Education Endowment Foundation

Evaluation of Infant Language Link, a two-armed cluster randomised control trial

Evaluation report

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Martin Culliney, Ester Ehiyazaryan-White, Dieuwerke Rutgers, Karen Daniels

Sheffield Hallam University
Knowledge Applied

Sheffield Institute of Education

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

0207 802 1653

info@eefoundation.org.uk

www.educationendowmentfoundation.org.uk

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About the evaluator

This project was independently evaluated by the Sheffield Institute of Education, Sheffield Hallam University. As a member of the Education Endowment Foundation evaluator panel for more than ten years, SHU has completed numerous randomised controlled trials and other studies for the EEF and other organisations including government departments, charities, and other policymakers.

The project email address is LanguageLink@shu.ac.uk
Corresponding author: Martin Culliney (M.Culliney@shu.ac.uk).

Acknowledgements

Nick Speed, Tom Kidston, Freya Wallace, and Linda Bray all provided valuable administrative support. The speech and language therapists recruited as assessment administrators made the study possible by collecting outcome data in participating schools. There are too many of them to name here but they all made a vital contribution. We would also like to thank the Infant Language Link development team at Speech Link Multimedia Ltd., the teachers and children who took part in the evaluation, and colleagues at the EEF who were involved in the trial.

Some of the analysis was undertaken in the Office for National Statistics Secure Research Service using data from the ONS and other owners. This does not imply the endorsement of the ONS or other data owners.

Executive summary

The project

Infant Language Link is a programme for schools that uses a standardised screening tool to identify pupils with below average language needs and then provides tiered support for identified children. It is developed by Speech Link Multimedia Ltd. For this trial, participating pupils were in Year 1 (age 5 to 6) although the programme usually begins with reception pupils, continuing through Years 1 and 2. Infant Language Link combines whole-class provision delivered by teachers with targeted teaching assistant-led sessions for pupils with mild-to-moderate language needs. The whole-class provision is based on implementing four core strategies intended for use with all children in day to day teaching: 'break it down', 'explain clearly', 'check as you go', and 'keep it visual'. Teachers implement these strategies in every lesson. Targeted support consists of 24 half-hour sessions, held twice per week for this trial, organised as three groups of eight sessions delivered in the sequence 'listening', 'concepts and instructions', and 'language structure'. The expected group size for a targeted intervention session is four pupils. Teachers and teaching assistants (TAs) attend two 60 to 90 minute training webinars run by the delivery team; SENCOs (Special Educational Needs Coordinators) attend three. Some training sessions are role-specific.

The study was funded by the Education Endowment Foundation (EEF) through the Department for Education's Accelerator Fund. The project was a two-armed, two-level randomised controlled efficacy trial, with schools randomised to receive Infant Language Link or continue usual teaching practice with Year 1 pupils. A total of 166 schools and 3,021 pupils took part in the trial, which ran from September 2023 to July 2024. Each school selected one class to take part. A maximum of 20 pupils per school were included in the evaluation. The primary outcome measure for the trial was language ability, which included receptive and expressive language. The implementation and process evaluation involved fieldwork visits comprising staff interviews and lesson observations in ten schools. A survey of participating school staff was also carried out.

Table 1: Key conclusions

Key conclusions	
1.	Year 1 pupils in Infant Language Link schools did not make any additional months' progress in receptive and expressive language, on average, compared to pupils in control schools. This result has a high security rating.
2.	Among Year 1 pupils eligible for free school meals (FSM) and pupils with English as an additional language (EAL), those in Infant Language Link schools did not make any additional months' progress in receptive and expressive language, on average, compared to those in other schools. These results may have lower security than the overall findings because of the smaller number of pupils.
3.	The subgroup of Year 1 pupils selected for the targeted support made one fewer month's progress in receptive and expressive language, on average, than a comparison sample of pupils from control schools. These results may have lower security than the overall findings because of the smaller number of pupils.
4.	The whole-class component promoted dialogue between teachers and children and between children, for example through paired talk, but it was not seen by teachers as distinct from usual high quality oracy teaching practice. This similarity of the whole-class component to business as usual may explain the lack of additional progress for pupils in intervention schools as compared to those in control schools.
5.	The targeted intervention enabled children to practice precision and clarity in spoken interactions and was enjoyed by pupils and staff. Teachers and TAs reported increased pupil language confidence following the targeted sessions. However, it was found to be resource intensive in its use of TA time and there were instances of displacement of other activities.

EEF security rating

These findings have a high security rating. This was an efficacy trial, which tested whether the programme worked under developer-led conditions in a number of schools. The trial was a well-designed two-armed, two-level cluster randomised controlled trial. The trial was well-powered. Relatively few pupils (10.1%) who started the trial were not included the final analysis. However, the security of the trial is reduced because there were some differences in expressive and receptive language at baseline between the pupils in intervention and control schools. The differential rates of missing data (12.1% in intervention schools and 8.2% in control) means there is the potential for bias.

Additional findings

Year 1 pupils in Infant Language Link schools did not make, on average, any additional months progress compared to those in the control group. This is our best estimate of impact, which has a high security rating. As with any study, there is always some uncertainty around the result: the possible impacts of this programme also include negative effects of two months less progress and positive effects of up to one month of additional progress. Teachers were found to have implemented the programme with fidelity, however they did not perceive it as new practice or different from their business as usual.

School staff valued the Infant Language Link screening tool for identifying children with language needs. Teachers reported that the screening data provided a clearer sense of the specific language needs of individual children. There was willingness from staff to act on the data, however, staff also expressed concern regarding the lack of resource to adequately respond to this additional evidence of children's needs.

The subgroup of Year 1 pupils selected for the targeted support in Infant Language Link schools made one fewer month's progress, on average, than those in the control group equivalent. However, there is more uncertainty in these results because of the smaller number of pupils. These targeted sessions are highly structured; TAs reported that they were easy to follow and did not require additional preparation beyond printing. This highly structured nature meant that the targeted sessions were perceived as scripted and less flexible than usual teaching practice and there may have been fewer opportunities for dialogue to develop. The targeted sessions also meant that the selected children and TAs were away from the main classroom.

Opportunities for different types of classroom talk (Alexander, 2020; Mercer and Littleton, 2007) were offered by the programme. The tiered nature of the programme facilitated partner talk in different ways: children were observed taking frequent turns to speak in whole-class sessions and as part of a small group in targeted intervention sessions. This is consistent with the move toward encouraging children to practice talk that is exploratory and supports the development of expressive and receptive language skills (Bercow, 2018). There was no conclusive evidence, however, that the level or quality of children's talk had changed significantly as a direct result of the programme.

Cost

The Infant Language Link subscription currently costs £450 for the first year. In subsequent years, there is a reduced rate of £427.50. Over three years, this amounts to £1,305, or £17.40 per pupil per year over three years. This assumes one class per year receives the programme. The targeted intervention requires around 25 hours of TA time per year including the initial pupil screening, although this could be completed by either the project lead, TA, or class teacher.

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
Expressive and receptive language – whole class	-0.01 (-0.10; 0.07)	0		2715	0.768	£ £ £ £ £
Expressive and receptive language – targeted group	-0.05 (-0.24; 0.14)	-1	N/A	268	0.579	N/A
Expressive and receptive language – FSM pupils	-0.02 (-0.13; 0.09)	0	N/A	893	0.730	N/A

Introduction

Background

For children with speech and language difficulties, early intervention is crucial (Bercow, 2018; Law, Charlton and Asmussen, 2017). Difficulties can arise with strands of language development including phonology, morphology, syntax, semantics, and pragmatics. As language serves instrumental, regulatory, interactional, personal, representational, heuristic, and imaginative functions (Halliday, 1978), it is intrinsic to social, emotional, and cognitive development. Early experiences of language are strongly associated with academic performance (Roulston, 2011) and the early identification of speech and language needs is critical (Oracy All Party Parliamentary Group, 2021). Furthermore, there is emerging evidence that the Covid-19 pandemic adversely affected the language experiences of some young learners (Crew, 2021; Tracey et al., 2022).

There is growing evidence around the positive impact of targeted interventions in early years language. The Nuffield Early Language Intervention (NELI) has demonstrated efficacy (Sabetta et al., 2016) and effectiveness (Dimova et al., 2020) in randomised controlled trials and is widely used in schools. Parents and Children Together (PACT), involving a parent-delivered language intervention, is another relevant programme. It showed a positive impact at both immediate and delayed post-test when evaluated by the developers at 22 children's centres (Burgoyne et al., 2018). However, a larger EEF-funded efficacy trial with 450 pupils across 43 sites discovered no evidence of additional progress for pupils in the intervention group at delayed post-test (Menzies et al., 2022). Problems collecting primary outcome data after the intervention due to the Covid-19 pandemic led the evaluators to use an alternative, teacher-administered language measure as primary outcome. Despite this, findings from the delayed post-test were rated as moderate to high security, representing confidence in the null results.

A challenge for targeted interventions is reaching the correct pupils (Lee and Pring, 2016:140). Research from Australia has shown that teachers can identify the wrong students for support or miss those who truly need it (Antoniazzi et al., 2010). The most recent evaluation of NELI, which also used standardised screening, found that some teachers would have preferred to decide which pupils received support. Nevertheless, the intervention had a positive impact on pupils identified for support through standardised screening (Dimova et al., 2020:48–49).

Infant Language Link enables schools to identify and support children in reception, Year 1, and Year 2 (age 4 to 7) with below average language ability. Pupils are selected for targeted support based on results from a standardised universal screening assessment (Speech Link Multimedia Ltd, 2025)). This mechanism for identifying pupils who need additional support is central to the programme. A graduated approach is used to determine the level and intensity of support for pupils (as detailed in the SEND Code of Practice, see DfE and DoH, 2015). The tiered structure, which comprises whole-class provision and additional support for pupils found to be in need, is another distinctive feature. Since 2018, around 2,700 schools per year have used Infant Language Link.

Survey data from Infant Language Link, covering teachers, SENCOs, Tas, and senior leaders, found that 93% of the respondents (n = 962) thought the programme made a positive difference to their children, while 71% said they changed the way they worked with children because of the programme (Mustoe-Playfair and Bingham, 2020). These findings suggest that the programme has been well received when implemented through the normal delivery approach, which involves beginning with reception pupils and continuing to support them as they move through Year 1 and Year 2.

This efficacy trial provides more robust evidence of the impact of Infant Language Link when delivered to pupils in Year 1, using data from language assessments administered by the evaluators in schools along with findings from the fieldwork visits and teacher surveys conducted for the implementation and process evaluation.

Intervention

The programme is described here using the TIDIER framework. The theory of change agreed with the developer during the setup stage has been included at the end of this section along with a description of the underlying mechanisms and assumptions at each step. School recruitment and pupil testing went according to plan in this study. Not all intervention schools fully complied with the programme, as is discussed in the Compliance section of the report.

Name

Infant Language Link.

Why—theory/rationale

The importance of early intervention for pupils struggling with language development is widely recognised. Infant Language Link is a programme that enables schools to identify and support children with below average language ability using standardised pupil screening and tiered levels of support.

Who—recipients

Infant Language Link is designed for schools to identify and support pupils in the reception year (age 4 to 5) and provide continued support for pupils in Year 1 and Year 2 (age 5 to 7). For this evaluation it was delivered to Year 1 pupils, so all pupils in the analysis sample received their first exposure to the programme in Year 1. Intervention schools were also free to provide the programme to pupils in reception and Year 2 if desired, although the evaluation only included pupils who were in Year 1 during the study year. All pupils receive the whole-class component taught by the teacher and those identified as needing further support participate in targeted group sessions led by TAs.

In addition, the programme aims to support teachers and TAs in developing an increased understanding of the impact of speech, language, and communication needs (SLCN) and the importance of identification. The programme aims to support teachers and TAs in increasing their use of whole-class and targeted support strategies aimed at developing children's oral language skills.

What—materials

The online screening tool for assessing pupil language needs is a central part of the programme. This screening takes place at the start of the delivery period. The Infant Language Link learning materials are provided to schools: these include a set of 500 group and classroom resources, 12 planned termly language groups, 24 individual teaching plans, and 52 handouts for parents. All materials are stored in an online platform to which schools subscribe.

