g. '*The stories are just intriguing and I like reading them. They're interesting*' [Pupil interview, Visit 1]). One pupil indicated that the choice of texts available within Reading Plus was fostering

more positive attitudes towards reading in general, making them *'feel better about reading and different authors and different styles of books*' (Pupil interview, Visit 1), and another reported that Reading Plus has broadened their reading preferences: '*I used to like reading fiction books before, but now I really like informational non-fiction books because there's a lot of them on Reading Plus*' (Pupil interview, Visit 1).

Pupils also noted that the blurbs for the texts were useful, helping pupils to get '*more interested*' (Pupil interview, Visit 1) about the different texts on offer. The filters that you can use to find similar books to ones you have enjoyed previously were also described as helpful, for example, '*I like Reading Plus because you can choose what books you read and you can put filters on. So you can know what you like*' (Pupil interview, Visit 1).

On the other hand, pupils from three of the schools suggested that they would like there to be a greater choice of texts available. For example, one pupil noted that you sometimes get to a point within a level where you have read all the books that you fancy reading:

> *...you read all the ones that you think are going to be really good, but then you don't have any stories that you think look good to read, and you're, kind of, just, like, 'I have to get to the next level, but there are no stories that I like'.* (Pupil interview, Visit 1)

Another pupil suggested that it would be good if *'every week, you could change the books, like, what would be on there, so that you're not just looking at the same books over and over again'* (Pupil interview, Visit 2). Pupils in the same school suggested that it would be good if the programme included real children's books:

> *What would be more fun is if we could have, like, actual big books, like 'Matilda', children's books [...] And then you could read a chapter, and for each chapter you answered the questions.* (Pupil interview, Visit 2)

One pupil suggested that Reading Plus works well to get people interested in reading, but then maybe they need to switch to books, where they can access a wider choice:

> *I think Reading Plus is a brilliant website, but that it needs bigger chapter books, and maybe it's better used in a short time, to get children and adults into actually reading more books, because then they've got the whole range, because on Reading Plus the range is limited*. (Pupil interview, Visit 2)

<u>Progress tracking and rewards as motivators</u>

A key theme across the interviews was that pupils found it motivating to receive rewards for their progress. For example, one pupil reflected that:

> *...when you just read a normal book, you might pay attention to it, but you're not fully involved, but in Reading Plus, you get stars and, as children, you would want to get good stars*. (Pupil interview, Visit 1)

As well as the rewards themselves, the fact that the system made pupils' progress visible was also described as being motivating:

> *...how it can record stats that shows you how many words you read in like a minute, and how many books you've read and you can see the books you've read.* (Pupil interview, Visit 1)

A central aspect of the reward system is that pupils can earn 'combos' for scoring above 80% across multiple texts, which some pupils described as making reading more fun *'because it feels more like a game'* (Pupil interview, Visit 2). There was a consensus among pupils that combos were a motivating influence overall, for example, '*On combos, it really makes me happy, and it motivates me to do more whenever I get a combo*' (Pupil interview, Visit 1). One pupil described how the combo feature helps them to preserve and maintain stamina:

> *...when I'm just finished reading I'm so excited to see the combos and it makes me boost my strength to keep on going because sometimes when I get some wrong I'm like I don't wanna do it anymore, but when I see the combo and it says gold or silver then it boosts me to continue.* (Pupil interview, Visit 2)

Another pupil, however, noted that they *'see some people, like exploiting it, but just skipping the whole book and guessing the answers, sometimes'* (Pupil interview, Visit 2).

While pupils were positive about combos overall, they note that sometimes the combos can '*stress them out a little bit*' (Pupil interview, Visit 1) if they get less than 80% on a text and have to start working towards the combo again. For example:

> *I don't like how you have a perfectly good 100% or 90% question, and if you get a red box or two yellow boxes on the next question, that combo gets completely wiped out.* (Pupil interview, Visit 1)

Similarly, another pupil expressed frustration about it sometimes being difficult to achieve high scores: *'I don't like how it has to be over 80%. Because over 80% is quite hard. Because a lot of the time the questions aren't worded very well'* (Pupil interview, Visit 1). And one pupil noted that they sometimes feel pressured in Reading Plus lessons, because you have to read non-stop throughout the lesson and try to remember everything you have read:

> *...sometimes I feel like in the middle of Reading Plus I do need a break, and I feel like if they did, 'Right, we're going to do half the reading, once we get to the halfway point we'll stop' [...] And also, you have lots of stuff to take in, and then remember all that stuff for the answers, and then most of that stuff you forget about, and then you get the answers wrong, and can get less than 80%.* (Pupil interview, Visit 2)

When pupils earn a combo they unlock benefits, for example, new avatars and backgrounds. They also receive other rewards through the programme including certificates (e.g. for reading 50,000 words) and 'Well done' messages. Pupils across the focus groups agreed that they like the avatars, especially the fact '*they have different pictures that you can choose*' and '*they help you to express yourself*' (Pupil interview, Visit 2). Pupils also suggested that the possibility of acquiring new avatars was motivating, for example, '*if you read properly and you do the questions properly, then you earn more profile pictures*' (Pupil interview, Visit 1). Interestingly, the aesthetics of Reading Plus seemed to be very important to pupils. While they really like being able to choose from a broad range of avatars, several pupils noted that they would like there to be more backgrounds available '*because some backgrounds just don't go with any of the avatars*' (Pupil interview, Visit 2). Pupils also suggested that Reading Plus could be made better still by including more opportunities for customisation, for example, being able to make the avatars look like them and '*edit it to your own style [...] so it's more cosy*' (Pupil interview, Visit 2).

Pupils also indicated that they like the other rewards within the programme. For example, '*It's nice getting a certificate*' (Pupil interview, Visit 1), and one pupil stated that she appreciated the motivational quotes: 'W*hen I log on I like to see the inspirational quotes. It makes me feel better*' (Pupil interview, Visit 2). On the other hand, one pupil noted that they were disappointed when they found out that the inspirational quotes were not really from the people shown: '*I want it to be from the proper person [...] I want Taylor Swift to say, "Congratulations"*' (Pupil interview, Visit 2). Another pupil suggested that it would be good if '*there were more goals to kind of get*', for example, working towards an '*exclusive avatar*' (Pupil interview, Visit 2) or having more feedback built-in:

> *...maybe being a bit more, like, encouraging towards reading, telling you you're doing a really good job, and stuff like that [...] And maybe having a video every so often that tells you advice on what could help you improve [...] you only really get that if you get a red.* (Pupil interview, Visit 2)

This pupil indicated that the motivating nature of the rewards diminished over time, hence the suggestion for a broader range of rewards:

> *I kind of do it so much now that it kind of feels a bit normal, and I don't really feel like I'm achieving much [...], it kind of just feels like it's the same thing, over and over.* (Pupil interview, Visit 2)

One pupil, who had reached a very high level on the programme, noted that it is harder to get through as many books when you are on the higher levels '*because they're quite long', which they found 'a bit annoying*', but they also acknowledged that it was *'easier to get more words as you go up levels*' so you at least gained a sense of motivation from seeing your word count going up substantially (Pupil interview, Visit 1).

<u>Building confidence</u>

Three pupils across two schools suggested that an important affective aspect of Reading Plus is that it makes you '*feel more confident in reading*' (Pupil interview, Visit 2). It was suggested by one pupil that part of this confidence-building comes from

that fact that '*when you get something wrong, they let you have another try and another try*' (Pupil interview, Visit 1). Another pupil suggested that Reading Plus builds confidence because of the visible indicators of progress:

> *It makes you think that you've improved, which you have, and then it makes you feel like you're stronger at reading, which you are. So, then you feel like you're better, which you are.* (Pupil interview, Visit 2)

Several pupils noted the progress trackers as a key advantage of Reading Plus, as they enjoy being given concrete markers of their attainment. For example, one pupil stated: '*I like seeing how many words I've read [...] I've already got 287,000'* (Pupil interview, Visit 1), while another explained that they like '*levelling up. Because every time you level up you've read more stories and you're getting better and better*' (Pupil interview, Visit 2).

<u>Comparisons with other teaching approaches</u>

Pupils across five of the schools spoke in detail about how they felt about Reading Plus in comparison to the way that they learned to read in Year 4. Across the schools the overall consensus was that they preferred Reading Plus to usual practice, with a couple of exceptions (noted below).

Pupils in one school, who described their previous experiences of learning to read as whole-class reading, indicated that they find Reading Plus more enjoyable because it allows them to choose their own texts, they do not have to write down the answers to questions, and you are '*able to see your progress more*' (Pupil interview, Visit 1). They also noted that they perceive Reading Plus to more inclusive than whole-class reading, where they '*had to read the same text [...] and all read it at the same time*' (Pupil interview, Visit 1). In particular they noted that faster readers might feel held back by this approach —'*You just want to read and read non-stop*'—while '*If you're a slower reader, it might be a bit fast for you*' (Pupil interview, Visit 1). They also indicated some other downsides to this previous mode of whole-class reading instruction: that they find it boring when they have to wait for different people to take it in turns reading different parts of a text; that sometimes you ca not hear what is being read if fellow pupils '*speak really quietly*', and that this can then hinder reading comprehension (Pupil interview, Visit 1). In contrast, they suggested that:

> *Reading Plus will be better for everyone, because it's your personal thing. It's kind of built around and it shapes how you read, how you need the speed, how you need books to be* (Pupil interview, Visit 1)

They also emphasised that '*you need to read on your own to improve*' (Pupil interview, Visit 2), as a key reason why they preferred Reading Plus to whole-class reading.