Guidance notes and session plans for teachers are supplied along with resources to support the delivery of engaging, interactive teaching, and learning activities—for example, story planners, talk templates, and concept cards. The session plans and learning resources enable TAs to deliver the targeted group sessions in a structured way. Printable tracking sheets allow teachers and TAs to record individual pupil progress.

What—procedures

As the programme is delivered in school, the project lead (usually the SENCO or headteacher), teachers, and TAs attend webinar training sessions led by a speech and language therapist from the delivery team at the start of the programme. The project lead is required to attend three webinars, with Year 1 teachers attending the first and second of these sessions and TAs attending the first and third. All training sessions are completed before Infant Language Link is implemented. The first webinar is an introduction to the programme. This covers the importance of speech and language skills, how they develop, the impact of difficulties, and how to carry out the Infant Language Link assessment. This webinar lasts one and a half hours and is attended by SENCOs, class teachers, and TAs.

Following this initial training, staff attend a second webinar based on their role in the school. Class teachers and SENCOs attend the 'Using Language Link in the Classroom' webinar. This covers the Language Link whole-class strategies and classroom resources, measuring progress, and provides an overview of the Language Link targeted interventions. This webinar takes one hour.

TAs and learning support assistants, as well as the project leads—whether this is the SENCO or headteacher—attend the 'Delivering Language Link Interventions' webinar. The session focuses on setting up and delivering the language group interventions and the supplementary teaching programmes. This webinar lasts for one hour.

This series of training events prepares school staff to deliver the programme to participating pupils.

Following the initial language screening completed by school staff (IPE data identified this to be teachers, TAs, or project leads) with all pupils in the participating class, staff apply 'universal strategies', which consist of four core high quality teaching strategies for communication in the classroom: 'break it down', 'explain clearly', 'check as you go', and 'keep it visual'. These strategies are recommended for use with all children in the class as they are understood to support language development for both those with and without identified language needs. Pupils identified as having additional needs receive further support through individual and group interventions, as described below.

Staff from Speech Link are available to schools as a 'helpdesk' for schools to contact if they require support. First level support is technical and administrative, with callers put in contact with speech and language therapists where needed.

Who—provider

School staff receive webinar training, delivered by a speech and language therapist, to both develop understanding of the importance of identifying and supporting speech, language and communication needs (SLCN) and to enable them to use the package successfully.

How—format

Teachers deliver the universal element of the programme to all pupils in class. It is intended that the core strategies are used in every lesson. Targeted group interventions are also delivered to groups of 4 to 5 pupils by TAs. The amount and type of intervention depends on the child's performance on the initial screening. In this trial, the developer guidance for including pupils in targeted intervention groups was to prioritise pupils identified through the screening as having moderate language needs. Schools that felt they had sufficient resource could include pupils with severe language needs but were advised to exercise caution and ensure that groups also contained children with moderate language needs. Guidance regarding EAL pupils is to keep them in whole-class sessions where possible and, if including them in small group interventions, not to group them with SLCN pupils. There are 40 sessions available across five language groups for Year 1 classrooms, however, for this trial, schools were expected to complete 24 targeted sessions from three specified language groups (see When and How Much section below for more details on the groups) with eight sessions in each of the groups. A minimum of 16 30-minute targeted sessions per school year was expected. A session plan with target aims, key vocabulary, and guidance for completing structured activities is provided for each session. Teacher guidance notes highlight the language skills and vocabulary covered with advice on developing these in the classroom to support generalisation. Pupil progress within group interventions is tracked. For children who have not made the expected progress, supplementary teaching is recommended, following completion of all three language group sessions. This intensive individual support is delivered for a short time, focusing on a specific area of language difficulty and monitoring progress through testing before and after via a short paper-based test of the specific area of language that the child is working on.

Where—location

For this trial, the programme was delivered in Year 1 classrooms at schools in England. Recruitment was nationwide. Small group interventions took place in a space separate from the whole class teaching room. During IPE visits these sessions were observed either in a separate room or a designated work area in the school hallway.

When and how much—dosage

The programme was delivered during the 2023/2024 school year. Teacher training took place immediately after the autumn half-term and the individual pupil screening in intervention schools began in November. Delivery was due to run until the summer half-term (late May), although some schools were delayed in completing all of the targeted intervention sessions and continued into June and July.

For targeted intervention sessions it was recommended that schools deliver two sessions per week, each lasting 30 minutes. Sessions were organised into three groups of eight sessions each, to be delivered in the following order:

1. Listening (8 sessions).
2. Concepts and Instructions (8 sessions).
3. Language Structure (8 sessions).

The sessions were delivered by the TA designated to the Year 1 class taking part in the evaluation.

Guidance on implementing the universal classroom strategies stipulated that the four core strategies should be used within every lesson. The principles of high quality teaching implicit in these strategies were emphasised in the training sessions. As the universal classroom strategies did not displace but aimed to enhance existing teaching content, there was no specific guidance given on when and how often the strategies should be implemented.

Tailoring—adaptation

Normally Infant Language Link begins by screening reception pupils who then participate in the programme with continued support through Year 1 and Year 2 as described above. Pupils identified for targeted support in the reception year would be screened again at the start of Year 1. However, this trial focused on Year 1 due to the lack of existing evidence around interventions working with this year group, so all pupils in the evaluation sample in each intervention school were screened at the start of Year 1 and received their first exposure to the programme in Year 1.

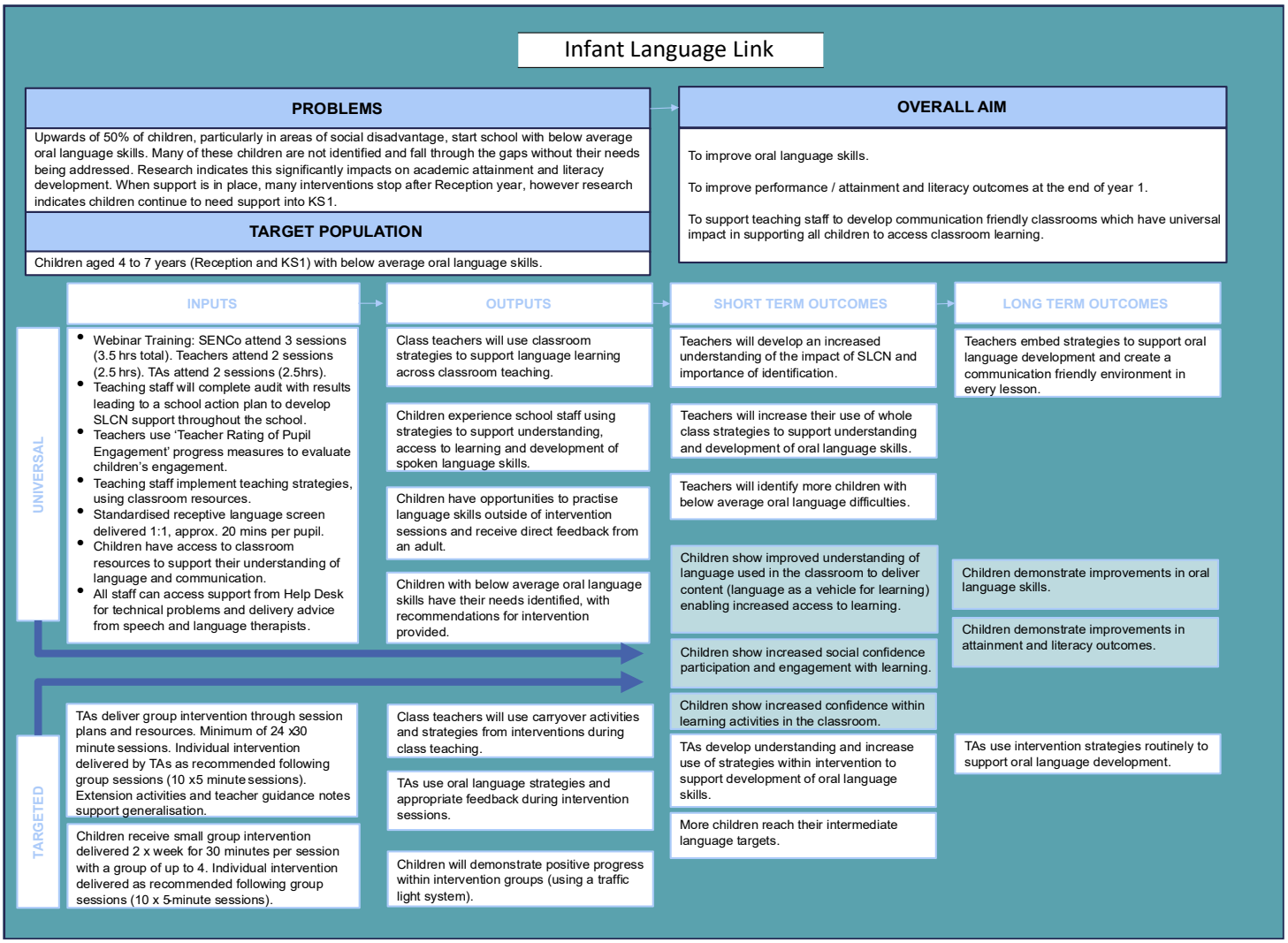
The timeframe for delivering the targeted sessions was also compressed for this evaluation as pupil screening did not begin until November. Infant Language Link normally recommends that schools provide one weekly targeted group session for children, whereas in this evaluation two weekly sessions were delivered to cover the required content in the available time.

In addition, usual practice for the Infant Language Link programme is for teachers to tailor the choice of intervention groups offered to children depending on the children's speech and language needs as indicated by the Infant Language Link screening tool. However, for the purposes of the evaluation, schools were instructed to deliver three intervention groups comprising eight sessions each and delivered in a set order (1: 'listening'; 2: 'concepts and instructions; 3: 'language structure').

List of causal assumptions

1. Teacher and TA understanding of the importance of oral language skills is improved by engagement in the training sessions.
2. Teacher and TA skills for supporting development of oral language are improved by engagement in the training sessions.
3. Teachers are motivated to change their practice through an improved sense of the importance of oral language skills.
4. Receptive language screening will identify students with below average receptive language skills for school staff to target with the intervention.
5. The language areas focused on in the assessment and development in the intervention are key functional areas of language for children in reception and KS1 that are important in enabling them to access the curriculum.
6. Four core quality-first teaching strategies will have an impact on classroom practice enabling teaching staff to create a communication-friendly environment, supporting students with language difficulties to access teaching.
7. Group and individual targeted intervention sessions delivered by TAs will improve children's oral language skills.
8. Use of the Infant Language Link whole-school package in schools will result in significant improvement to children's oral language skills.
9. Improvements in oral language skills will translate to improvements in literacy and attainment.

Figure 1: Infant Language Link theory of change



Evaluation objectives

The evaluation set out to address the following research questions.

Impact evaluation

RQ1 Primary research question: what is the impact of Infant Language Link on Year 1 pupils' language and communication skills, as measured by the primary outcome (CELF Linguistic Concepts and Sentence Comprehension subtests and RAPT Information and Grammar combined)?

RQ2 Secondary research questions:

a. What is the impact of the intervention on the subgroup of Year 1 pupils who received targeted support, as measured by the primary and secondary outcomes?
b. What is the impact of the intervention on the subgroup of Year 1 FSM pupils, as measured by the primary outcome?
c. What is the impact of the intervention on Year 1 pupils' receptive and expressive language skills as measured by individual subtests of the outcome measure (CELF Linguistic Concepts and Sentence Comprehension; RAPT Information and Grammar).
d. What is the impact of the intervention on the subgroup of EAL pupils, as measured by the primary outcome?

Implementation and process evaluation

IPE RQ1 To what extent was Infant Language Link implemented with fidelity and as intended:

a. Have teachers, TAs, and the SENCO attended the training sessions?
b. Have teachers made use of the Infant Language Link helpdesk for implementation support?
c. Have teachers used the screening assessment to screen all children in the class and identify pupils requiring support?
d. Have teachers implemented the whole-class strategies in every lesson?
e. Have TAs delivered the targeted intervention sessions (eight sessions in a listening group and eight sessions in two other groups)? Have pupils selected for targeted support been attending as per agreed compliance thresholds?
f. Have progress measures been completed and targets set for improvement?
g. What is the uptake in other year groups and other classes in Year 1 beyond the compulsory Year 1 class?