In School 4, again, there was a consensus that pupils preferred Reading Plus to usual practice overall—which in their school was characterised by guided reading. Pupils in School 4 also noted the personalised nature of Reading Plus as a key reason for their preference, suggesting that with Reading Plus, '*You don't get rushed*' (Pupil interview, Visit 1). In contrast, pupils reported that with guided reading, the teacher '*tells you when to move on, you can't go at your own pace, and then sometimes you have limited time to answer the questions and it gets a bit stressful*' (Pupil interview, Visit 2). They also noted that they enjoy the independence that comes with Reading Plus, which was absent before:

> *...we didn't have any independence, now on Reading Plus we have our own stuff, we can read by ourselves. We can have a little talk, if we need to, but yeah, it's really independent.* (Pupil interview, Visit 2)

They also reported feeling frustrated previously during guided reading when there was a mismatch in pace between themselves and their partner:

> *...we had to, share a book with our partner, so we'd be reading-, if we were finally allowed to read at our own pace, but she'd still be reading [the pupil's partner], and then I'd forget what I'd read, and we'd have to turn the page.* (Pupil interview, Visit 2)

Pupils in School 4 also mentioned that they like how you do not need to write down questions and answers in Reading Plus:

> *When we used to write questions out, you'd get to the point where you were writing so much it's taking ages, and your hand starts to hurt. So, I prefer using a laptop* (Pupil interview, Visit 1)

And they noted that they like the shorter sessions in comparison with guided reading: '*it took ages. And then Reading Plus, we can get that done really quickly*' (Pupil interview, Visit 1). Finally, pupils in School 4 noted that Reading Plus has the benefit that you can choose your own texts, which means you never have to read the same one twice:

> *...the stories on Reading Plus, you don't really get anywhere else, because they're, kind of, like...I haven't heard of any of the stories I've been reading anywhere else other than Reading Plus.* (Pupil interview, Visit 2)

Pupils in School 6 also agreed that they preferred Reading Plus to their previous provision overall, which they described as involving reading a book as a class, answering questions, and sometimes learning vocabulary. One pupil noted that in this previous model of teaching:

> *...sometimes you can just lose track of where you are in the book and forget the answers and then you'll have to flick back to find the page and flick back and read it again and then write it back down.* (Pupil interview, Visit 1)

With Reading Plus pupils noted that they like being able to choose what they read (e.g. '*you just change it whenever you want*' [Pupil interview, Visit 1]) and valued having the Reread function:

> *[I prefer] Reading Plus because if you forget the words for the answers, you can just do your reread, so then you can try and remember them by reading it.* (Pupil interview, Visit 1)

One pupil also highlighted liking its predictable format:

> *Because on every single book, you get the exact same amount of questions. But then when we used to do it in Year 4, one day you used to get three and then the next day you used to get seven*. (Pupil interview, Visit 1)

In School 7, two pupils were clear that they preferred Reading Plus to usual practice, which involved whole-class teaching of reading. One described their preference as relating to the rewards '*which makes it more fun'* (Pupil interview, Visit 2) and the fact that even if you do not have any books at home, with Reading Plus *'you can just go to it*' (Pupil interview, Visit 1). Another pupil indicated that they '*preferred Reading Plus because it gives you vocabulary, and it gives you the definition if you don't know what the word means*' (Pupil interview, Visit 2). Two pupils in School 7 were unsure with one indicating that their preference '*depends on the reading lesson*' (Pupil interview, Visit 1).

Association between dose and response, and trends over time in reading proficiency

The next section addresses IPE RQ7 and IPE RQ8 using data from the Reading Plus platform.

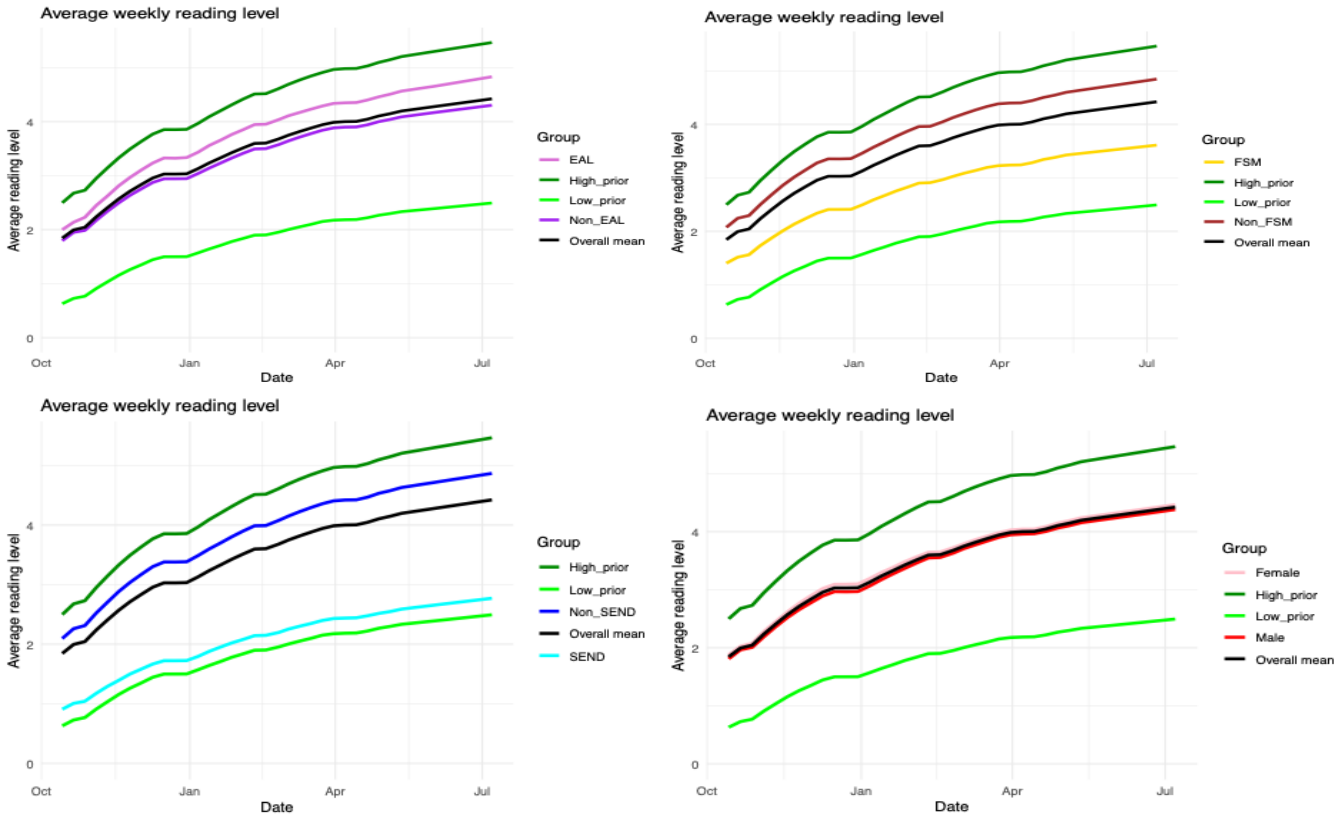
To address these questions, a mixed-effects multiple linear regression model was estimated. New PiRA Year 5 Summer Term Test score was used as a dependent variable and the number of texts read by each pupil as an independent variable. Age, gender, FSM status, EAL status, SEND status, and prior attainment were incorporated as covariates to control for other factors related to the number of text likely to be read. As shown in Table 18, the number of texts read was positively associated with reading attainment (β=0.008, 95% CI: 0.002; 0.014). This estimate indicates that, on average, pupils who read more texts tended to have slightly higher New PiRA Year 5 Summer Term Test score. For example, an increase of 100 texts read was associated with approximately a one-point higher PiRA score.

Table 18: Relationship between the number of texts read and New PiRA Year 5 Summer Term Test score

Parameter	Estimate
Number of texts (β)	0.008
P-value	0.010
95% CI	(0.002; 0.014)
Sample sizes	

Parameter	Estimate
Schools	58
Pupils	2,043
Variances (95% CIs)	
Schools	7.56 (4.80; 11.91)
Class	0.59 (0.10; 3.59)
Pupils	31.50 (29.58; 33.54)
Log likelihood	-6495.37

Figure 24: The average reading level by week over time for EAL, FSM, and SEND groups, by gender



The average reading level as measured through the Reading Plus platform by week over time was plotted for FSM, EAL, SEND groups, and by gender (Figure 24). The plots for each of these groups are compared with the average weekly trend and trends of pupils with high and low prior attainment in each chart. Visual inspection of the trends suggests that pupils with higher prior attainment may have experienced faster improvement in reading levels compared to those with lower prior attainment. Furthermore, while non-EAL pupils' reading levels were close to the overall mean, pupils identified as EAL tend to be slightly above the overall mean. Reading trends for SEND pupils closely mirrored those of the low prior attainment group. This is likely to reflect, at least in part, the overlap between these groups within the sample, as 44% of pupils in the low prior attainment group were identified as having SEND. This suggests that the observed pattern for SEND pupils may be driven to some extent by their distribution within lower prior attainment levels, rather than SEND status alone. FSM pupils demonstrated reading levels below the overall average, yet notably higher than those observed in the low prior attainment and SEND groups. Finally, reading trajectories of both male and female pupils aligned closely with the overall mean. However, these patterns are descriptive and would require statistical analysis to be confirmed.

Cost

We followed the EEF costing guidance (EEF, 2023) to estimate the cost of implementing and delivering the Reading Plus intervention in schools. Costs were calculated on an academic year basis. The mean class size, based on evaluation analysis, was 27 pupils. Costs are presented per class and per pupil. For schools with multiple classes or forms, the cost per class needs to be multiplied by the number of classes/forms.

Pre-requisites

Since Reading Plus is a digital platform, schools were required to provide each pupil with a computing device, such as a laptop, PC, or tablet. The majority (85%, 34 out of 40) of schools responding to the headteacher survey reported that they already had these devices available. However, some schools (15%, 6 out of 40) indicated that they needed to purchase additional equipment specifically for the trial. Four schools acquired additional computing equipment, while one school purchased additional headphones.

Time

Training

The training accounted for most of the additional time required from schools during the trial. Based on headteacher survey responses, an average of two staff members attended the training sessions, each spending approximately four hours. These sessions were most frequently attended by Year 5 teachers, sometimes accompanied by the headteacher, deputy headteacher, and/or the school's reading lead. Around 15 out of 40 schools (38%), that responded to the survey, reported needing a cover teacher for the duration of the training.

Preparation

Preparation time for Reading Plus sessions was generally viewed as comparable to the time teachers typically spend planning regular reading lessons. On average, two staff members dedicated about 1.4 hours per week to preparation. Among the 26 schools that responded to the teacher survey, only two reported that preparation took on average 45 minutes longer than usual. On the other hand, four schools indicated that preparing for Reading Plus required less time than their standard reading lesson planning.

Delivery

Each intervention school was asked to deliver a minimum of 90 minutes of Reading Plus sessions a week (either two 45-minute sessions or three 30-minute sessions). On average, delivering Reading Plus sessions required 1.9 hours per week and two staff members. Of the 26 schools that responded to the teachers' survey, 13 (50%) reported that delivery time was the same as their usual guided reading sessions. Two schools (8%) indicated that the programme took about 45 minutes longer, while another two schools (8%) noted that Reading Plus reduced the time spent on guided reading.