IPE RQ2 To what extent does the intervention, including the training and materials, improve teachers' and TAs' understanding and skills around oral language development?

IPE RQ3 To what extent does the intervention, including the use of the standardised screening assessment, help teachers to identify pupils requiring support?

IPE RQ4 To what extent does the tiered approach to the intervention support children's speech and language development? Are there particular challenges or benefits for specific groups (EAL, disadvantaged pupils)?

IPE RQ5 What evidence is there that schools have changed their speech and language teaching and learning practices in response to the intervention compared to business as usual?

IPE RQ6 What contextual factors at school, practitioner, and pupil level impact on the implementation of the programme?

IPE RQ7 Are there any unintended consequences of the programme?

The evaluation protocol and statistical analysis plan (SAP) are available from the EEF website.

Ethics and trial registration

The study was approved by the Sheffield Hallam University (SHU) research ethics committee on 7 February 2023, ref: ER51329820. The trial is publicly registered at: https://www.isrctn.com/ISRCTN60336419

Schools were recruited by the delivery team. Their participation was confirmed by signing the Memorandum of Understanding, which can be found in Appendix D. The parent information sheet was distributed to schools prior to them sending pupil data to the evaluators. It included a slip for parents to return if they did not wish for their child to take part in the evaluation. This can also be found in Appendix D.

Data protection

The evaluation team at SHU and the delivery team at Speech Link Multimedia both acted as independent data controllers for this trial. Both organisations collected data directly from schools to fulfil their respective roles on this study. All data is held on secure organisational networks. The processing of personal data (pupil identifiers) is defined under GDPR (Article 6 (1e)) as a task in the public interest. Pupil FSM and EAL status is not special category data under GDPR but the DfE requires it to be treated as such: it is therefore processed for the purpose of research under GDPR Article 9 (j). Further details are published in a trial-specific privacy notice: https://www.shu.ac.uk/sheffield-institute-education-research/projects/infant-language-link.

To produce this report, evaluation data has been linked with information from the National Pupil Database (NPD) and shared with the Department for Education, the EEF's archive manager, and, in an anonymised form, with the Office for National Statistics. Further matching to the NPD and other administrative data may take place during subsequent research, as stated in the privacy notice. Personal data has not and will not be transferred or stored outside of the European Economic Area at any point.

After the evaluation is complete, SHU retains participant data in anonymised form for research and knowledge exchange purposes, including academic presentations or publications, for five years after the publication of the final project report. SHU remains as a data controller for this period. Speech Link Multimedia only retains personal data at the specific request of schools. SHU is also submitting project data to the EEF data archive upon publication of the final evaluation report. At this point, the EEF becomes a data controller and the EEF's data contractor for the archive becomes a data processor. SHU's privacy notice provides full information of policies and procedures in relation to the personal data of research participants and their rights: https://www.shu.ac.uk/about-this-website/privacy-policy/privacy-notices/privacy-notice-for-research

Project team

Evaluation team, Sheffield Hallam University

Dr Martin Culliney, Senior Research Fellow at SHU: principal investigator and impact evaluation lead.

Dr Ester Ehiyazaryan-White, Senior Lecturer in Childhood and Early Childhood at SHU: IPE lead.

Dr Dieuwerke Rutgers, Research Fellow at SHU: IPE design, fieldwork, and analysis.

Dr Karen Daniels, Associate Professor at SHU: IPE advisor.

Sean Demack, Principal Research Fellow at SHU: statistical advisor.

Delivery team, Speech Link Multimedia

Derry Patterson, Lead Speech and Language Therapist for Speech Link Multimedia Ltd.: author of Speech Link, Infant Language Link, and Junior Language Link programmes.

Louise Burton, Research Lead for Speech Link Multimedia Ltd.: delivery lead for this project.

Yin Collighan, specialist speech and language therapist: support for school recruitment and training delivery.

Methods

Trial design

Table 3: Trial design

Trial design, including number of arms		Two-arm, two-level cluster randomised trial.
Unit of randomisation		School.
Stratification variables		Education Investment Area; existing use of Speech and Language interventions; use of Speech and Language Therapy services
Primary outcome	Variable	Language and communication.
	Measure (instrument, scale, source)	Combined measure created by standardising and summing: Pearson CELF-5 (Sentence Comprehension: 0–26); Pearson CELF-5 (Linguistic Concepts: 0–25); Renfrew Action Picture Test combined (Information: 0–41, Grammar: 0–39).
Secondary outcomes	Variable(s)	Language and communication.
	Measure(s) (instrument, scale, source)	Pearson CELF-5 (Sentence Comprehension: 0–26); Pearson CELF-5 (Linguistic Concepts: 0–25); Renfrew Action Picture Test (Information: 0–41, Grammar 0–39).
Baseline for primary outcome	Variable	Language and communication
	Measure (instrument, scale, source)	Combined measure created by standardising and summing: Pearson CELF-5 (Sentence Comprehension: 0–26); Pearson CELF-5 (Linguistic Concepts: 0–25); Renfrew Action Picture Test (Information: 0–41, Grammar 0–39).
Baseline for secondary outcomes	Variable	Language and communication
	Measure (instrument, scale, source)	Pearson CELF-5 (Sentence Comprehension: 0–26); Pearson CELF-5 (Linguistic Concepts: 0–25); Renfrew Action Picture Test (Information: 0–41, Grammar 0–39).

This two-arm, two-level clustered efficacy trial evaluated a programme delivered over a single school year to pupils in Year 1 classes at intervention schools. There were no changes to the original trial design during the evaluation. Control schools continued with business as usual during the study period and were offered a £500 payment for taking part upon completion of pupil testing. No payment was offered to intervention schools. Baseline and outcome testing were carried out in the first and final half terms of the 2023/2024 school year, respectively, immediately before and after the delivery period. Pupil scores on the CELF-5 Sentence Comprehension and Linguistic Concepts and the Renfrew Action Picture test were combined to create the primary outcome measure and were analysed separately as secondary outcome measures. Further details on pupil testing can be found below.

Participant selection

Any state-funded mainstream school in England with at least 20 pupils in the 2023/2024 Year 1 cohort was eligible, with the exception of those already using Infant Language Link, which is available commercially. Schools were recruited by the

developer between February and June 2023. The trial was promoted through The Link magazine, a termly publication produced by the developers which is sent to all schools in England. Headteachers and SENCos were also approached by email and post.

As the trial was supported by the DfE Accelerator Fund, the aim was to recruit at least 50% of schools from local authorities that are Education Investment Areas. Schools were required to sign a MoU and complete a screening questionnaire (see Appendix D). They were then asked to submit pupil details for the participating Year 1 class to the evaluation team. A total of 166 schools did this before the deadline in October 2023, confirming their place on the trial.

A maximum of 20 pupils per school were included in the evaluation. When the selected Year 1 class was larger, 20 pupils were randomly selected by the evaluation team. It was accepted that some pupils selected for targeted support would be missed by this approach although the random selection minimised the risk of this occurring disproportionately. Having more pupils would have increased assessment costs and provided negligible gains in statistical sensitivity. Pupils with autistic spectrum disorders, selective mutism, or global learning difficulties were not eligible as the programme is not designed to support children with these needs.

Outcome measures

Baseline measures

For each analysis, assessment data collected at post-intervention has been used as the outcome. The same measure administered at pre-intervention was used as the baseline covariate for each model presented in this report. All baseline assessments were conducted in schools between 18 September and 8 November 2023.

Primary outcome

The programme aims to improve pupil expressive and receptive language. Due to the equal importance of these two dimensions, it was agreed during the evaluation setup period that the primary outcome should incorporate both. Specifically, the measure used comprises the two Pearson CELF-5 subtests that are most relevant to this programme—Sentence Comprehension, scored on a 0–26 scale, and Linguistic Concepts, scored 0–25, both testing receptive language—and the Renfrew Action Picture Test (RAPT),[1] a test of expressive language which is scored in two parts: Information, scored 0–41, and Grammar, scored 0–39). These commercial tests cannot be included in this report. They were selected in agreement with the developer based on relevance to the programme aims and ease of administration.

It was decided that the approach adopted in the original EEF NELI trial (Sibieta et al., 2016), which combined language measures by standardising and summing the constituent scales, should be used to create the primary outcome. Specifically, each of the four language scales is converted into a z-score; these are added together with the resulting value converted into a z-score so that each component contributes equally to the composite score. This approach deals with the fact the separate measures use different scales that would not be comparable in raw form. The code for constructing the primary outcome measure is detailed in Appendix E along with the main analysis code. An alternative approach using structural equation modelling (SEM) based on that used in Dimova et al. (2020) is used here as a sensitivity analysis. The original plan was for the SEM-derived measure to be the primary outcome, but this was changed after the baseline data showed poor model fit. The decision-making process and accompanying analysis results are discussed further in the evaluation protocol and SAP.

All outcome data was collected during June and July 2024. Assessments were administered in school by speech and language therapists working for the evaluators. The CELF-5 subtests were completed first, followed by the RAPT. The developer advised conducting a receptive language assessment before an expressive language assessment as the latter requires children to talk and can be seen as more demanding. Total assessment time per child did not exceed 30 minutes.

[1] CELF - https://www.pearsonclinical.co.uk/store/ukassessments/en/Store/Professional-Assessments/Speech-%26-Language/Clinical-Evaluation-of-Language-Fundamentals---Fifth-Edition/p/P100009245.html.
RAPT - https://www.routledge.com/Action-Picture-Test/Speechmark-Renfrew/p/book/9781138586208

All test administrators were blind to allocation. It is possible that some schools inadvertently revealed their allocation in the course of the assessment visit although this was not reported by any assessors.

A half-day training session for assessors was provided by the evaluator consisting of practical demonstrations and role-play practice of the CELF-5 and RAPT. This was intended to improve consistency between the different testers, who assessed pupils in person at participating schools, recording the marks electronically before posting all completed test papers back to the evaluation team. A team of 38 assessors conducted the baseline assessments. They were recruited on the basis of their professional qualifications and experience in administering the selected assessments. For the outcome testing there were 35 assessors, 21 of whom were also involved at baseline. Quality assurance processes to ensure reliability included moderating a sample of 5% of returned test papers.

Secondary outcomes

The two CELF-5 subtests used for the primary outcome have been analysed separately as secondary outcomes. The Renfrew Action Picture Test comprises two components: Information, scored 0–41, and Grammar, scored 0–39. These were also analysed separately as secondary outcome measures. For each secondary outcome the raw score was used. While the developers describe the programme as equally relevant to expressive and receptive language, these analyses are intended to highlight any variation in effects for these different areas of language development.

Sample size

The design is a two-arm, two-level clustered RCT. In calculating the minimum detectable effect size (MDES), the smallest that could be detected as statistically significant (often set as $p < 0.05$) with a statistical power of 80% or higher, our estimates at the protocol stage were based on the following assumptions:

M_{j-k-2}: T-distribution multiplier assuming a two-tailed test with a statistical significance of 0.05, statistical power of 0.80 and J-K-2 (164) degrees of freedom;

R_i: participant (pupil) level pre/post-test correlation of 0.75 ($R_i^2 = 0.56$);

R_c: cluster (school) level pre/post-test correlation of 0.20 ($R_c^2 = 0.04$);

ρ: intracluster correlation (ICC) of 0.20;

j: number of schools = 170;

m: pupils per school = 20;

k: number of cluster level covariates[2] = 4; and

P: proportion of schools allocated to intervention group (P = 0.5).

The participant correlation values were taken from Dimova et al. (2020), which used a very similar primary outcome measure (Preschool CELF instead of CELF-5), and the school-level correlation was conservatively estimated at 0.20. The ICC reported at the analysis stage of Dimova et al. (2020) was surprisingly high (0.35) so we provided MDES estimates for a lower ICC (0.20), which is closer to the figures from the randomisation and protocol stages of that evaluation (0.15 and 0.12 respectively). This is also the default ICC recommended for attainment outcomes by the IES What Works Clearinghouse (2022:171). Calculations were performed in Excel using the formula set out in Bloom et al. (2007) for two-level clustered randomised controlled trials (Equation 1). This allows covariates to be included at both individual (pupil) and cluster (school) level, which in turn increases sensitivity.

[2] Whether a school is in an Education Investment Area, uses another relevant intervention, uses external speech and language support at least once each half term, or uses such support but less frequently than every half term.

Equation 1: Minimum detectable effect size in a two-level clustered RCT

$$\text{MDES} = M_{j-k-2}\sqrt{\left(\frac{\rho(1-R_c^2)}{\text{P}(1-\text{P})\text{J}}\right)+\left(\frac{(1-\rho)(1-R_i^2)}{\text{P}(1-\text{P})\text{Jm}}\right)}$$

The original recruitment target was 170 schools as exceeding this figure seemed unrealistic: 166 were recruited—this did not change the MDES (0.20 overall, estimated 0.22 for FSM pupils). The FSM subgroup was defined using the EVERFSM_6_P indicator from the NPD. This data was not accessed until after outcome testing was complete so FSM power calculations were based on estimated numbers in the protocol using the same parameters as the main sample. It was acknowledged that the analysis would be underpowered for this subgroup relative to the main sample. The number of FSM pupils per school (five out of 20, or 25%) assumed in the protocol was based on national figures for Year 1 FSM eligibility at that time (22.5%).

The analysis sample size was 162 schools as four of the 166 baselined did not taking part in outcome testing. Applying the assumptions from the protocol to the analysis sample produces an overall MDES of 0.20. For the FSM subgroup, the MDES rose to 0.23 with this slight reduction in school numbers. Power calculations using values obtained from the analysis are provided in the impact evaluation Results section (Table 7).

Randomisation

Randomisation was at school level to minimise spillover risk. The procedure was conducted by the evaluation team using the stratarand command in Stata. All schools were recruited by the developer. All schools were randomised at the same time. The developer was not involved in the randomisation process and was informed of the outcome by the evaluators once allocation was completed. Three stratifiers were used, specifically whether a school:

- is/not (1/0) in an Education Investment Area;
- does/not (1/0) use any other relevant interventions (namely NELI, WellComm, Elklan, Language for Learning, and Talk Boost, treated as one binary measure); and
- uses external speech and language therapy support (to be treated as three categories: 'none', 'low frequency', and 'half-termly or more frequent'); this is to reduce the risk of allocation imbalance in areas receiving additional support undermining the viability of the training, and to mitigate against the use of other relevant interventions or support services confounding the results of this trial.

The evaluators remained blind to group allocation at the time of randomisation but it was acknowledged that maintaining this would not be possible once the schools were allocated. Bias was minimised by using the Stata software to allocate schools.

Statistical analysis

Primary analysis

Multilevel linear random intercept models have been constructed for the primary outcome, with pupils clustered into schools, using the mixed command in Stata (versions 15 onward). A measure of language and communication ability—combining the selected Pearson CELF-5 subtests (Sentence Comprehension and Linguistic Concepts) and the RAPT—is used as the baseline covariate for analyses of the primary outcome. This is the same as the outcome measure but collected at pre-intervention. As discussed above and in the SAP, the primary outcome was formed through summing and standardising the four constituent scales as opposed to SEM, as was initially intended due to poor model fit with the baseline data when attempting to create a single combined measure using SEM.

A complete cases approach is used in all analyses. The first model only includes the school-level group identifier (an outcome only model) and supplies the unconditional variance figure used to calculate the effect size. The second model

adds the baseline covariate at the pupil and school levels.[3] The school-level covariate is the same as the pupil measure for each model but calculated at school level. The final model also includes the randomisation stratifiers: whether the school is in an Education Investment Area, uses similar interventions, or uses external speech and language therapy services. This model forms the headline ITT impact analysis for the primary outcome. Results of all three models for the primary outcome are included in the Impact Evaluation section so the difference between the effect sizes can be compared, however for all other analyses only the results from the final model are presented. The headline effect size is calculated using the 'Allocation' coefficient from the following equation:

Equation 2: ITT analysis model

$$Y_{ij} = b_0 + b_1 Allocation_j + b_2 Baseline_{ij} + b_3 Baseline_{school\,j} + b_4 EIA_j + b_5 Uses_{int\,j} + b_6 SLT_{low\,j} + b_7 SLT_{high\,j} + u_j + e_{ij}$$

where

Y_{ij} is the outcome for pupil *i* in school *j*;

b_0 is the constant;

Allocation is a binary indicator of school treatment allocation;

pupil- and school-level baseline covariates are represented by *Baseline* and *Baseline_school*;

the stratifiers used in the randomisation are denoted as *EIA,* a binary indicator of whether the school is in an Education Investment Area;

Uses_int is a binary indicator of whether the school uses a relevant intervention apart from Infant Language Link;

SLT_low and *SLT_high* are dummies derived from the categorical variable of whether schools use external speech and language therapy support;

the random intercepts are represented by $u_{j,;}$

and e_{ij} is the error term.

For each model, the coefficient of the school-level dummy variable used to distinguish pupils in Infant Language Link schools from control group pupils is converted into Hedges' g effect size statistics with 95% confidence intervals.

Secondary analysis

The secondary outcomes are the scores from the two CELF-5 subtests, Linguistic Concepts and Sentence Comprehension, and the two RAPT scoring scales, Information and Grammar. Full details on these measures can be found above. Secondary outcomes are analysed using the same approach as the primary analysis.

Analysis in the presence of non-compliance

Compliance is measured at the school level. There were three indicators, which were combined into a single compliance measure. First, schools were required to send the participating teacher, TA, and SENCO to the training sessions described above. Attendance at all sessions was necessary to achieve compliance on this. Second, intervention schools were expected to administer the initial language screening to all pupils selected for the evaluation from the nominated class. The

[3] These are centred so that the school-level mean is centred on the mean for all schools (grand mean) and the pupil level is centred on the school mean (see Hedges and Hedberg, 2013).

intention was for all pupils to be screened for the school to be classed as compliant, but the developer recommended that the 13 schools where one or two pupils were not screened should be categorised as compliant on this as they had clearly engaged with this aspect of the programme.

The third compliance indicator was determined by the number of listening group and language group sessions delivered by TAs to the pupils selected for targeted support. If six or seven listening group sessions were completed along with all eight sessions in both of the language groups (Language Structure, and Concepts and Instructions) the school was treated as fully compliant. Part compliance requires the staff training and pupil screening criteria to be met along with the completion of at least six of the eight listening group sessions plus all eight sessions in one of the two language groups. The listening group works on developing the attention and listening skills required to support language development. If the children are fully achieving the aims and completing the activities they can finish the group after six sessions. In contrast, the language groups work on a variety of different targets and all sessions must be completed for the children to make good progress against the aims of the group. All eight sessions in the language group must therefore be delivered for the group to be considered complete. The number of schools achieving full and part compliance is shown below in Table 13 (see impact evaluation Results section).

The compliance variables are used to estimate the Complier Average Causal Effect (CACE). The purpose of the CACE analysis is to estimate the impact of Infant Language Link for Year 1 pupils in schools deemed to have complied with the programme. CACE is estimated using two-stage least squares (2SLS) regression. The first stage models compliance using the randomisation stratifiers along with additional school-level items that are available via the school census as listed in Table 8 (below). This is a multilevel logistic regression model used to generate predicted compliance (1 or 0) for use in the second stage model. The second stage models use predicted compliance in place of the group identifier variable in the ITT analyses specified above to generate the CACE estimates. This process is undertaken twice, for part and full compliance. The evaluation SAP specified that predicted compliance would be estimated using multilevel logistic regression, yet when attempting this the model did not converge. As an alternative, 2SLS regression was used via the ivregress command in Stata 17 to explore whether compliance was related to outcome scores, and whether compliance was endogenous, following the approach used in Anders et al. (2021).

Missing data analysis

There was no missing outcome data at baseline as only pupils that completed the baseline assessments are included in the study sample. The only missing data is, therefore, found in the post-intervention outcomes. Missing data in the outcome and explanatory variables is examined to consider whether it is reasonable to assume that it is missing at random. A multilevel logistic regression model with a binary outcome identifying when outcome data is missing ('1') or not ('0') and the same covariates as the headline ITT model is estimated to examine any patterns. This model is then replicated with only participants at schools that took part in the outcome testing to focus on pupil-level attrition.

The SAP stated that in the instance of any missing outcome data, the complete baseline and ITT samples would be compared across all ITT variables and the additional school variables shown in Table 4 below. With over 5% of pupil outcome data missing, a multilevel logistic regression model with a binary outcome identifying when outcome data is missing ('1') or not ('0') was constructed and the ITT variables and additional school-level variables used to identify whether the missing outcome data can be assumed to be missing completely at random. Multiple imputation using the full set of covariates from the ITT analysis (listed above under Primary Analysis and included in Equation 2) was used to estimate the missing outcome values. Ten imputations were carried out and each imputed variable was used as the outcome in a multilevel model as per the headline ITT analysis. Further details are provided in the Results section.

Subgroup analyses

Subgroup analyses are conducted for the following restricted samples using the approach outlined above for the headline primary outcome:

- pupils selected for additional small group support in intervention schools— these pupils are assessed by the initial screening as having mild to moderate speech and language needs:
    - a comparison sample from control schools is identified using scores on the baseline assessment; and
    - the correlation between the pupil screening scores and baseline assessment scores is presented for the intervention group to provide assurance that this approach selects an appropriate comparison sample;
- pupils eligible for free school meals as identified by the 'EVERFSM_6_P' indicator obtained from the NPD, as is recommended for all EEF trials; and
- pupils with English as an additional language, defined by the 'LanguageGroupMajor' indicator in the NPD, as the developer provides specific advice for supporting these pupils.

As per EEF guidance, an additional model is also estimated with an FSM indicator and an FSM*Allocation interaction term. This is presented in the impact evaluation Results section. This model contains the full set of covariates included in the full analysis model described above.

Additional analyses and robustness checks

An outcome only model and a model with only school- and pupil-level baseline covariates have been estimated for the primary outcome as robustness checks. Sensitivity analysis using an alternative approach to creating the combined primary outcome measure (SEM) is also presented in this report. This is to check for any differences in headline results arising from the decision to use a different method of combining the four assessment scales, as discussed (see Outcome Measures) and in the SAP. The analysis follows the same procedure as the headline analysis.

Estimation of effect sizes

The effect size measure used is Hedges' g. This is calculated using the following equation:

Equation 3: Effect size calculation

$$ES = \frac{(T - C)_{adjusted}}{\sqrt{\delta^2_{sch} + \delta^2_{pup}}}$$

where

δ^2_{sch} is the school-level unconditional variance and δ^2_{pup} is the unconditional pupil-level variance for the language outcome from the empty/null multilevel model; and

$(\text{T} - \text{C})_{\text{adjusted}}$ is the mean difference between the attainment of pupils in treatment schools and pupils in control schools: this is obtained from the coefficient for the school-level treatment allocation variable from the final headline analyses and controls for the covariates included in that model (see Equation 2, above).

The coefficient standard error and the upper/lower 95% confidence intervals are converted into units of standard deviations using the above formula.

Estimation of ICC

For the primary outcome at both pre- and post-intervention, ICCs at the school level are estimated using a null/empty two-level multilevel variance components model. The variance decomposition for the two levels (school and pupil) along with the ICC estimates for the full headline analysis model of the primary outcome are presented below.

Equation 4: ICC calculation

$$\mathrm{ICC} = \frac{\mathrm{Variance}_{\mathrm{school}}}{\mathrm{Variance}_{\mathrm{school}} + \mathrm{Variance}_{\mathrm{pupil}}}$$

Longitudinal analysis

No longitudinal analysis was conducted or planned. The protocol mentioned the possibility of further analysis using KS1 scores one year after outcome testing when the study cohort were in Year 2. As statutory KS1 testing ended in 2023 this would have required schools to run an additional assessment. All schools were surveyed about their intention to continue KS1 testing on a voluntary basis. Of the 166 schools recruited, 107 did not respond to this question, 35 said they did intend to continue, and 24 said they did not. With only 21% of schools signalling their intention to run KS1 testing, this was considered insufficient and the longitudinal extension was not pursued.