Financial costs

Staff training and associated costs

Staff involved in implementing and delivering Reading Plus sessions completed two online training sessions, each lasting approximately one hour. Outside the trial, this training and ongoing support is included in the Reading Plus licence fee and does not incur additional charges. However, schools may face extra costs for staff cover. In the headteacher survey, 15 out of 40 responding schools reported needing a cover teacher during training, with an average estimated cost of £216 per school.

Licence fee

During the trial, the majority of the discounted licence fee was covered by the EEF, with Daisy Education contributing further £500 per school. The intervention schools paid £500 plus VAT towards the cost of participation.

Reading Plus is available on a one to three-year licence subscription, with prices set according to the length of the subscription. There is no standard discount, percentage, rule or formula used to calculate a three-year subscription from the one-year price.

At the time of the trial, the one-year Reading Plus licence fee was:

- £4,770 plus VAT for up to 52 pupils.
- £6,360 plus VAT for all Key Stage 2 year groups for an average size primary school.

The equivalent three-year Reading Plus licence fee was:

- £6,346 plus VAT for up to 52 pupils.
- £8,925 plus VAT for all Key Stage 2 year groups for an average size primary school.

The licence for a single year group covers up to 52 pupils, which may not be sufficient for some schools with more than one Year 5 class, potentially requiring additional licences or higher-tier pricing.

For cost analysis, we used the Key Stage 2 licence fee of £8,925 plus VAT (£10,710). The cost per pupil was calculated by dividing the Key Stage 2 licence fee by four (the number of Key Stage 2 year groups) and then by 27 pupils (Table 19).

Table 19: Cost of delivering Reading Plus

Item	Type of cost	Cost	Total cost over three years	Total cost per pupil per year over three years
Personnel for training (teacher cover)	Start-up cost per school	£216	£216	£8
Annual licence fee for Key Stage 2 (including VAT)	Running cost per school	£7,632	£10,710 (three-year licence fee)	£33.06
Total		£7,848	£10,926	(£10,710/3/4/27) + (£216/27) = £41.06

Overall cost

The overall cost of implementing and delivering Reading Plus is primarily driven by two key components: software licensing; and teacher cover during training sessions, as shown in Table 20. Most of the expenditure is attributed to the Reading Plus software licence, which represents approximately 90% of the total first year cost per pupil (£33.06 out of £41.06). The remaining cost relates to providing teacher cover for the duration of the training sessions, accounting for £8 out of £41.06 per pupil in the first year.

It should be noted that these estimates assume that schools already have sufficient access to appropriate technology (e.g. devices for pupils to use the platform). In practice, for schools with limited existing infrastructure, additional costs associated with purchasing or upgrading devices could be substantial and would increase the overall cost per pupil. This is particularly relevant when considering scale-up, as variation in schools' existing IT provision may lead to higher implementation costs in some contexts.

Table 20: Cumulative costs of Reading Plus per pupil (assuming delivery over three years)

Programme	Year one	Year two	Year three
Reading Plus	**£41.06**	**£33.06**	**£33.06**

Conclusion

Table 21: Key conclusions

Key conclusions	
1.	Pupils in Reading Plus schools made no additional months' progress in reading, on average, compared to pupils in other schools taught under business as usual conditions. This result has a high security rating.
2.	Among pupils eligible for FSM, those in Reading Plus schools made one month's additional progress in reading on average, compared to pupils eligible for FSM in other schools. These results may have lower security than the overall findings because of the smaller number of pupils and are similar to those for non-FSM pupils.
3.	Pupils in Reading Plus schools made no additional months' progress in **reading comprehension**, one month's additional progress in **reading fluency**, and two month's additional progress in **vocabulary**, on average, compared to pupils in other schools taught under business as usual conditions.
4.	Evidence from the IPE suggests that overall, both teachers and pupils thought that Reading Plus had led to improvements in reading, comprehension, fluency, and vocabulary. Of these areas of reading, teachers felt that the intervention was particularly supportive of fluency.
5.	Reading Plus was implemented with fidelity and accompanied by high-quality training and support. Where delivery varied from the core intervention model this was due to timetable pressures, staff shortages, and other competing school activities. In some schools the intervention was adapted for lower-attaining pupils.

Impact evaluation and IPE integration

This study employed a two-arm cluster RCT in which entire schools were allocated to either the intervention or control group. Of the 124 schools recruited and randomised (62 per arm), 121 remained at analysis—60 in the intervention group and 61 in the control group. At randomisation, the trial included 5,403 pupils (2,747 intervention; 2,656 control). The analysed sample comprised 4,440 pupils, representing 82% of the original cohort. In the intervention group, 2,167 pupils were retained (79% of those randomised), while 2,273 pupils were retained in the control group (86% of those randomised). Attrition of 963 pupils between randomisation and analysis resulted from school withdrawal, pupil withdrawal, or pupil absence during endline testing.

Sample loss can introduce bias and reduce the precision of statistical estimates. In this trial, retention rates differed between the two arms; however, the groups were well balanced at randomisation, and this overall balance was largely maintained at analysis. Although missingness at endline was associated with pupils' Key Stage 1 Reading Teacher Assessment, SEND status, and FSM status, these patterns were accounted for in the missing data analysis. Importantly, the results of that analysis did not differ meaningfully from the primary findings and did not alter our conclusions. Overall, the results can be interpreted with a reasonable degree of confidence.

This trial was an efficacy study, and the sample of schools recruited to the trial a convenience sample, in contrast to a situation in which schools were sampled at random to take part in the trial. This means caution should be exercised in drawing conclusions as to the effectiveness of Reading Plus, or otherwise, based on the results of this study alone, for schools and pupils beyond the sample.

Results from the primary outcome analysis indicate that pupils in schools assigned to Reading Plus made no additional progress in reading compared with those in control schools. This finding diverges from prior expectations, given that the trial was powered to detect an effect of 0.18—an estimate considered plausible based on earlier evidence. Moreover, the level of statistical uncertainty means we cannot rule out the possibility that the true impact of Reading Plus on reading attainment was zero.

Results from the analyses of secondary outcomes paints a slightly less pessimistic picture, though it is important to remember that these analyses are exploratory and should not be used to draw conclusions as to the efficacy or otherwise of Reading Plus. We obtained measures of reading comprehension, fluency, and vocabulary from the KTEA-3 instrument administered to a subsample of ten pupils in each school. Results from analyses of these outcomes shows that pupils in Reading Plus schools saw no additional progress in reading comprehension compared to pupils in control schools. Pupils in Reading Plus schools saw one month's additional progress in reading fluency and two months' progress in their

vocabulary compared to pupils in control schools. Both these results are accompanied, again, by a fair degree of uncertainty. The result for vocabulary is less uncertain, however, being accompanied by a lower p-value, and a CI with a lower limit close to zero. Secondary analysis also looked at pupils' self-efficacy in reading and their motivation to read. The evidence was not consistent with Reading Plus having a positive effect on either of these outcomes.

Turning to subgroups, results show that the effects of Reading Plus for FSM and non-FSM pupils were very similar and thus similar to the overall picture from the primary analysis. For SEND pupils, however, there is a suggestion that they may have benefited more from Reading Plus than their non-SEND peers, but due to the high degree of uncertainty in our estimates we cannot conclude with any confidence that this difference represents a real improvement for them.

Findings from the IPE present a contrasting picture to the impact evaluation. Teachers generally perceived improvements in pupils' comprehension, fluency, vocabulary, and overall reading development. Many also noted that most pupils initially engaged with Reading Plus enthusiastically, although this engagement sometimes diminished over time. Teachers attributed perceived improvements to the personalised and adaptive nature of the programme, which they felt supported pupils across a wide range of reading abilities, including reluctant readers. However, some teachers reported that pupils with SEND found the programme more challenging. Pupils participating in focus groups generally expressed a preference for Reading Plus and online learning over previous reading activities and real books and felt that the gamified elements of Reading Plus were motivational. Pupils believed that the programme had helped improve their vocabulary, fluency, comprehension, and reading more broadly.

The IPE suggests that Reading Plus was implemented with high fidelity and that teachers overwhelmingly kept to the weekly 90-minute structure. Teachers welcomed the support they received from Daisy Education, which they considered to be of high quality and supportive. The very minor changes to programme implementation reported, were due to factors such as lack of curriculum space and reduced teacher capacity due to illness. Overall, in terms of fidelity to the design and ethos of the programme, this trial represented a good test of Reading Plus.

At first glance these findings may appear to contradict those of the impact evaluation, where we find no support for the perceived gains in reading attainment and comprehension suggested by both teachers and pupils, and only very weak evidence in support of the perceived improvements in vocabulary. Furthermore, the tentative suggestion that Reading Plus may have offered some benefit to pupils with SEND in the impact evaluation, contrasts with the views of some teachers. Three points are worth mentioning here. First, Reading Plus was implemented in a context in which schools were continually striving to improve the teaching of reading. This means that control schools represented an active contrast against which Reading Plus was compared. Broadly, Reading Plus appears to perform no worse than the reading strategies seen in control schools. Second, it is important to recognise that the judgements teachers and pupils make are with reference to improvements in *their* reading outcomes, they cannot provide an assessment of the effectiveness of Reading Plus relative to business as usual conditions. General improvements in reading over a school year are expected, the difficulty comes in knowing how far these gains exceed those that would have accrued in the absence of Reading Plus. Teachers and pupils can observe genuine improvements (perceived gains may also be wrong or due a form of Hawthorne Effect), but genuine gains do not necessarily translate into gains greater than those seen in an active control group. Finally, it is also worth remembering that the data collected through the IPE came from samples collected purposively for in-depth exploration rather than generalisation to the sample, and from surveys susceptible to non-response.

Evidence to support the logic model

Evidence from both the impact evaluation and the IPE raises several questions about the programme's logic model. These questions relate chiefly to intended outcomes relative to those in the control group, while only minor issues were identified regarding the programme's inputs, outputs, and activities.

Here we consider each of the main elements of the logic model and draw together the relevant evidence, assessing whether findings are generally supportive of the Reading Plus programme theory, or not.

Programme inputs

Programme inputs took the form of teacher training, online support, access to the programme itself, pupil training, and the initial pupil assessment that took place within the Reading Plus platform. Evidence from the IPE suggests that:

- Support from Daisy Education was effective and of high quality and teachers were generally positive about initial and ongoing training and help received.

- The introductory webinar and initial training sessions were delivered in a professional and knowledgeable manner and gave teachers a clear understanding of the purpose and key features of Reading Plus.

- Uptake of optional online training was low, though those who accessed it reported benefits such as improved understanding of reporting and pupil progress.

- Around a third of teachers made use of the Resources Hub or additional initiatives such as competitions and awards.

- Experiences of introducing pupils to Reading Plus were mixed. Many pupils adapted quickly and found the programme intuitive, while others required time to adjust, particularly to the Guided Window.

- Schools had mixed experiences of the initial pupil assessment. About half of teachers said that their pupils had been able to undertake the assessment without problems. However, 17 teachers expressed concerns about the initial assessment not reflecting their pupils' ability.

- Generally, pupils were able to access the platform without difficulty and were technically competent, though not all pupils could do so from home. Some respondents suggested that access to the platform could be improved if a phone application version of the programme were available.

Programme outputs

Programme outputs included teachers' oversight of pupils' use of Reading Plus, access to assessment data, and to additional support where required. Pupils were expected to use the platform for 90 minutes per week over either two or three sessions. Evidence from the IPE reveals:

- Although Reading Plus is largely self-guided, teachers' roles remained important in supporting pupils, monitoring progress, motivating learners, and managing lessons effectively. Teacher confidence, buy-in, and knowledge of reading and technology were key factors.

- Most teachers used the reporting tools available in Reading Plus and teachers told us that reporting tools had been helpful for monitoring pupil progress and engagement, motivating pupils, and for sharing progress with parents.

- Other uses to which teachers put the data included monitoring pupils during lessons, as an ongoing indicator of pupils' progress within different reading domains, identification of additional learning that may be needed, grouping pupils based on learning need, and to inform lesson planning.

- The evidence overall suggests most schools used Reading Plus as intended, sticking to the prescribed 90 minutes per week, spread over two or three sessions.

- Where full delivery was not achieved, this was due to timetable pressures, staffing issues, pupil engagement challenges, or competing school activities. Some schools reduced Reading Plus use later in the year in favour of taught lessons, and lower-attaining pupils sometimes used alternative provision.

Reading Plus activities

Teachers' use of the platform was intended to include a diagnostic element leading to additional teacher-initiated activities including offline reading activities and online visual skills training. Texts read within the platform were to be aligned to pupils' interests as well as reading level. The Guided Window was designed to play a central role, particularly supporting fluency. After completing reading tasks, pupils had to answer questions relating to the text they had just read. More broadly, pupils were expected to undertake five reading activities per week plus one vocabulary activity.
Results from the IPE show that:

- Around a third of teachers who responded to the endline survey reported using additional teaching tools available through Reading Plus, such as worksheets and lesson plans, though they tended to be used infrequently. Resources such as these were generally viewed positively by teachers. Additional resources were used for specific targeted interventions with small groups of pupils.

- Just under a half of teachers who responded to the survey reported using the visual skills component of the intervention. This was often targeted at struggling readers, and pupils with SEND. Pupils' responses to the visual skills element of the programme were mixed.

- The inclusion of mandatory questions after each text provided accountability, ensuring that pupils were reading for meaning rather than simply rushing through pages. Some pupils suggested that at times, questions could be confusing, and while pupils found the combos feature motivating, they also expressed frustration because of what they perceived to be high thresholds for success.

- In general, the ability of pupils to choose texts was praised by teachers and teaching assistants and was seen as a major motivating factor. Pupils also responded positively to this aspect of the programme. Evidence from case study schools suggested, however, that the ability of pupils to choose texts did not always work well. It tended to limit exposure to a wider range of texts. Pupils also spent a lot of time choosing texts, and some found the choice overwhelming.

- There was some evidence of pupils taking time to get used to the Guided Window. In case study schools, some teachers saw the Guided Window as a barrier, particularly for higher performing readers and some pupils preferred to read without it. In general, teachers' views on the Guided Window were mixed with some saying it had a positive impact on reading speed, fluency, and engagement and that pupils liked it, while others suggested otherwise. In focus groups on the other hand, pupils generally talked positively about this feature of Reading Plus and credited it with improving their reading speed and helping them pay attention.

- Five case study schools told us about the number of reading and vocabulary lessons that their pupils completed each week. In all of these schools, most pupils typically completed the expected five reading lessons and one vocabulary lesson.

Intermediate outcomes

Reading Plus was theorised to improve silent reading fluency, comprehension, and vocabulary among pupils in intervention schools compared to pupils in control schools. The ability of pupils to choose texts that aligned with their interests and abilities was anticipated to increase motivation and contribute to reading self-efficacy. The Guided Window was expected to be instrumental in driving gains in fluency, while the requirement for pupils to answer questions in relation to the texts they read, to improve comprehension. Specific vocabulary activities targeted gains in understanding the meanings of words.

- Evidence from the IPE reveals that both teachers and pupils perceived improvements in general reading, fluency, comprehension, and vocabulary. Various aspects of the programme were credited with these gains. Motivation and confidence were also thought to have improved.

- Results from the impact evaluation revealed that gains across intermediate outcomes were at best modest and associated with an appreciable degree of uncertainty.

- Pupils made no progress in comprehension relative to their control group counterparts; one month' s gain compared to control group pupils in fluency and two months' gain in vocabulary. Effect sizes were 0.04, 0.07, and 0.11, respectively and classified as small- or medium-sized (Kraft, 2020). All estimates had 95% CIs containing zero, and quite large p-values, apart from the result for vocabulary, where p=0.09.

- There was no evidence that Reading Plus led to improvements in reading self-efficacy and motivation to read relative to the control group.

- Results suggest weak evidence of an effect of Reading Plus on pupils' vocabulary relative to the control group, but this effect comes with a degree of uncertainty that makes it difficult to be definitive.

Distal or primary outcome

The Reading Plus logic model indicates that reading attainment is the primary or distal outcome that Reading Plus ultimately targets. Improvements in reading motivation, self-efficacy, silent fluency, reading comprehension, and vocabulary were expected to act in combination to raise reading attainment among pupils in intervention schools relative to pupils in control schools.

- As was the case with intermediate or secondary outcomes, both pupils and teachers claimed that reading attainment had improved and related these improvements to Reading Plus.

- The impact evaluation found that intervention group pupils made no gains in reading relative to their control group counterparts. The effect size on the primary outcome was 0.03, which was associated with a wide 95% CI (-0.10 to 0.15).

Interpretation

Evidence from the IPE, suggests that both teachers and pupils perceived Reading Plus to have led to improvements in attainment as well is in other aspects of reading. While there is some suggestion from the impact evaluation that the intervention may have led to improvements in vocabulary and possibly fluency, the perceived gains referred to by pupils and teachers did not translate into effects when compared to the control group. Most importantly, Reading Plus does not appear to have led to improvements in reading attainment, the primary outcome, relative to the control group.

An important question is therefore, how teachers and pupils could have been positive about the improvements they saw, yet this did not lead to gains over those seen in the control group. Results from both the impact and IPE analyses could potentially be biased and therefore misleading. The impact evaluation did encounter some non-trivial dropout from the study sample but what evidence we have suggests that this has not led to meaningful imbalances between the two arms of the trial. Likewise, the surveys of teachers and headteachers, part of the IPE, had only partial coverage and the case studies, while selected to reflect a diverse range of schools, were only small in number, and designed to add richness and depth to the evidence, rather than be fully representative of the sample.

It might be hypothesised that the gains perceived by teachers and pupils, which did not translate into impacts, when those gains were compared to the control group, could be linked in some way to problems in implementation. While there were, no doubt, some teething issues, the evidence is that Reading Plus was successfully delivered with fidelity. The quality and nature of the support provided by Daisy Education was also high and valued by teachers.

This discussion leads us to conclude that overall Reading Plus did not achieve meaningful improvements in reading relative to the control group. This could be because schools in general were active in developing their teaching of reading during the study period. Control schools reported notable changes to practice during the intervention period. Over half of the headteachers (n=22, 52%) reported that the teaching of reading had been a focus for development during the trial period. More than a third (n=16, 38%) said that changes had been made to the way that reading was taught, primarily through the introduction of new programmes. Almost half of the control schoolteachers (n=35, 45%) also reported that they had changed their practice in relation to teaching reading. Control group activity of this nature can weaken the experimental contrast being tested, particularly if the intervention acts as a partial substitute, rather than a complement to existing teaching. In such a context, it is perhaps not surprising that Reading Plus did not lead to gains for pupils over those they would have achieved with business as usual teaching. Having said this, caution should be exercised in interpreting results from the IPE surveys due to relatively low response rates.

In terms of the gains described by pupils and teachers, and these not translating into efficacy, it is likely that any improvements seen by teachers and experienced by pupils would have happened in the absence of Reading Plus. It is difficult for teachers to know how far improvements in pupils reading would lead to gains relative to a control group. In a sense, this was not the question they were being asked anyway. The impact evaluation through having a randomised control group can provide an assessment of how much progress pupils would have made had they instead been exposed to business as usual conditions. Therefore, the results of the impact evaluation are a more reliable guide to the ultimate effectiveness of Reading Plus in terms of a comparison to usual teaching practice.
The main finding of the impact evaluation (that Reading Plus did not lead to additional progress in comparison with the control group) is at odds with previous evaluations of Reading Plus that yielded, on the face of it, promising findings. This includes a small UK efficacy study conducted with Year 6 pupils (Reading Solutions, 2022), which reported a 50% increase in reading attainment in the intervention group (when comparing pre- and post-assessment scores) in comparison with only a 29% increase in reading in the control group. However, there were several methodological limitations to this study, including its small sample size (n=470 pupils) and lack of randomisation. A randomised efficacy study evaluating the original US version of Reading Plus reported significant gains in reading efficiency in Grade 4 and reading achievement in Grade 5 (Spichtig *et al.,* 2019). Again, however, the sample size was relatively low (n=426 across both grades), and we might not expect US findings to be automatically transferable to the UK. There are likely to be important differences between usual practice in the US and the UK and some minor adaptations were made to Reading Plus to make it suitable for the UK. The current study, therefore, provides the most robust study to date of Reading Plus in the UK context, and suggests that Reading

Plus does not lead to significant gains in reading relative to the control group. As emphasised above, however, the null result does not necessarily conflict with teachers' and pupils' perceptions of Reading Plus being a valuable approach to teaching reading, even though its impacts do not exceed those of usual practice (which constitutes a very active control). As indicated in Figure 24, intervention pupils appear to have made steady progress during the trial period according to the reading assessment measure collected within the programme itself, although further research is needed to evaluate the validity of this measure in relation to standardised measures of reading attainment.