Implementation and process evaluation

The aim of the IPE was to understand the barriers and enablers to implementing the programme and to explore some of the causal assumptions identified through the agreed logic model. The IPE methods and questions were also designed to complement the compliance indicators and to explore how the training is experienced by staff at the school, the perceived effectiveness of the screening tool, the provision of targeted group interventions, the delivery of classroom strategies, improvement targets, and the completion of progress measures. Fidelity was defined in the IPE as the extent to which teaching staff adhered to the model of delivery specified by the developer and articulated in the theory of change. Measures of fidelity were determined by the inputs and outputs specified in the theory of change.

IPE research questions

RQ1 To what extent was Infant Language Link implemented with fidelity and as intended?

- Have teachers, TAs, and the SENCO attended the training sessions?
- Have teachers made use of the Infant Language Link helpdesk for implementation support?
- Have teachers used the screening assessment to screen all children in the class and identify pupils requiring support?
- Have teachers implemented the whole-class strategies in every lesson?
- Have TAs delivered the targeted intervention sessions (eight sessions in a listening group and eight sessions in two other groups)? Have pupils selected for targeted support been attending as per agreed compliance thresholds?
- Have progress measures been completed and targets set for improvement?
- What is the uptake in other year groups and other classes in Year 1 beyond the compulsory Year 1 class?

RQ2 To what extent does the intervention, including the training and materials, improve teachers' and TAs' understanding and skills around oral language development?

RQ3 To what extent does the intervention, including the use of the standardised screening assessment, help teachers to identify pupils requiring support?

RQ4 To what extent does the tiered approach to the intervention support children's speech and language development? Are there particular challenges or benefits for specific groups (EAL, disadvantaged pupils)?

RQ5 What evidence is there that schools have changed their speech and language teaching and learning practices in response to the intervention, compared to business as usual?

RQ6 What contextual factors at school, practitioner, and pupil level impact on the implementation of the programme?

RQ7 Are there any unintended consequences of the programme?

Research methods

The IPE comprised the following methods of data collection.

1. **Evidence review and early discussion with stakeholders** to build an evidence-informed logic model and agree data collection methods. This took place during the setup phase to ensure that the study was informed by the relevant policy developments and recommendations on SLCN and SEND as well as by the literature on existing provision of speech and language support in school contexts.

2. **Training observations and review of teacher guidance and programme materials** were carried out by the evaluation team with three training sessions observed (one of each kind offered to the school staff). The purpose was to examine content, delivery format, and engagement with a view to exploring the implications for skills and understanding through subsequent data collection. This was also used to identify areas of the programme which were emphasised by the development team during the training and specific advice given to teachers and TAs on ways of delivering the four core

strategies inherent to Infant Language Link. The training observations aimed to address RQ1 by enabling the evaluation team to accurately identify features of the programme during subsequent case study visits and in survey responses.

3. **Pre-intervention online survey** with teachers and TAs in both intervention and control schools to collect information on usual practice ('business as usual'), including the use of any other relevant interventions, common programmes, and common practices. The pre-intervention survey addressed the following IPE research questions:

- **RQ2:** questions examined teacher and TA understanding and skills relating to children's oral language development prior to the evaluation. This data was compared to data gathered through the interviews and post-intervention survey.
- **RQ3:** questions were included on the current methods used in each school to identify children needing support with speech and language and the perceived effectiveness of these methods. These responses were compared to data from the interviews and post-intervention survey examining the perceived effectiveness of the standardised screening assessment tool.
- **RQ5:** the pre-intervention survey collected data on current teaching and learning practices, relevant internal policies, internal support for speech and language, ways of monitoring children's progress, barriers to accessing support, and frequency of use of SLCN strategies in teaching. This data was then compared to data from the post-intervention survey and interviews, identifying specific examples of change from business as usual in speech and language related teaching and learning practices resulting from the programme.

4. **Post-intervention online survey in intervention schools** with teachers, TAs, and the senior leader involved in overseeing the programme were used to gauge how closely delivery followed the intended treatment model as defined in the logic model (fidelity, RQ1). Questions were also included on how well the different components of the programme were delivered (quality). These responses were triangulated with qualitative data from observations and interviews—both interviews and post-intervention online surveys explored teacher and TA perceptions of how well different components worked and were delivered (RQs 2, 3, and 4) while the observation data provided first hand evidence. The post-intervention surveys also explored teacher, TA, and senior leader perceptions of whether the outcomes of the programme detailed in the logic model were achieved (perceived impact). In addition, survey respondents were asked to comment on whether they had changed their speech and language teaching and learning practices in response to the programme, compared to business as usual (RQ5). These responses were also triangulated with qualitative data from the interviews, focusing on perceived impact.

The post-intervention surveys collected data on contextual factors impacting on the delivery of the programme (**RQ6**) such as whether a focus on Infant Language Link was affected by the need to prepare Year 1 pupils for the Phonics Screening Check, issues relating to staff turnover or availability, concurrent OFSTED inspection, and possible (although unlikely) Covid restrictions (context/moderators). Similar questions were also included in the semi-structured interview, triangulating the data obtained in the post-intervention survey. The pre- and post-intervention surveys were checked by the development team to establish face validity. As experts in speech and language support, the development team were asked to comment on the clarity of the questions, selecting terminology which was known to be accessible to teaching staff when describing SLCN concepts. For the post-intervention survey, the development team were also asked to comment on the terminology used to describe elements of the programme and processes which teaching staff in intervention schools would have engaged in. The questionnaires were further checked by the evaluation team and by EEF staff, focusing on the clarity and sequencing of the questions, the length of the questionnaire, and ensuring branching off worked correctly for different groups of respondents. In error, the pre-intervention survey was initially sent without a question to identify the school of the respondent resulting in the loss of 25 cases. A further 217 usable responses were received from 127 of the 166 schools randomised and baselined.

5. Post-intervention online survey in control schools completed by teachers, TAs, and the senior leader involved in signing up for the trial. Questions focused on establishing whether there was evidence of contamination**,** for example, control schools increasing provision for SLCN during the time of the programme running in intervention schools or accessing another relevant programme on speech and language during this period. The survey also examined context and moderators**,** exploring whether any broader issues (for example, a change in policy or regulations or Covid-19 disruption) have led to adaptations to usual speech and language provision.

6. School visits were carried out by the evaluation team in ten intervention schools during the spring term (February to March 2024). It was expected that by then all schools would have completed pupil screening and commenced targeted intervention groups and that teachers and TAs would have become sufficiently familiar and confident in the delivery of the programme. The purpose of the school visits was to understand fidelity to the programme and to ascertain influences on implementation and the extent to which implementation was aligned with programme design. Purposive sampling was used to identify ten 'case study' schools, aiming for an even geographical spread with some schools in Education Investment Areas. A mixture in terms of how often external speech and language therapy support was used in school was also sought. The profile of the fieldwork sample is displayed in Table 4, which shows that the ten schools were broadly reflective of the overall sample.

Table 4: Fieldwork school characteristics

	Fieldwork sample		Randomisation sample	
	N	%	N	%
Region				
East Midlands	2	20	40	24.1
East of England	0	0	9	5.4
London	1	10	13	7.8
North East	1	10	15	9.0
North West	4	40	48	28.9
South East	0	0	6	3.6
South West	0	0	3	1.8
West Midlands	1	10	15	9.0
Yorkshire and the Humber	1	10	17	10.2
Education Investment Area				
No	3	30	57	34.3
Yes	7	70	109	65.7
External SLT support				
None	1	10	17	10.2
Low—termly or less often	3	30	58	34.9
High	6	60	91	54.8

During each visit, the evaluation team interviewed the staff delivering the programme and observed delivery in the classroom and in targeted sessions. The visits included the following activities.

- **Observations (semi-structured, non-participant)**. In each fieldwork school, semi-structured, non-participant observations were carried out in a whole-class session led by the teacher and a targeted small group session led by the TA. Data was captured through researcher fieldnotes using a detailed observation schedule (see Appendix F). In total, ten targeted sessions and nine whole-class sessions were observed, with an expected length of 45 minutes. In one school, the class observation did not take place as the teacher was undertaking training on the day of the visit. In two further schools, class observations were cut to 15 minutes due to circumstances in school on those days; in other schools, they averaged 40 minutes, depending on the teacher's lesson plan.

  These observations aimed to provide evidence of fidelity of implementation (RQ1) and to answer RQ4, focusing on the effectiveness of teacher and TA use of the four teaching strategies. A semi-structured schedule (see Appendix F) was used with a particular focus on pupil engagement with the strategies, their ability to respond to the tasks, and their use of expressive and receptive language in response to stimulus from the teacher or TA. The observations sought understanding of the effectiveness of the tiered programme design in supporting speech and language development (RQ4) and observation data was triangulated with evidence from Year 1 class teacher and TA interviews and survey responses. Informed consent was gained from teachers and TAs for carrying out the

classroom and targeted session observations (see Appendix F). In addition, an opt out consent form and information sheet was sent to parents of children in the class participating in the evaluation (see Appendix D).

- **Semi-structured interviews**. In each of the ten fieldwork schools, an interview was carried out with the Year 1 class teacher, the TA delivering the targeted intervention sessions, and the member of the leadership team with overall responsibility for the programme at the school (usually the SENCO; in some cases, the deputy headteacher). All staff interviewed had attended or viewed the training sessions. In total, 29 interviews were completed. In one school, the programme lead was also the Year 1 class teacher.

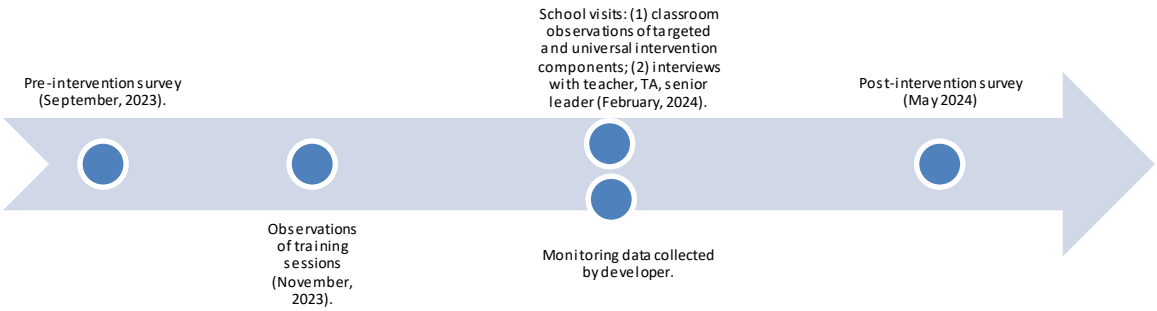
  Participants were interviewed separately to allow for questions specific to each role. Questions were included in the interview schedules for teachers and TAs regarding the use of the Infant Language Link teaching and learning approach within the targeted and the whole-class components of the programme, addressing RQ4. Teachers and TA interviews also explored the use of carryover activities that aimed to facilitate continuity of the strategies, activities, and topic work from the targeted intervention to the whole-class sessions. This highlighted the connections made between the targeted and universal components of the programme (RQ4). The school leader interviews included questions on how they oversaw the programme and mechanisms for tracking the pupil progress in speech and language development (RQ4 and RQ5). Interview data on each IPE research question was used to triangulate responses from the survey data in intervention schools and the data collected through fieldwork observations. Interviews were voice recorded following informed consent from each individual participant. Consent forms and information sheets can be found in Appendix D.

7. Analysis of monitoring data. The developer collects information from schools on the implementation of the programme. Some of this data was used to determine compliance with the programme, which is part of the impact evaluation. In the Results section, descriptive statistics on key variables relevant to fidelity and dosage as part of the IPE are presented. This includes whether schools are recording progress measures and setting targets for improvements, and also the number of targeted sessions delivered.

Analysis

A mixed-methods, multi-phase design (Borglin, 2015) was used to collect and analyse the IPE data. This allowed for different methods to be deployed concurrently as well as sequentially and for insights from the training observations to shape the design of the observation and interview schedules (see Figure 2). Mixing data collection methods also enabled initial insights from the classroom observations and interviews to inform the design of the questions in the post-intervention survey for intervention schools.