Although estimated with a relatively wide CI that contained zero, the suggestion that pupils made two months' additional progress in vocabulary and that pupils described the vocabulary activities as being useful, potentially aligns with studies suggesting that explicit instruction in vocabulary, rather than relying on pupils passively acquiring the meanings of words, is important for improving vocabulary knowledge (e.g. McKeown and Beck, 2014; Bilton and Duff, 2021). However, some pupils suggested that they would have liked opportunities for teachers to explain some of the words, aligning with research suggesting pupils have the opportunity to interact with words in multiple ways and contexts for their new knowledge to be fully embedded (McKeown and Beck, 2014)

We estimate that pupils made one month's additional progress in reading fluency, and despite this estimate being associated with an appreciable degree of uncertainty (and an associated confidence including zero), such an estimate is consistent with established research suggesting that regular opportunities to read independently (see Allington, 2014 for a review) and the provision of texts at an appropriate instructional level (e.g. Kuhn *et al.,* 2018), are important for developing fluency. The findings are also consistent with preliminary research suggesting that having a moving Guided Window leads to more efficient reading (Rasinski *et al.,* 2011; Reutzel *et al.,* 2012). However, it is not possible from the data to evaluate which of these aspects might have supported pupils' reading fluency when using Reading Plus, and it is emphasised that only a relatively weak effect of Reading Plus on fluency was found with a high degree of uncertainty.

There was a consensus from teachers and pupils that both the regular opportunities for pupils to read independently and the provision of personalised text levels were beneficial aspects of the programme. However, there were mixed views about the usefulness of the Guided Window. While some teachers and pupils suggested that it helps pupils to follow along and read at an appropriate pace (cf. Spichtig, 2012), others identified issues with using the Guided Window in practice, for example, some pupils expressed frustration at not being able to go backwards to check a word, some teachers reported concerns about pupils rushing through texts, and both teachers and pupils noted that the Guided Window moves too quickly for pupils to read aloud to a teacher (for formative assessment purposes).

The null finding in relation to progress in reading comprehension suggests that intervention pupils did not make any more progress in reading comprehension than controls pupils. However, there was a general consensus across the pupils in the case study schools that the programme supported reading comprehension. Clearly pupils are not aware of the progress they may have made had they not used Reading Plus, but they did suggest that having the questions to complete after each text held them to account and supported them to focus on the meaning while reading rather than rushing through. One pupil also suggested that Reading Plus supported them to create a mental model of the text. Previous research has suggested that teaching approaches which try to motivate pupils to focus on the meaning of a text (in this case through the use of 'combo' rewards and the self-selection of texts) are effective for reading comprehension (e.g. van Rijk *et al.,* 2017). It is also well established that skilled reading comprehension requires the reader to create a mental model of what is happening in the text as they go along (e.g. Garnham and Oakhill, 1996; Glenberg and Langston, 1992; Schnotz, 2002). Teachers were also positive overall about how they perceived the programme to be supporting pupils' reading comprehension skills, although notably one case study decided to stop using the programme mid-intervention over concerns that the gains in reading comprehension suggested by the assessment data collected within the platform were not reflected in standardised assessments, which they used in school as part of their summative assessment processes. As noted above, this study motivates further research exploring the association between the assessment data collected in the programme and standardised measures of reading comprehension.

In relation to the affective aspects of using Reading Plus, while effects were small and imprecisely estimated for both reading motivation and reading self-efficacy, there were many accounts from both pupils and teachers about what they perceived to be benefits in this area. Pupils described the gamification and broad selection of texts as motivating and noted that both the gradual increase in difficulty of the texts and the visibility of their achievements (number of words read, scores on the questions, etc.) helped them to feel more confident about their reading. This aligns with previous research which has

highlighted the importance of readers having autonomy in their reading (Guthrie and Klauda, 2014) and being provided with a broad selection of texts (Cremin *et al.,* 2022). However, some pupils and teachers suggested that once pupils have been using the programme for a while and they have got used to it, motivation faded as it begins to feel repetitive. It is possible that the repetitive nature of the programme might have contributed to the small effect sizes seen. Alternatively, it may be that pupils' feelings about Reading Plus may not have transferred to their feelings about reading in general, or at least not to the extent where any gains exceeded those seen among control group pupils. The small and imprecise effects may also have been due, at least in part, to limitations of the instruments used to measure feelings about reading, given that the affective dimensions of reading are notoriously difficult to measure, especially in pupils (e.g. McTigue *et al.,* 2019).

A key benefit of Reading Plus perceived by both teachers and pupils is that it supports individualised instruction, while also decreasing teacher workload. This is significant given that a key barrier to implementing individualised instruction, identified in the EEF's Teaching and Learning Toolkit is 'the increased requirements on the teacher to organise and monitor individual activities' (EEF, 2021). In the current context, where there are urgent concerns about the impact of excessive workload on teacher well-being and retention (e.g. Ainsworth and Oldfield, 2019; Oldfield and Ainsworth, 2022). Tailored instruction which limits workload is highly desirable—although clearly, trade-offs in terms of increasing pupil attainment versus decreasing teacher workload, and the costs, need to be weighed carefully. From the pupils' perspective, case study pupils were very positive about the level of personalisation of the programme, which many of them contrasted with prior experiences of reading in school. They articulated the importance of being able to read texts tailored to their attainment level and at their own pace. The positive perceptions of the personalised dimension of this programme aligns with other research which has highlighted the potential value of EdTech programmes to provide a tailored learning experience while also minimising teacher workload (Cooper Gibson Research, 2022; Cooper Gibson Research, 2021; Lewin *et al.,* 2019).

In summary, this study suggests that although Reading Plus did not outperform usual practice, there are many promising features of Reading Plus as perceived by teachers and pupils. As with any intervention, there were also some drawbacks perceived by teachers and pupils. These findings might be useful for developers to perhaps consider whether adaptations might be made to the design of the programme to minimise the perceived drawbacks so that the potential benefits might be maximised.

Limitations and lessons learned

As one might expect with RCTs conducted in field settings, this trial faced challenges, and as such its findings are subject to qualification and caveat. The low level of school attrition resulted in minimal changes in the balance between the two trial arms in school-level characteristics in the 'as analysed' as compared to the 'as randomised' samples. Among pupils randomised, 82% were retained for analysis, 79% of intervention group pupils and 86% of control group pupils. Despite sample retention being lower in the intervention group, based on measured variables, it appears that the overall balance between intervention and control groups was largely maintained at analysis. Nonetheless, some bias in our analysis resulting from unmeasured factors cannot be ruled out.

The study was designed as an efficacy trial, and therefore the focus was a test of the intervention and its underlying theory of change under more tightly specified conditions. Therefore, there remain questions around how far results can be generalised. As with many trials, the sample of schools recruited to this study was not selected at random from the population of primary schools; effectively schools selected themselves into the study and moreover had to be able to provide one-on-one access to technology for all participating pupils. However, the schools in our sample are similar to the population of all primary schools in term of prior levels of Key Stage 2 reading. Schools in this trial had slightly higher proportions of pupils qualifying for FSM than all schools.

As highlighted in previous sections of this report, 'business as usual' in control schools around the teaching of reading was particularly active with many schools continuing to investigate ways of improving the teaching of reading. This is perhaps unsurprising given that schools that wanted to participate in the trial were schools where the teaching of reading was high on their agenda, it being a high-stakes subject. In the absence of being allocated to the intervention arm, many control schools made some notable changes to their provision during the trial, which is likely to have weakened the contrast between both arms of the trial. For example, some schools invested in EdTech programmes for supporting the teaching of reading. In some senses then we might be seeing a form of compensating rivalry in control schools (Shadish *et al.,* 2002).

Test administration practices can often lead to questions over the reliability of findings. At endline, New PiRA Year 5 Summer Term Test assessments were intended to be administered online. Four schools experienced technical problems which could not be resolved; these schools were provided with paper versions of the assessment. In addition, some pupils experienced technical problems with New PiRA Year 5 Summer Term Test on an individual basis, and this impacted slightly on pupil attrition. Comparison of data collected via online administration with those collected in the PALS-UK trial suggest that there is a mode effect, with paper-based administration leading to higher scores. This could be due to the online administration timing out exactly after 45 minutes and/or the automatic assessment processes. It would be beneficial to explore this further and to consider mode of administration carefully in future trials.

Next, we discuss the limitations and challenges faced in the IPE. The IPE consisted of baseline and endline surveys of teachers and headteachers. In total (excluding schools which withdrew from the evaluation), the sample at baseline comprised some 209 teachers (102 in the intervention group and 107 in the control group) and 121 headteachers. These numbers dropped slightly at endline as some schools had withdrawn from the intervention but agreed to remain in the trial; we did not administer surveys to these schools in order to minimise the burden. At endline we sent surveys to 206 teachers and to 119 headteachers. Response rates for intervention schools were: 75% (headteacher baseline); 70% (teacher baseline); 69% (headteacher endline); and 57% (teacher endline). Response rates for control schools were: 67% (headteacher baseline); 63% (teacher baseline); 69% (headteacher endline); and 73% (teacher endline). These rates of response are fairly typical, but the level of response and survey response rates differing in the two arms of the trial raises questions as to the representativeness of these data, and thus the reliability of findings. The teacher's baseline survey was kept open later than planned due to low response rates. On reflection, the headteacher and teacher surveys were very lengthy and included numerous open questions which may have been off-putting. Not all data were analysed; on careful review some data were considered not directly relevant, and some data were considered not to add or strengthen the analyses. Survey instruments in current and future trials should be carefully reviewed to ensure that this is avoided or minimised. In addition, as staff workload in schools is a known issue, it may be beneficial to routinely adopt incentivisation approaches in future trials.

The case study data came from in-depth fieldwork conducted in six schools. Schools were selected adopting a stratified random selection process. However, schools that were approached were not obliged to participate in this additional data collection, and only three of the six schools approached initially accepted the invitation. The process was followed again, with two second choice case study schools accepting and one third choice. The stratified random selection process was followed to maximise the possibility of these schools being representative of those in the intervention arm. However, the nature of voluntary participation means that it is not possible to be sure that findings from case studies hold more broadly.

In terms of the implementation of Reading Plus, the evidence suggests it was successfully delivered with high fidelity. Though it could be that teachers that made adaptations did not respond to the survey. Reported adaptations were unsurprising and were in line with guidance on the implementation of Reading Plus.

Future research and publications

The evaluation team intends to publish the results of this trial in a high impact peer reviewed journal. Several questions have been raised in the evaluation that warrant further investigation but that are not necessarily related to the effectiveness of Reading Plus as an intervention. First, there are questions of measurement. The differences in reading attainment recorded in the online version of the New PiRA Year 5 Summer Term Test, when compared to its paper and pencil form, potentially require further investigation. Second, EdTech platforms such as Reading Plus increasingly provide built-in assessment of reading across a range of dimensions. Platform interactions with users are often calibrated to these assessments. This raises questions as to how far such assessments map onto standardised measures of reading which are known to be predicative of pupils' attainment in National Curriculum Tests and national examinations. The data collected in this study will enable these questions to be addressed at least in terms of Reading Plus. The platform data provide high frequency assessments of reading, and these data might be explored further.

References

Ahn, J. (2022) 'Exploring the Negative and Gap-Widening Effects of EdTech on Young Children's Learning Achievement: Evidence from a Longitudinal Dataset of Children in American K–3 Classrooms'. *International Journal of Environmental Research and Public Health,* 19: 9, 5430. https://doi.org/10.3390/ijerph19095430

Ainsworth, S. and Oldfield, J. (2019) 'Quantifying Teacher Resilience: Context Matters'. *Teaching and Teacher Education,* 82, 117–128. https://doi.org/10.1016/j.tate.2019.03.012

Allington, R.L. (2014) 'How Reading Volume Affects Both Reading Fluency and Reading Achievement'. *International Electronic Journal of Elementary Education,* 7: 1, 13–26. www.iejee.com/index.php/IEJEE/article/view/61

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. Psychol Rev, 84. https://doi.org/10.1037/0033-295X.84.2.191

Bilton, C. and Duff, A. (2021) *'Improving Literacy in Key Stage 2. Guidance Report. Second Edition'*. London: Education Endowment Foundation. Available at: **https://d2tic4wvo1iusb.cloudfront.net/production/eef-guidance-reports/literacy-ks2/EEF-Improving-literacy-in-key-stage-2-report-Second-edition.pdf** (accessed 18 09 2026).

Bowers, P.N., Kirby, J.R. and Deacon, S.H. (2010) 'The Effects of Morphological Instruction on Literacy Skills: A Systematic Review of the Literature: A Systematic Review of the Literature'. *Review of Educational Research,* 80: 2, 144–179. https://doi.org/10.3102/0034654309359353

Braun, V. and Clarke, V. (2006) 'Using Thematic Analysis in Psychology'. *Qualitative Research in Psychology,* 3: 2, 77–101. https://doi.org/10.1191/1478088706qp063oa

Braun, V. and Clarke, V. (2012) 'Thematic Analysis'. In: H. Cooper, P.M. Camic, D.L. Long, A.T. Panter, D. Rindskopf and K.J. Sher (Eds.), *'APA Handbook of Research Methods in Psychology, Vol 2: Research Designs: Quantitative, Qualitative, Neuropsychological, and Biological (pp. 57–71)*. American Psychological Association. https://doi.org/10.1037/13620-004

Breadmore, H.L., Vardy, E.J., Cunningham, A.J. and Kwok, R.K.W. (2019) *'Literacy Development: Evidence Review'*. London: Education Endowment Foundation. Available at: **https://educationendowmentfoundation.org.uk/public/files/Literacy_Development_Evidence_review.pdf** (accessed 18 09 2026).

Breaux, K.C. and Lichtenberger, E.O. (2016) *'Essentials of KTEA-3 and WIAT-III Assessment'*. Hoboken, NJ: John Wiley & Sons, Inc.

Carril, A. (2017) 'Dealing With Misfits in Random Treatment Assignment'. *The Stata Journal,* 17: 3, 652–667. https://doi.org/10.1177/1536867X1701700307

Carroll, J. M. and Fox, A.C. (2017) 'Reading Self-Efficacy Predicts Word Reading But Not Comprehension in Both Girls and Boys'. *Frontiers in Psychology,* 7, 1–9. https://doi.org/10.3389/fpsyg.2016.02056

Cooper Gibson Research. (2021) *'Education Technology (EdTech) Survey 2020-21 (Research Report)'*. London: Department for Education.

Cooper Gibson Research. (2022) *'Education Technology: Exploring Digital Maturity in Schools (Research Report)'*. London: Department for Education.

Cremin, T., Hendry, H., Leon, L.R. and Kucirkova, N. (2022) *'Reading Teachers: Nurturing Reading for Pleasure'*. Abingdon-on-Thames: Routledge.

Data Protection Act 2018, c.12. Available at: www.legislation.gov.uk/ukpga/2018/12/contents (accessed 18 09 2026).

Daisy Education. (no date) *'Theoretical Framework and Foundational Research'*. Gateshead: Daisy Education. Available at: **www.daisyeducationuk.com/media/Resources/Research%20docs/Daisy%20Education%20-%20Theoretical%20framework%20and%20foundational%20research.pdf** (accessed 18 09 2026)

Daisy Education. (2022) *'DreamBox Reading Plus Efficacy Study in Partnership With Derby Research School and Spencer Academies Trust'*. Gateshead: Daisy Education. Available at: **https://site-daisy-education.s3.amazonaws.com/media/Sales/Daisy%20Education%20Derby%20Case%20Study.pdf** (accessed 18 09 2026).

Deci, E.L. and Ryan, R.M. (1985) *'Intrinsic Motivation and Self-Determination in Human Behavior'*. New York: Plenum.

Department for Education. (2025) ONS Secure Research Service, dataset, Bespoke National Pupil Database extract

Dunn, L.M., Dunn, D.M., Styles, B. and Sewell, J. (2009) *'The British Picture Vocabulary Scale (3rd Ed.)'*. London: GL Assessment Limited.

Education Endowment Foundation (EEF). (2021) *'Individualised Instruction. Teaching and Learning Toolkit'*. London: Education Endowment Foundation. Available at: **https://educationendowmentfoundation.org.uk/education-evidence/teaching-learning-toolkit/individualised-instruction** (accessed 18 09 2026).

Education Endowment Foundation (EEF). (2022) '*Implementation and process evaluation guidance for EEF evaluations*'. London: Education Endowment Foundation. Available at: **EEF-IPE-Guidance-August-2022.pdf** (accessed 10 09 2026).

Education Endowment Foundation (EEF). (2023) *'Cost Evaluation Guidance for EEF Evaluations'*. London: Education Endowment Foundation. Available at: **Cost-Evaluation-Guidance-Feb_2023.pdf** (accessed 18 09 2026).

Ehri, L. (1997) 'Learning to Read and Learning to Spell Are One and the Same, Almost'. In: A. Perfetti, L. Rieben and M. Fayol (Eds.), *'Learning to Spell: Research, Theory, and Practice Across Languages (pp. 237–268)'*. Mahwah, NJ: Erlbaum.

Garnham, A. and Oakhill, J. (1996) 'The Mental Models Theory of Language Comprehension'. In: B.K. Britton and A.C. Graesser (Eds.), *'Models of Understanding Text (pp. 313–339)'*. Lawrence Erlbaum Associates, Inc.

Gehsmann, K., Spichtig, A. and Tousley, E. (2017) 'Validating an Online Assessment of Developmental Spelling in Grades Five Through Eight'. *Literacy Research: Theory, Method, and Practice,* 66: 1, 279–292. https://doi.org/10.1177/2381336917718834

Gellen, S., Wicker, K., Ainsworth, S., Morris, S. and Lewin, C. (2025) *'Using the DreamBox Reading Plus Adaptive Literacy Programme to Improve Reading Attainment, A Two-Armed Cluster Randomised Trial: Evaluation Protocol'*. London: Education Endowment Foundation. Available at: **https://educationendowmentfoundation.org.uk/projects-and-evaluation/projects/reading-plus-2024-25-trial** (accessed 18 09 2026).

General Data Protection Regulation (GDPR). (2016) *'Council Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the Protection of Natural Persons with Regard to the Processing of Personal Data and on the Free Movement of Such Data (United Kingdom General Data Protection Regulation) (Text with EEA relevance)'*. Available at: www.legislation.gov.uk/eur/2016/679 (accessed 18 09 2026).

Gerber, A.S. and Green, D.P. (2012) *'Field Experiments: Design, Analysis, and Interpretation'*. London: W.W. Norton & Company.

Glenberg, A.M. and Langston, W.E. (1992) 'Comprehension of Illustrated Text: Pictures Help to Build Mental Models'. *Journal of Memory and Language,* 31: 2, 129–151. https://doi.org/10.1016/0749-596X(92)90008-L

Guthrie, J.T. and Klauda, S.L. (2014) 'Effects of Classroom Practices on Reading Comprehension, Engagement, and Motivations for Adolescents'. *Reading Research Quarterly,* 49: 4, 387–416. https://doi.org/10.1002/rrq.81

Hachette Learning. (no date) *'New PiRA (Progress in Reading Assessments)'*. Hachette Learning. Available at: **www.hachettelearning.com/assessment/new-pira** (accessed 18 09 2026).

Hiebert, E., Scott, J., Castaneda, R. and Spichtig, A. (2019) 'An Analysis of the Features of Words That Influence Vocabulary Difficulty'. *Education Sciences,* 9: 1, 8. https://doi.org/10.3390/educsci9010008

Hoffmann, T.C., Glasziou, P.P., Boutron, I., Milne, R., Perera, R., Moher, D., Altman, D.G., Barbour, V., Macdonald, H. and Johnston, M. (2014) 'Better Reporting of Interventions: Template for Intervention Description and Replication (TIDieR) Checklist and Guide'. *BMJ,* 348, g1687. https://doi.org/10.1136/bmj.g1687

Humphrey, N., Lendrum, A., Ashworth, E., Frearson, K., Buck, R. and Kerr, K. (2016) *'Implementation and Process Evaluation (IPE) for Interventions in Educational Settings: An Introductory Handbook'*. London: Education Endowment Foundation. Available at: https://d2tic4wvo1iusb.cloudfront.net/documents/evaluation/evaluation-design/IPE_Handbook.pdf (accessed 18 09 2026).