Figure 2: Timing of IPE activities



Following this initial stage of sequential data analysis, parallel data analysis was undertaken where numerical data from the pre- and post-intervention surveys and textual data from interviews were analysed separately, but the findings were integrated during the interpretative stage. Simultaneous data analysis was used in the case of observation data to enable a holistic interpretation of the teaching and learning interactions observed. Findings from the observation dataset were then integrated with the broader IPE findings during the interpretative stage.

Analysis of quantitative data

Data from school staff surveys and monitoring information gathered by the developer were analysed through descriptive statistics. For survey items relevant to both intervention and control schools, such as those relating to teaching practice or confidence, crosstabulations were used to present the results. Multivariate statistical methods were not used in the IPE. Findings from the pre-intervention survey were used to inform the design of fieldwork interview schedules and the fieldwork findings informed post-intervention survey design. The IPE section of the final report is structured thematically according to the research questions, which facilitates the presentation of data collected from different research methods in an integrated manner.

Analysis of qualitative data

A mixed-methods approach was used to analyse the data collected through interviews and observations of whole-class and targeted group interventions.

The qualitative analysis of semi-structured interviews, classroom observations, and targeted session observations included deductive and inductive coding:

- deductive coding, essential for exploring the logic model and causal assumptions, focused on the dimensions of fidelity, dosage, quality, reach, responsiveness, perceived impact, and context; and
- data-driven inductive coding allowed researchers to listen to the subjective experiences of school staff implementing the intervention: inductive coding was essential in understanding the IPE dimensions of fidelity, quality, responsiveness, perceived impact, reach, context and moderators, and any discussion concerning the perceived challenges and benefits of implementing the programme.

Based on the deductive coding and theme development approach outlined in Crabtree and Miller (1992), an initial template of codes was developed, also known as protocol coding (Miles, Huberman and Saldaña, 2014). The template of codes was based on categories central to the evaluation and those emerging from the agreed logic model and its causal assumptions. It was also based on insights from the training observations. Coding was focused on examining the extent to which the programme outcomes had been achieved, the key enablers and barriers, and evidence of the relationships between specific inputs, outputs, and outcomes. The seven IPE research questions were used as broad umbrella labels under which the relevant codes and coding categories were organised.

This approach is considered suitable when the analysis starts with an initial conceptual model (Miles and Huberman, 1984), which in this case was the agreed logic model for the Infant Language Link evaluation and its causal assumptions. Data was coded using the agreed codebook and triangulated across the qualitative datasets. Documents from all relevant datasets were imported into NVivo, which made visible the appearance of codes in more than one dataset. In each case, evidence supporting the code was sought from more than one dataset (Clark et al., 2021). Multiple instances of a code appearing across more than one dataset indicated that it could be developed into a coding category or could form the basis of a key finding to be developed into a broader theme.

Changes to data analysis methodology in relation to the published protocol

The approach to data analysis described in the protocol involved a second cycle of inductive coding intended to condense the large number of first cycle codes into pattern codes (Miles, Huberman and Saldaña, 2014). This was carried out, driven by the data and aligned with the research questions, however, the process of discovering new themes was not considered necessary as the existing coding frame provided the necessary information to answer the research questions and examine the IPE dimensions of fidelity, dosage, quality, reach, responsiveness, perceived impact, and context and moderators.

Minimising bias and ensuring analytical rigour

Two members of the evaluation team were involved in coding the data. As each researcher visited five schools, each analysed data from the five schools they had visited. Using the codebook in the analysis supported testing for intercoder reliability and for critical examination of the appropriateness of the codes (Miles and Huberman, 1994). Intercoder reliability was strengthened through regular reviews, particularly in the initial stages of coding, to compare approaches and ensure

consistency in how instances were coded. This contributed to minimising bias and increasing the dependability and trustworthiness of the qualitative data analysis (Feredey and Muir-Cochrane, 2006).

Table 5: IPE methods overview

Research methods	Data collection method	IPE dimension	Research question	Sample size and sampling criteria	Data analysis method
Pre-intervention survey	Online questionnaire	Context/ moderators.	RQ1, 2, 3, 5	All schools: TAs, teachers, and project leads; N = 217 responses (84 control, 133 intervention).	Summary statistics.
Post-intervention survey (separate versions for intervention and control schools)	Online questionnaire	Fidelity, quality, dosage, perceived impact, reach, context/ Moderators.	RQ1 to 7	217 responses (126 control, 91 intervention).	Summary statistics.
Interviews	Face to face individual semi-structured interviews, voice recorded.	Fidelity, dosage, quality, reach, responsiveness, perceived impact, context/ Moderators.	RQ1 to 7	Intervention schools (n=10): teacher, TA, and senior leader.	Protocol deductive coding; inductive causation coding; pattern coding.
Observation (classroom)	Semi-structured, non-participant observations.	Fidelity, quality responsiveness.	RQ1, 4, 5	Intervention schools (n = 10): one targeted session and one whole-class session observed.	Protocol deductive coding; inductive causation coding; pattern coding
Observation (training)	Semi-structured observations of training sessions.	Fidelity, quality, responsiveness.	RQ1	2 training sessions	Protocol deductive coding.
Monitoring data analysis	Data on delivery collected from schools by developer.	Fidelity, dosage, reach.	RQ1, RQ4	All intervention schools completing trial (n = 80).	Summary statistics.

Costs

Cost information was provided by the developer at the end of the trial to reflect what it would cost a school looking to implement Infant Language Link. Costs per pupil per year were calculated over a three-year period based on EEF guidance published in February 2023. All figures are presented in the relevant section below.

Timeline

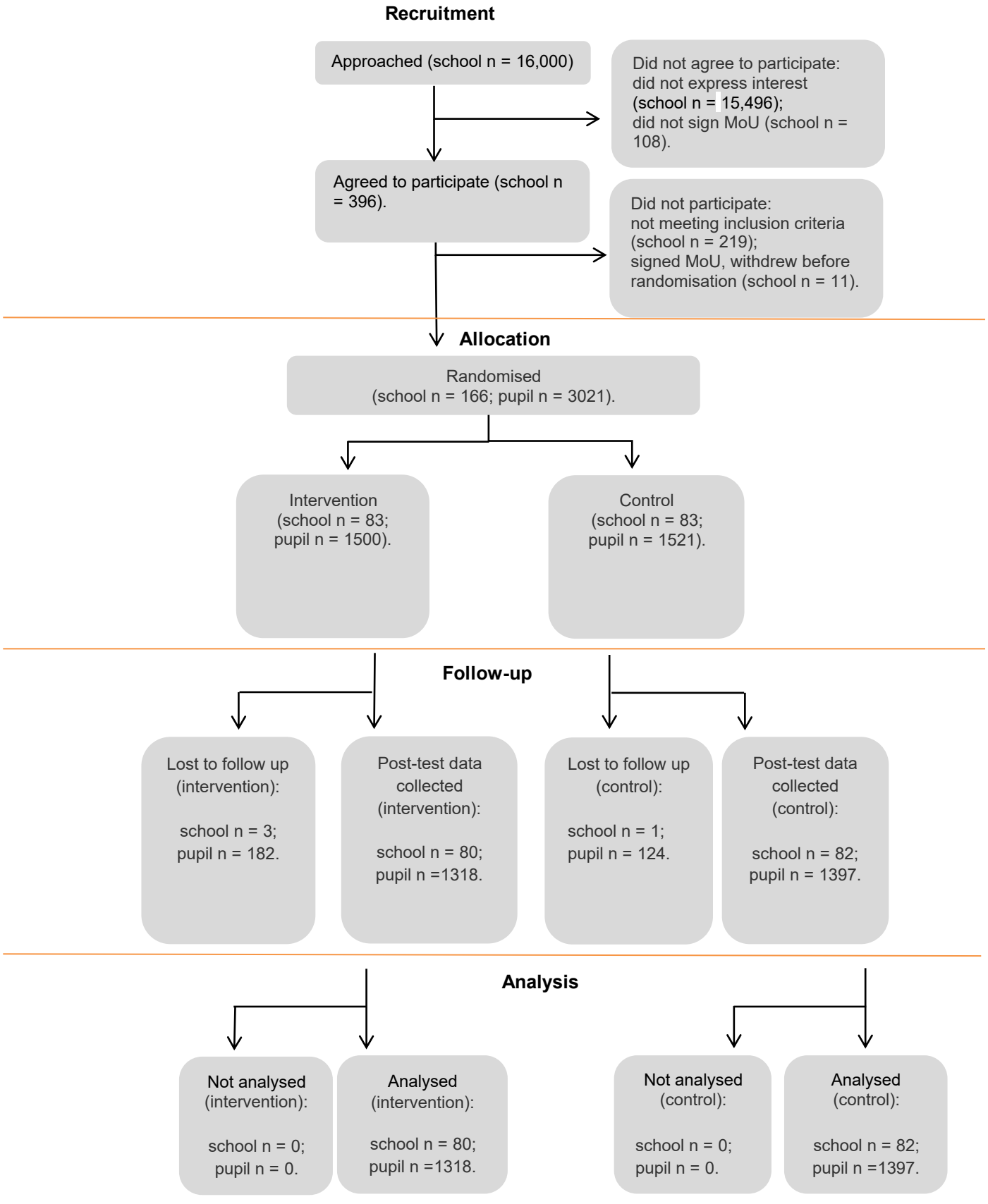
Table 6: Evaluation timeline

Dates	Activity	Staff responsible/leading
Oct 22	Set-up meetings and IDEA workshop	All
Nov–Dec 22	Ethical approval Draft MoU, consent and information forms Design IPE instruments Evidence review	SHU
Feb–Jun 23	Recruitment (including school data collection)	Speech Link
Mar 23	Protocol Trial registration	SHU
Apr–Jul 23	Pupil data collection from schools	SHU
Jul 23	Pre-intervention teacher survey Training test administrators	SHU
Sep–Nov 23	Baseline testing	SHU
Nov 23	Randomisation	SHU
Nov–Dec 23	Teacher training/observations	SHU/Speech Link/schools
Jan–May 24	Intervention delivery	Speech Link /Schools
Feb–May 24	Conduct IPE school visits	SHU/schools
Mar 24	NPD application	SHU
May 24	Statistical Analysis Plan published	SHU/EEF
Jun–Jul 24	Outcome testing Post-intervention teacher survey	SHU/schools
Sep–Jan 25	Data analysis and report writing	SHU

Impact evaluation results

Participant flow including losses and exclusions

Figure 3: Participant flow diagram



The MDES estimates at protocol and randomisation were discussed above (see Methods: Sample Size). It was also noted that with an analysis sample size of 162 schools the MDES for the overall sample was unchanged at 0.20. For the FSM subgroup it was 0.23, compared to 0.22 at randomisation. These figures rely on the assumptions from the protocol stage. However, the availability of baseline and outcome test data at the analysis stage provides the opportunity to revisit the original calculations and check the protocol assumptions against the observed data.

The protocol power calculations used estimates of the pupil and school-level pre/post-test correlations that proved to be more conservative than the observed values. The protocol pupil-level correlation assumptions were accurate but the analysis school-level figures (0.79 overall, 0.76 FSM) were far higher than expected (0.20). School-level correlation estimates were not stated in the study used for guidance on the sample size parameters (Dimova 2020). The protocol therefore used a low figure to avoid overestimating trial sensitivity at the design stage. The ICC was also lower than expected for the overall sample (0.16) but particularly for the FSM subgroup (0.10). Taken together, this means that the trial had the sensitivity to detect smaller effect sizes than anticipated despite attrition reducing the sample size. For the whole study sample, the MDES at the analysis stage was 0.12, for the FSM subgroup it was 0.14. Table 7 presents the figures in full.