Jehangir, K., Glas, C.A.W. and van den Berg, S. (2015) 'Exploring the Relation Between Socio-Economic Status and Reading Achievement in PISA 2009 Through an Intercepts-and-Slopes-As-Outcomes Paradigm'. *International Journal of Educational Research,* 71, 1-15. https://doi.org/10.1016/j.ijer.2015.02.002

Klaudia, S.L. and Guthrie, J.T. (2008) 'Relationships of Three Components of Reading Fluency to Reading Comprehension'. *Journal of Educational Psychology,* 100: 2, 310–321. https://doi.org/10.1037/0022-0663.100.2.310

Kraft, M.A. (2020) 'Interpreting Effect Sizes of Education Interventions'. *Educational Researcher,* 49: 4, 241–253. **https://doi.org/10.3102/0013189X20912798**

Kuhn, M., Rasinski, T. and Young, C. (2018) 'Best Practices in Reading Fluency Instruction'. In: L.M. Morrow and L.B. Gambrell (Eds.), *'Best Practices in Literacy Instruction (6th Edition), (pp. 271–288)'*. New York, NY: The Guildford Press.

Language and Reading Research Consortium. (2015) 'Learning to Read: Should We Keep Things Simple?' *Reading Research Quarterly,* 50: 2, 151–169. https://doi.org/10.1002/rrq.99

Lee, D.S. (2005) 'Training, Wages, and Sample Selection: Estimating Sharp Bounds on Treatment Effects'. *The Review of Economic Studies,* 76: 3, 1071–1102. https://doi.org/10.1111/j.1467-937X.2009.00536.x

Lewin, C, Morris, S., Ainsworth, S, Gellen, S and Wicker, K. (2024) *'Peer Assisted Learning Strategies UK (PALS-UK): A Whole Class Reading Approach: Evaluation Report'*. London: Education Endowment Foundation. Available at: https://d2tic4wvo1iusb.cloudfront.net/production/documents/projects/PALS_report_final.pdf?v=1729442320 (accessed 18 09 2025).

Lewin, C., Smith, A., Morris, S. and Craig, E. (2019) *'Using Digital Technology to Improve Learning: Evidence Review'*. London: Education Endowment Foundation. Available at: https://educationendowmentfoundation.org.uk/education-evidence/evidence-reviews/digital-technology-2019 (accessed 18 09 2026).

Martins, M., Reis, A.M., Castro, S.L. and Gaser, C. (2021) 'Gray Matter Correlates of Reading Fluency Deficits: SES Matters, IQ Does Not'. *Brain Structure and Function,* 226, 2585–2601. https://doi.org/10.1007/s00429-021-02353-1

McConkie, G.W. and Rayner, K. (1975) 'The Span of the Effective Stimulus During a Fixation in Reading'. *Perception & Psychophysics*, 17, 578–586. **https://doi.org/10.3758/BF03203972**

McKeown, M.G. and Beck, I.L. (2014) 'Effects of Vocabulary Instruction on Measures of Language Processing: Comparing Two Approaches'. *Early Childhood Research Quarterly,* 29: 4, 520–530. **https://doi.org/10.1016/j.ecresq.2014.06.002**

McTigue, E.M., Solheim, O.J., Walgermo, B., Frijters, J. Foldnes, N. (2019) 'How Can We Determine Students' Motivation for Reading Before Formal Instruction? Results From a Self-Beliefs and Interest Scale Validation'. *Early Childhood Research Quarterly,* 48: 3, 122–133. https://doi.org/10.1016/j.ecresq.2018.12.013

Mehigan, G. (2020) 'Effects of Fluency Oriented Instruction on Motivation for Reading of Struggling Readers'. Education Sciences, 10: 3, 56. **https://doi.org/10.3390/educsci10030056**

Moerbeek, M. and van Schie, S. (2019) What Are the Statistical Implications of Treatment Non-Compliance in Cluster Randomized Trials: A Simulation Study. *Statistics in Medicine,* 38: 26, 5071–5084. https://doi.org/10.1002/sim.8351

Morris, S. and Gellen, S. (2025) *'Using the DreamBox Reading Plus Adaptive Reading Intervention to Improve Reading Attainment: A Two-Armed Cluster Randomised Controlled Trial: Statistical Analysis Plan'*. London: Education Endowment Foundation. Available at: https://d2tic4wvo1iusb.cloudfront.net/production/documents/projects/reading_plus_-_statistical_analysis_plan.pdf?v=1738572088 (accessed 18 09 2026).

National Center on Intensive Intervention. (2019) *'Reading Plus Insight'*. National Center on Intensive Intervention. Available at: **https://charts.intensiveintervention.org/screening/tool/?id=77755cfc4f38cd9b** (accessed 18 09 2026).

O'Hare, L., Stark, P., Cockerill, M., Lloyd, K., McConnellogue, S., Gildea, A., Biggart, A., Connolly, P. and Bower, C. (2019) *'Reciprocal Reading: Evaluation Report'*. London, Education Endowment Foundation. Available at: **https://d2tic4wvo1iusb.cloudfront.net/production/documents/projects/Reciprocal_Reading.pdf?v=1695111397** (accessed 18 09 2026).

Oldfield, J. and Ainsworth, S. (2022) 'Decentring the 'Resilient Teacher': Exploring Interactions Between Individuals and Their Social Ecologies'. *Cambridge Journal of Education,* 52: 4, 409–430. https://doi.org/10.1080/0305764X.2021.2011139

Pace, A., Luo, R., Hirsh-Pasek,K., Michnick Golinkoff, R. (2017) 'Identifying Pathways Between Socioeconomic Status and Language Development'. *Annual Review of Linguistics,* 3, 285-308. https://doi.org/10.1146/annurev-linguistics-011516-034226

Paige, D.D., Rasinski, T., Magpuri-Lavell, T. and Smith, G.S. (2014) 'Interpreting the Relationships Among Prosody, Automaticity, Accuracy, and Silent Reading Comprehension in Secondary Students'. *Journal of Literacy Research,* 46: 2, 123–156. https://doi.org/10.1177/1086296X14535170

Quinn, J. M., Wagner, R.K., Petscher, Y. and Lope, D. (2015) 'Developmental Relations Between Vocabulary Knowledge and Reading Comprehension: A Latent Change Score Modelling Study'. *Child Development,* 86: 1, 159–175. https://doi.org/10.1111/cdev.12292

Radach, R. and Kennedy, A. (2013) 'Eye Movements in Reading: Some Theoretical Context'. *The Quarterly Journal of Experimental Psychology,* 66: 3, 429–452. https://doi.org/10.1080/17470218.2012.750676

Radach, R. and Spichtig, A. (2013) 'Visual Information Processing and Eye Movement Control in Reading: The "Visual Skills" Module in Reading Plus'. Winooski, VT: Reading Plus, Inc.

Rasinski, T., Samuels, S.J., Hiebert, E., Petscher, Y. and Feller, K. (2011) 'The Relationship Between a Silent Reading Fluency Instructional Protocol on Students' Reading Comprehension and Achievement in an Urban School Setting'. *Reading Psychology,* 32: 1, 75–97. https://doi.org/10.1080/02702710903346873

Rayner, K. (1986) 'Eye Movements and the Perceptual Span in Beginning and Skilled Readers'. *Journal of Experimental Child Psychology,* 41: 2, 211–236. https://doi.org/10.1016/0022-0965(86)90037-8

Rayner, K. (1998) 'Eye Movements in Reading and Information Processing: 20 Years of Research'. *Psychological Bulletin,* 124: 3, 372–422. https://doi.org/10.1037/0033-2909.124.3.372

Reading Solutions UK. (2022) *'Reading Plus Efficacy Study in Partnership With Derby Research School'*. Gateshead: Reading Solutions UK.

Reutzel, D.R., Petscher, Y. and Spichtig, A.N. (2012) 'Exploring the Value Added of a Guided, Silent Reading Intervention: Effects on Struggling Third-Grade Readers' Achievement'. *Journal of Educational Research,* 105: 6, 404–415. https://doi.org/10.1080/00220671.2011.629693

Samuels, S.J., Hiebert, H. and Rasinski, T. (2015) 'Eye Movements Make Reading Possible'. In: H. Hiebert, K.M. Wilson and G. Trainin (Eds.), *'Teaching Stamina & Silent Reading in the Digital-Global Age (pp. 32-57)'*. Santa Cruz: Text Project, Inc.

Schnotz, W. (2002) 'Commentary: Towards an Integrated View of Learning From Text and Visual Displays'. *Educational Psychology Review,* 14: 1, 101–120. https://doi.org/10.1023/A:1013136727916

Schuth, E., Köhne, J. and Weinert, S. (2017) 'The Influence of Academic Vocabulary Knowledge on School Performance'. *Learning and Instruction,* 49, 157–165. **https://doi.org/10.1016/j.learninstruc.2017.01.005**.

See, B.H., Gorard, S., Lu, B., Dong, L. and Siddiqui, N. (2022) 'Is Technology Always Helpful?: A Critical Review of the Impact on Learning Outcomes of Education Technology in Supporting Formative Assessment in Schools'. *Research Papers in Education,* 37: 6, 1064–1096. https://doi.org/10.1080/02671522.2021.1907778

Shadish, W.R., Cook, T.D. and Campbell, D.T. (2002) *'Experimental and Quasi-Experimental Designs for Generalized Causal Inference'.* New York, NY: Houghton Mifflin and Company.

Silverman, R.D., Johnson, E., Keane, K. and Khanna, S. (2020) 'Beyond Decoding: A Meta-Analysis of the Effects of Language Comprehension Interventions on K–5 Students' Language and Literacy Outcomes'. *Reading Research Quarterly,* 55: Suppl 1, S207–S233. https://doi.org/10.1002/rrq.346

Silverman, R.D., Keane, K., Darling-Hammond, E. and Khanna, S. (2024) 'The Effects of Educational Technology Interventions on Literacy in Elementary School: A Meta-Analysis'. *Review of Educational Research,* 95: 5, 972–1012. **https://doi.org/10.3102/00346543241261073**

Spichtig, A.N. (2012). *Effects of four electronic text presentation formats on reading efficiency and comprehension*, Capella University.

Spichtig, A.N., Gehsmann, K.M., Pascoe, J.P. and Ferrara, J.D. (2019) 'The Impact of Adaptive, Web-Based, Scaffolded Silent Reading Instruction on the Reading Achievement of Students in Grades 4 and 5'. *The Elementary School Journal,* 119: 3, 443–467. https://doi.org/10.1086/701705

Spichtig, A.N., Hiebert, E.H., Vorstius, C., Pascoe, J.P., Pearson, P.D. and Radach, R. (2016) 'The Decline of Comprehension-Based Silent Reading Efficiency in the United States. A Comparison of Current Data With Performance in 1960'. *Reading Research Quarterly,* 51: 2, 239–259. https://doi.org/10.1002/rrq.137

Stopforth, S. and Gayle, V. (2022) 'Parental Social Class and GCSE Attainment: Re-Reading the Role of 'Cultural Capital'. *British Journal of Sociology of Education,* 43: 5, 680–699. https://doi.org/10.1080/01425692.2022.2045185

Tauchmann, H. (2014) 'Lee (2009) Treatment-Effect Bounds for Nonrandom Sample Selection'. *The Stata Journal,* 14: 4, 884–894. www.stata-journal.com/sj14-4.html

Tracey, L., Elliot, L., Fairhurst, C., Mandefield, L., Fountain, I. and Ellison, S. (2022) *'Lexia Reading Core5®: Evaluation Report'*. London: Education Endowment Foundation. Available at: https://d2tic4wvo1iusb.cloudfront.net/production/documents/projects/Lexia-report-unconditional-effect-sizes.pdf?v=1695111274 (accessed 18 09 2026).

U.S. Department of Education, Institute of Education Sciences, What Works Clearinghouse. (2012) *'WWW Intervention Report, Students With Learning Disabilities: Peer-Assisted Learning Strategies'*. U.S. Department of Education. Available at: **https://ies.ed.gov/ncee/wwc/Docs/InterventionReports/wwc_pals_060512.pdf** (accessed 01 05 2026).

van Rijk, Y., de Mey, L., de Haan, D., van Oers, B. and Volman, M. (2017) 'Reading for Meaning: The Effects of Developmental Education on Motivation and Achievement in Reading Informative Texts in Primary School'. *Research Papers in Education,* 32: 3, 333–352. **https://doi.org/10.1080/02671522.2016.1225789**

Vanbecelaere, S., Said-Metwaly, S., Van den Noortgate, W., Reynvoet, B. and Depaepe, F. (2023) 'The Effectiveness of Tier 1 Digital Interventions for Early Reading: A Meta-Analysis'. *British Journal of Educational Technology,* 54: 5, 1397–1432. https://doi.org/10.1111/bjet.13351

Vardy, E.J., Breadmore, H.L. and Carroll, J.M. (Under Review) *'Measuring the Will and the Skill of Reading: Validation of the Self-Efficacy and Motivation to Read Scale'*.

Vitu, F. and McConkie, G.W. (2000) 'Chapter 12: Regressive Saccades and Word Perception in Adult Reading'. In: A. Kennedy, R. Radach, D. Heller and J. Pynte (Eds.), *'Reading as a Perceptual Process, pp. 301–326'*. Oxford: Elsevier Science Ltd.

West, M. (2025) *'An Ed-Tech Tragedy? Educational Technologies and School Closures in the Time of COVID-19'*. New York, NY: Routledge.

Williams, K.T. (2001) 'Group Reading Assessment and Diagnostic Evaluation (GRADE)'. Circle Pines, MN: American Guidance Service

Appendix A: The EEF cost rating

Appendix A Table 1: 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

OUTCOME: Progress in Reading Assessment (PiRA) Year 5 Summer Term 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 🔒		Adjustment for threats to internal validity [0]		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%					
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	Risk rating	Comments
Threat 1: Confounding	Low	This was designed as an RCT. The random allocation was undertaken by an independent statistician using appropriate methods that were fully described in the protocol (Gellen *et al.*, 2025) and SAP (Morris and Gellen, 2025). Both trial arms were well balanced, with similar school types, regional distribution, pupil characteristics, and comparable baseline age, FAR self-efficacy, and motivation scores.
Threat 2: Concurrent Interventions	Moderate	The IPE showed differential concurrent provision between trial arms: control schools had stronger baseline reading provision and continued to increase literacy activity during the trial, while intervention schools, more focused on vocabulary, often reduced other programmes, with around half reporting no additional provision alongside Reading Plus.
Threat 3: Experimental effects	Low	Data was collected on concurrent interventions during the trial. The study found that control schools were doing things similar to usual practice. No evidence on control schools altering their wider practice in response to participation in the trial.
Threat 4: Implementation fidelity	Low	Implementation and compliance are well-defined, aligned with the logic model, and high in the intervention group. Intervention was delivered with fidelity.
Threat 5: Missing Data	Low	Total missing data is low, limited differential missing data (8% of PiRA outcome for treatment and 11% for the control group), and it is explored quantitatively, giving similar results.
Threat 6: Measurement Outcomes	Low	There is some evidence of differential measurement between online and paper-based scores, with a slightly increased floor effect for online tests. However, the distribution was still normally distributed and is well discussed within the study.
Threat 7: Selective reporting	Low	Authors preregistered their analyses and made clear what was exploratory and what wasn't.

Initial padlock score: 4 padlocks – An intact RCT, sufficiently powered to 0.18 but there was attrition at the pupil level between randomisation and analysis (18%) which loses the trial 1 padlock.

Reason for adjustment for threats to validity: [0] - No adjustments as there is no evidence of serious threats to the internal validity of the study.
Final padlock score (initial score adjusted for threats to validity): 4

Appendix C: Changes since the previous evaluation[10]

Appendix C Table 1: Changes since the previous evaluation[11]

	Feature	Pilot to efficacy stage	Efficacy to effectiveness stage
Intervention	Intervention content	Describe any changes to the content.	Describe any changes to the content.
	Delivery model	Describe any changes in the delivery mechanism (e.g., from developer-led to train-the-trainers; in-person vs online; etc.).	Describe any changes in the delivery mechanism (e.g., from developer-led to train-the-trainers; in-person vs online; etc.).
	Intervention duration	Describe any changes in the duration of delivery (e.g., shortened due to the inclusion of a pre-test).	Describe any changes in the duration of delivery (e.g., shortened due to the inclusion of a pre-test).
Evaluation	Eligibility criteria	Describe any changes in the eligibility criteria for participation in the evaluation (schools, year groups, pupils etc.).	Describe any changes in the eligibility criteria for participation in the evaluation (schools, year groups, pupils etc.).
	Level of randomisation	Not applicable to pilots.	Describe any changes to the design from efficacy to effectiveness stage to the level of randomisation.
	Outcomes and baseline	Not applicable to pilots.	Describe any changes to the design from efficacy to effectiveness stage in: ○ Outcomes ○ Baselines
	Control condition	Not applicable to pilots.	Describe any changes to the design from efficacy to effectiveness stage to the control condition.

[10] Please delete this section if it is not applicable.
[11] Delete columns from the table if they are not applicable or adjust titles as relevant.

Appendix D: Effect size estimation

Appendix D Table 1: Effect size estimation

Outcome	Unadjusted differences in means	Adjusted differences in means	Intervention group		Control group		Pooled variance	Population variance (if applicable)
			n (missing)	Variance of outcome	n (missing)	Variance of outcome		
Primary outcome: Total PiRA score	0.17 (-0.93; 1.27)	0.22 (-0.75; 1.19)	2,167/2,284 (117)	59.99	2,273/2,273 (0)	57.87	59	Not applicable
KTEA-3 Comprehension	0.57 (-1.17; 2.31)	0.56 (-0.93; 2.05)	505 (0)	155.88	512 (0)	158.21	156.93	Not applicable
KTEA-3 Fluency	0.76 (-0.66; 2.18)	0.66 (-0.48; 1.8)	518 (0)	80.25	519 (0)	89.63	85.04	Not applicable
KTEA-3 Vocabulary	0.79 (-0.24; 1.82)	0.77 (-0.11; 1.65)	511 (0)	38.69	509 (0)	51.66	45.25	Not applicable
FAR self-efficacy	-1.15 (-3.68; 1.38)	-1.79 (-4.03; 0.45)	1,928 (0)	559.31	1,982 (0)	605.63	582.6	Not applicable
FAR motivation	-0.53 (-2.31; 1.26)	-0.43 (-1.83; 0.96)	1,928 (0)	196.17	1,982 (0)	212.93	204.6	Not applicable

Appendix D Table 2: Variance and ICC

Outcome	Unadjusted/unconditional model					Adjusted/conditional model				
	Estimated pupil-level variance	Estimated class-level variance	Estimated school-level variance	ICC school (95% CI)	ICC class	Estimated pupil-level variance	Estimated class-level variance	Estimated school-level variance	ICC school (95% CI)	ICC class
Primary outcome: Total PiRA score	50.42	2.85	5.73	0.1 (0.07; 0.13)	0.05 (0.02; 0.08)	31.35	1.28	5.41	0.14 (0.1; 0.2)	0.03 (0.01; 0.06)
KTEA-3 Comprehension	151.38	Not applicable	5.55	0.04 (0.01; 0.11)	Not applicable	99.4	Not applicable	5.55	0.05 (0.02; 0.12)	Not applicable
KTEA-3 Fluency	78.38	Not applicable	6.66	0.08 (0.04; 0.14)	Not applicable	56.4	Not applicable	3.6	0.06 (0.03; 0.12)	Not applicable
KTEA-3 Vocabulary	41.86	Not applicable	3.39	0.07 (0.04; 0.14)	Not applicable	25.99	Not applicable	2.92	0.1 (0.06; 0.17)	Not applicable
FAReading self-efficacy	546.88	19.05	16.67	0.03 (0.01; 0.07)	0.03 (0.01; 0.06)	393.69	14.21	14.74	0.03 (0.01; 0.08)	0.03 (0.01; 0.06)
FAR motivation	182.53	13.96	8.11	0.04 (0.02; 0.09)	0.07 (0.03; 0.10)	126.98	9.38	4.1	0.03 (0.01; 0.09)	0.07 (0.03; 0.10)

You may re-use this document/publication (not including logos) free of charge in any format or medium, under the terms of the Open Government Licence v3.0.

To view this licence, visit https://nationalarchives.gov.uk/doc/open-government-licence/version/3 or email: psi@nationalarchives.gsi.gov.uk

Where we have identified any third-party copyright information you will need to obtain permission from the copyright holders concerned. The views expressed in this report are the authors' and do not necessarily reflect those of the Department for Education.

This document is available for download at https://educationendowmentfoundation.org.uk

Education Endowment Foundation

The Education Endowment Foundation
5th Floor, Millbank Tower
21–24 Millbank
London
SW1P 4QP

https://educationendowmentfoundation.org.uk

@EducEndowFoundn

Facebook.com/EducEndowFoundn