Table 7: Minimum detectable effect size at different stages

		Protocol		Randomisation		Analysis	
		Overall	FSM	Overall	FSM	Overall	FSM
MDES		0.20	0.22	0.20	0.22	0.12	0.14
Pre-test/post-test correlations	Level 1 (pupil)	0.75	0.75	0.75	0.75	0.78	0.77
	Level 2 (school)	0.20	0.20	0.20	0.20	0.80	0.80
ICC	Level 2 (school)	0.20	0.20	0.20	0.20	0.16	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?		2	2	2	2	2	2
Average cluster size		20	5	18	5	17	6
Number of schools	Intervention	85	85	83	83	80	80
	Control	85	85	83	83	82	82
	Total:	170	170	166	166	162	162
Number of pupils	Intervention	1700	425	1500	415	1318	437
	Control	1700	425	1521	415	1397	456
	Total:	3400	850	3021	830	2715	893

Attrition

The trial recruited 166 schools, with 3,021 pupils completing baseline testing. This is the figure used to calculate attrition, which is ordinarily expressed as the percentage of pupils randomised that were analysed. A total of 2,715 pupils from 162 schools completed outcome assessments in June and July 2024, giving an attrition rate of 10.1%. Attrition in intervention schools (12.1%) was higher than in control schools (8.2%). This difference can be attributed to higher school-level attrition in the intervention group, where three of the 83 schools did not agree to take part in outcome testing. Only one of the 83 control schools did not take part in outcome testing. Schools did not specify their reasons for withdrawing. The most common reason for pupil attrition was leaving the school (105 pupils), followed by absence on the day of the endline assessment visits (72), inability to take part (three), and assessor running out of time (two pupils). For 134 pupils, no reason was provided, although 76 of these were at schools that withdrew from the study. Assessors were asked to return to schools to complete mop-up assessments if at least two pupils were missing, but some pupils were absent for extended periods and were not assessed.

Table 8: Pupil-level attrition from the trial (primary outcome)

		Intervention	Control	Total
Number of pupils	Randomised	1500	1521	3021
	Analysed	1318	1397	2715
Pupil attrition (from randomisation to analysis)	Number	182	124	306
	Percentage	12.1%	8.2%	10.1%

Pupil and school characteristics

The trial aimed to recruit at least half the schools from Education Investment Areas, and this target was exceeded as 109 of the 166 (66%) recruited were from these areas. Education Investment Area status was included as a stratifier, so this was balanced between intervention (65%) and control (66%). The stratification also ensured good balance on the other two variables used in that process. A very similar percentage of schools in both treatment groups reported using other relevant interventions (intervention 66%, control 69%). Frequency of using external speech and language therapy support was also well balanced, with 55% of intervention schools reporting that such support was used at least every half term, compared to 54% of control schools.

On other school characteristics that were not used as stratifiers, the sample is also well balanced. The percentage of schools classed as local authority maintained is almost equal (intervention 61%, control 60%). In both the intervention and control groups, 76% of schools were rated ‘good’ by OFSTED. The percentage of rural schools was also very similar (intervention 13%, control 11%). Intervention schools were somewhat larger than control schools, with an average of 363 pupils compared to 290, but the percentage of FSM pupils was nearly the same (intervention 34%, control 35%), as was the average number of points achieved on KS1 SATs.

Scores on the baseline assessments were slightly imbalanced. Control pupils obtained slightly higher scores on each of the constituent scales used. Effect sizes, calculated by dividing the mean difference by the standard deviation, range from 0.01 to 0.03. Intervention and control confidence intervals overlap for three of the four scales, although not for RAPT Information. When totalled, this produces an effect size of -0.10 for the combined baseline measure. As all baseline assessments took place prior to randomisation, this is likely to have occurred due to chance. All impact evaluation analysis models control for baseline scores as described in the methods section above, so the baseline difference between the treatment groups is accounted for in the results. Given the range of possible scores on the four measures (CELF-5 Sentence Comprehension, 0–26; CELF-5 Linguistic Concepts, 0–25; RAPT Information, 0–41; RAPT Grammar, 0–39), there is no evidence of floor or ceiling effects. Histograms for the four separate baseline scales and the combined language outcome measure are presented in Appendix G.

Table 9: Baseline characteristics of groups as randomised

School-level (categorical)	National-level mean	Intervention group		Control group	
		n/N (missing)	% (Count)	n/N (missing)	% (Count)
Not EIA		29/83	35% (29)	28/83	34% (28)
EIA		54/83	65% (54)	55/83	66% (55)
Does not use interventions		28/83	34% (28)	26/83	31% (26)
Uses relevant interventions		55/83	66% (55)	57/83	69% (57)
No external speech and language (S&L) support		8/83	10% (8)	9/83	11% (9)
Infrequent external S&L support		29/83	35% (29)	29/83	35% (29)
External S&L support at least half-termly		46/83	55% (46)	45/83	54% (45)
Academies/free schools	41.5%	32/83	39% (32)	33/83	40% (33)
Local authority	58.5%	51/83	61% (51)	50/83	60% (50)
Rural	28.8%	11/83	13% (11)	9/83	11% (9)
Urban	71.2%	72/83	87% (72)	74/83	89% (74)
OFSTED Outstanding	12.1%	8/83	10% (8)	6/83	7% (6)
OFSTED Good	79.3%	63/83	76% (63)	63/83	76% (63)
OFSTED Requires Improvement	7.9%	9/83	11% (9)	5/83	6% (5)
OFSTED Missing	-	3/83	4% (3)	9/83	11% (9)
School-level (continuous)	National mean (SD)	n/N (missing)	Mean (SD)	n/N (missing)	Mean (SD)
Total number of pupils	288 (194)	83/83	363 (209)	83/83	290 (160)
Percentage of FSM pupils	22.8 (15.11)	83/83	33.71 (14.1)	83/83	34.78 (14.6)
KS1 average points*	7.77 (0.44)	77/83(6)	7.59 (0.42)	74/83(9)	7.52 (0.44)
Pupil-level (categorical)	National-level mean	n/N	Mean	n/N	Mean
FSM pupils in analysis sample	21.9%	437/1318	5.5	456/1397	5.6
EAL pupils in analysis sample	22.8%	318/1318	3	242/1397	3
Pupil-level baseline test scores	Effect size	N	Mean (SD; CIs)	N	Mean (SD; CIs)
CELF Linguistic Concepts	-0.03	1500	16.01 (5.59; 15.72, 16.29)	1521	16.44 (5.32; 16.17,16.71)
CELF Sentence Comprehension	-0.03	1500	15.92 (6.16; 15.61, 16.23)	1521	16.43 (5.77; 16.14, 16.72)
RAPT Grammar	-0.01	1500	21.83 (6.68; 21.49, 22.17)	1521	22.08 (6.5; 21.76, 22.41)
RAPT Information	-0.03	1500	26.76 (6.2; 26.45, 27.08)	1521	27.56 (5.94; 27.26, 27.86)
Combined language (z-scores)	-0.10	1500	-0.05 (1.05; -0.10, 0.00)	1521	0.05 (0.94; 0.00, 0.10)

* KS1 tests were statutory English and maths assessments taken at the end of Year 2 (age 6–7) until 2023.

Outcomes and analysis

As discussed earlier in this report, Infant Language Link aims to improve pupil expressive and receptive language. It was therefore agreed during the inception stage that outcomes relating to both would be used in this evaluation. The developer states that the programme does not privilege expressive language over receptive language or vice versa, so a primary outcome was constructed that combines both.

The receptive language measures used were the Linguistic Concepts and Sentence Comprehension subtests from the Pearson CELF-5. The expressive language measure was the Renfrew Action Picture Test, which is scored in two separate domains, Information and Grammar, but administered as a single standalone test. These assessments were administered at baseline and endline. Descriptive statistics on the assessment results for the ITT analysis sample are presented in Table 10. Histograms can be found in Appendix G. The distribution of scores on all four measures became more skewed at endline as pupils achieved higher marks on the assessments overall. This led to a narrower dispersion of scores, as seen in the lower standard deviations at endline compared to baseline. There was no evidence of floor or ceiling effects at the extreme ends of the distribution, reflecting the age suitability of the chosen measures.

Table 10: Baseline and endline measures, ITT analysis sample

Measure	N	Mean	Std. dev.	Min	Max
Baseline					
CELF Linguistic Concepts	2,715	16.23	5.46	0	25
CELF Sentence Comprehension	2,715	16.22	5.96	0	26
RAPT Grammar	2,715	21.93	6.59	0	36
RAPT Information	2,715	27.12	6.08	0	39.5
Combined language measure	2,715	0	1	-4.08	2.10
Endline					
CELF Linguistic Concepts	2,715	19.10	4.56	0	25
CELF Sentence Comprehension	2,715	20.41	4.86	0	26
RAPT Grammar	2,715	24.45	5.75	0	37
RAPT Information	2,715	29.19	5.37	0	39.5
Combined language measure	2,715	0	1	-5.45	1.94

Primary analysis

Table 11 presents results from the impact evaluation analysis of all pupils on the primary outcome measure. All analyses were conducted with the full sample that took part in the endline assessments. Covariates in the headline model were pupil baseline score (school mean centred), school-level baseline score (grand mean centred), whether the school is in an Education Investment Area, uses any other relevant interventions (such as NELI, WellComm and Talk Boost), or uses external speech and language therapy support. The primary outcome measure was standardised to have a mean of zero and a standard deviation of one. The unadjusted mean score was -0.06 for intervention pupils and 0.05 for control pupils,

although control pupils also scored higher on the baseline assessments. Adjusted mean scores for the primary and secondary outcome are presented in Appendix C. The effect size was -0.01 standard deviations, equivalent to zero months of additional progress for intervention pupils compared to the control group. The lower and upper confidence intervals equate to minus one month of progress and one additional month of progress respectively (lower 95% CI: -0.097; upper 95% CI: +0.072). The p-value was 0.768, indicating a relatively high probability that the model estimates were observed due to statistical uncertainty. This shows no evidence of the programme having an effect on pupil language development as measured by the primary outcome.

Table 11: ITT analysis primary outcome

	Unadjusted means				Effect size		
	Intervention group		Control group				
Outcome	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n (intervention; control)	Hedges g (95% CI)	p-value
Combined language measure	1318 (0)	-0.06 (-0.113; 0)	1397 (0)	0.05 (0.004; 0.104)	2715 (1318, 1397)	-0.01 (-0.10; 0.07)	0.768

Secondary analysis

The secondary outcomes are the four scales combined to create the primary outcome. Each of these measures was used as an outcome in a separate model to examine the impact of the programme on the different areas of language that it aims to improve.

Two measures of receptive language were used, both drawn from the CELF-5 assessment. On the first of these, Linguistic Concepts, the unadjusted mean outcome test scores in the intervention (18.89) and control (19.29) groups were almost equal, although the baseline scores were higher in control schools as highlighted earlier (Table 9). The effect size of -0.01 (CIs -0.087, 0.063, p = 0.750), shows no evidence of difference between the two treatment conditions. The point estimate is equivalent to no additional progress for intervention pupils compared to the control group, and the upper and lower confidence intervals equate to minus one month and one additional month of progress. For Sentence Comprehension, the mean outcome scores were nearly equal (intervention = 20.39, control = 20.44); a small positive effect (0.06) was found, equivalent to one month of additional progress. The confidence intervals include zero (-0.015; 0.136), and the lower bound equates to no additional progress, indicating uncertainty over the positive finding.

The pupil assessment of expressive language, RAPT, comprises two separate scales, Information and Grammar. For both of these secondary outcomes, the effect size is -0.07, a small negative effect, equivalent to one month less progress for intervention pupils. In both cases, the confidence intervals straddle zero, although they are slightly wider for RAPT Information (-0.196; 0.058) where the estimates range from equivalent to one month of additional progress to three months negative progress, than for Grammar (-0.174; 0.031), with estimates ranging from no additional progress to minus two months. For the former, the p-value is larger (0.287, compared to 0.173). These analyses suggest that the intervention is not associated with improvements in pupil expressive language as measured by the RAPT.

Table 12: ITT analysis secondary outcomes

	Unadjusted means				Effect size		
	Intervention group		Control group				
Outcome	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n (intervention; control)	Hedges g (95% CI)	p-value
CELF Linguistic Concepts	1318 (0)	18.89 (18.64; 19.147)	1397 (0)	19.29 (19.057; 19.522)	2715 (1318; 1397)	-0.01 (-0.087; 0.063)	0.750
CELF Sentence Comprehension	1318 (0)	20.39 (20.119; 20.656)	1397 (0)	20.44 (20.187; 20.687)	2715 (1318; 1397)	0.06 (-0.015; 0.136)	0.117
RAPT Information	1318 (0)	28.75 (28.453; 29.052)	1397 (0)	29.6 (29.333; 29.875)	2715 (1318; 1397)	-0.07 (-0.196; 0.058)	0.287
RAPT Grammar	1318 (0)	24.14 (23.825; 24.451)	1397 (0)	24.75 (24.452; 25.049)	2715 (1318; 1397)	-0.07 (-0.174; 0.031)	0.173

Analysis in the presence of non-compliance

The developer provided data on the three indicators which were combined into a single compliance measure as described above (see Evaluation Design). Three of the 83 schools allocated to the intervention group withdrew from the study prior to endline testing and are not included in these figures. The total number of schools achieving compliance on each indicator is displayed in Table 13. Attendance at the training sessions and completion of initial pupil screening are both treated as binary indicators. Completion of targeted groups allows for part compliance to be awarded for schools that delivered a certain number of sessions, as detailed above. This was the measure on which compliance was the lowest, with 47 schools attaining full compliance and a further five reaching part compliance.

Table 13: Compliance indicators

Compliance indicator	Yes	No
Staff attended all training sessions	72	8
Initial language screening completed with all pupils	68	12
Completion of targeted groups (eight sessions in each of the three groups: listening; concepts and instructions; language structure)	48	32
Full compliance (all three criteria above met)	47	
Part compliance (six of eight listening group sessions and all eight sessions in one language group completed, plus staff training and pupil screening criteria met)	5	

To explore whether compliance was related to endline outcome scores, and whether compliance was endogenous, 2SLS regression was used via the ivregress command in Stata17. The correlation between the binary full compliance indicator and the primary outcome is weak (-0.04) and the F-statistic and p-value (F = 0.094, p = 0.76) indicate that compliance is not endogenous. A selection of school-level variables that were included in the baseline balance analysis (rural/urban status, school type, OFSTED rating, number of pupils, KS1 average) were added to a second model as a sensitivity analysis. Again, the results (F = 0.009, p = 0.93) indicate that compliance is not endogenous. This suggests that compliance was not correlated with the additional school-level variables. Finally, this was repeated with pupils at the five schools achieving part

compliance being treated as compliant cases. The results (F = 0.265, p = 0.61) again suggest that compliance is not endogenous.

Table 14: Results from 2SLS models

Compliance indicator	Coefficient	p-value	Lower 95% CI	Upper 95% CI	N
Full compliance (F = 0.094, p = 0.76)	-0.03	0.676	-0.169	0.109	2715
Full compliance with additional school variables (F = 0.009, p = 0.93)	-0.03	0.679	-0.175	0.114	2316
Part compliance (F = 0.265, p = 0.61)	-0.03	0.676	-0.152	0.099	2715

The effects of non-compliance were then examined through per-protocol analysis (repeating the ITT analysis without pupils in non-compliant intervention schools) and by calculating a CACE estimate. Following Bloom (1984:232), CACE was calculated by dividing the headline ITT effect size (-0.02) by the proportion of pupils in the intervention group deemed compliant (785/1318 = 0.596). With the effect size from both of these approaches (-0.02, see Table 15 and Equation 5) very similar to the headline ITT effect size (-0.01), equivalent to zero months of additional progress, it is reasonable to conclude that non-compliance is unlikely to have substantially altered the trial results.

Table 15: Per protocol analysis

	Unadjusted means				Effect size		
	Intervention group		Control group				
Outcome	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n (intervention; control)	Hedges g (95% CI)	p-value
Combined language measure	785 (0)	-0.07 (-0.138; 0.003)	1397 (0)	0.05 (0.004; 0.104)	2182 (785; 1397)	-0.02 (-0.122; 0.081)	0.693

Equation 5: CACE calculation

$$CACE\ estimate = \frac{ITT\ estimate}{proportion\ of\ pupils\ in\ compliant\ schools} = \frac{-0.01}{0.596} = -0.02$$

Missing data analysis

Pupil attrition in this trial was 10.1%. Of the 3,021 pupils to complete the baseline assessments, 2,715 also completed outcome testing at the end of the delivery period. Of the 306 pupils that did not complete endline assessments, 76 were enrolled at one of the four schools (three intervention, one control) that withdrew from the study and did not allow any endline testing and others were missed due to absence, moving schools, or other reasons (see Attrition).

To examine patterns in the missing data, a multilevel logistic regression model with a binary outcome identifying when outcome data is missing ('1') or not ('0') was estimated using the same covariates as the headline ITT model. The results are presented in Table 16. This model was then replicated with only participants at the 162 schools that took part in the endline outcome testing, to focus on pupil-level attrition. The first model shows that pupils at schools located in an Education Investment Area are less likely to have missing endline data (odds ratio = 0.23), and none of the other covariates are statistically significant at the p < 0.05 level. This finding also emerged from the second model, excluding pupils at the four schools that did not take part in endline testing, although the odds ratio was closer to one (0.37). In this model, lower values on the school baseline covariate were associated with a lower likelihood of missing outcome data (odds ratio = 0.70). No other variables in the model were associated missing outcome data at a statistically significant level (< 0.05).

Having found relationships between these two variables and missing endline data, it was assumed that data was missing not at random, and a further multilevel logistic regression model was estimated to examine the effect of the other school-level variables listed in Table 9. None of these additional variables demonstrated a statistically significant relationship with whether the endline data was missing (at $p < 0.05$), so it was decided not to include them in the next stage of the missing data analysis, multiple imputation.

Table 16: Missing data analysis

	Models with ITT covariates		Models with ITT covariates and additional school covariates	
	All pupils	Analysis schools	All pupils	Analysis schools
Allocation	1.48 (0.343)	1.20 (0.180)	1.60* (0.351)	1.25 (0.197)
Centred school baseline	0.82 (0.211)	0.70* (0.116)	0.73 (0.193)	0.71 (0.133)
Centred pupil baseline	0.98 (0.072)	0.98 (0.072)	0.99 (0.080)	0.991 (0.080)
External SLT support termly or less (reference none)	0.92 (0.391)	1.26 (0.391)	1.62 (0.675)	1.242 (0.385)
External SLT support half-termly or more (reference none)	1.41 (0.575)	1.78 (0.532)	1.84 (0.733)	1.47 (0.435)
Using relevant interventions (reference not)	0.95 (0.231)	0.83 (0.129)	1.13 (0.280)	0.915 (0.158)
EIA (reference not EIA)	0.23*** (0.040)	0.37*** (0.058)	0.32*** (0.059)	0.44*** (0.068)
Percentage FSM			1.00 (0.001)	1.01 (0.006)
Number of pupils			1.00 (-0.001)	1.00 (-0.001)
KS1 average score			0.85 (0.233)	0.92 (0.179)
Ofsted ‘outstanding’ (reference ‘good’)			0.74 (0.318)	0.98 (0.303)
Ofsted ‘requires improvement ‘(reference ‘good’)			1.03 (0.375)	1.08 (0.265)
Urban (reference rural)			0.84 (0.294)	0.98 (0.259)
Free schools (reference academies)			1.40 (1.044)	1.21 (0.593)
Local authority maintained schools (reference academies)			0.81 (0.190)	0.75 (0.122)
Constant	0.12*** (0.051)	0.09*** (0.030)	0.51 (1.171)	0.23 (0.374)
N pupils	3,021	2,945	2,546	2,509
N schools	166	162	140	138

Logistic regression models, odds ratios with standard errors in parentheses. *** $p < 0.001$, ** $p < 001$, * $p < 0.05$.

The multiple imputation included the full set of covariates from the headline ITT analysis. These variables were used to estimate outcome test scores from the 306 pupils that were baselined but did not participate in outcome testing. The procedure was performed in Stata 17 using the mi impute command, with ten imputations specified. Each of the imputed outcome variables was entered into a multilevel model to replicate the headline ITT analysis. Effect sizes ranged from 0 to -0.03, compared with -0.02 for the main ITT sample, with confidence intervals on both sides of zero and p-values above 0.4 in each instance. The similarity of the effect sizes from the imputed outcome variables and the headline ITT model suggests that missing data did not meaningfully alter the results of this trial.

Subgroup analyses

Among the 1,318 pupils in the intervention group that completed endline outcome assessments, 139 were selected for targeted support due to having mild to moderate speech and language needs. This was determined by their score on the Infant Language Link screening conducted with all pupils in intervention schools at the start of the delivery period. Results from the pupil screening were provided by the developer as part of its monitoring data. The screening score correlated with the baseline score from the evaluation ($R = 0.67$, $p < 0.001$, $n = 1180$), suggesting that both measures were to some extent related to the same underlying concept.

It is worth reiterating that the evaluation sample was restricted to 20 pupils per school and the targeted subgroup for the analysis here was drawn from that selection. Of the 80 intervention schools completing endline outcome assessments, 22 had no pupils in the evaluation sample categorised by the initial screening as requiring targeted support. A further 16 schools had only one pupil. The mean number of targeted pupils per school was two and the maximum was six. The pupil screening also identified which children should receive specialist or universal support, but these pupils were not treated as part of the targeted subgroup at the recommendation of the developer.

A comparison sample was drawn from the control group using nearest neighbour matching through the teffects command in Stata 17, which was specified to select a subset of cases with similar values on the baseline score, as the screening assessment score was not available for control pupils. The resulting comparison sample was slightly smaller (129 cases) but had values on the combined baseline measure (mean = -0.651, SD = 0.891) that were similar to the targeted subgroup (mean = -0.698, SD = 0.903). Table 17 shows the baseline scores across all measures. Table 18 shows the results for analysis of the primary outcome with the pupils identified by the Infant Language Link screening as requiring additional support. The small negative effect size (-0.05) suggests that control pupils made greater gains in attainment over the evaluation period, equivalent to one month of additional progress compared to the intervention group. The confidence intervals (CIs -0.244; 0.137, $p = 0.579$) range from equivalent to three months of negative progress to two months of additional progress for intervention pupils targeted for further support. The p-value from this model suggests considerable uncertainty over the findings owing to the relatively small point estimate and the small sample size.

Table 17: Descriptive statistics of targeted subgroup and comparison sample

Outcome	CELF LC	CELF SC	RAPT Grammar	RAPT Information	Combined baseline
Targeted intervention mean	12.50	12.22	18.71	24.32	-0.70
SD	5.12	5.86	6.19	5.59	0.90
N	139	139	139	139	139
Matched comparison mean	13.02	12.87	18.25	24.44	-0.65
SD	5.52	5.65	6.51	6.37	0.89
N	129	129	129	129	129

Table 18: Primary outcome for targeted subgroup

	Unadjusted means				Effect size		
	Intervention group		Control group				
Outcome	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n (intervention; control)	Hedges g (95% CI)	p-value
Combined language measure	139 (0)	-0.61 (-0.757; -0.454)	129 (0)	-0.47 (-0.655; -0.279)	268 (139; 129)	-0.05 (-0.24; 0.14)	0.579

Table 19 shows the results from the headline analysis repeated on the sample of pupils defined as disadvantaged by the EVERFSM_6_P indicator in the NPD. A total of 893 pupils (intervention n = 437, control n = 456) were included in this analysis, amounting to 33% of the overall sample. The FSM status of one pupil was missing. The effect size for the primary outcome was -0.02. An additional model was estimated using the full analysis sample but with FSM status and an interaction term between FSM status and treatment allocation both included as covariates. The effect size was zero. With the confidence intervals again spanning both sides of zero this model does not show any association between taking part in the programme and improved attainment for FSM pupils.

Table 19: FSM pupils, primary outcome

	Unadjusted means				Effect size		
	Intervention group		Control group				
Outcome	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n (intervention; control)	Hedges g (95% CI)	p-value
Combined language measure – FSM subgroup	437 (0)	-0.22 (-0.332; -0.127)	456 (1)	-0.05 (-0.140; 0.030)	893 (437; 456)	-0.02 (-0.13; 0.09)	0.730
Combined language measure – FSM*Allocation interaction	1318 (0)	-0.06 (-0.113; 0)	1396 (1)	0.05 (0.003; 0.103)	2714 (1318; 1396)	0 (-0.10; 0.10)	0.987

As the programme focuses on language, further subgroup analysis was conducted on pupils defined as using English as an additional language (Table 20). There were 560 pupils categorised as EAL in the NPD, a higher number in intervention schools (n =318, 24%) compared to the control group (n =242, 17%). This difference is likely to have emerged at random as data on pupil EAL status was not available to the evaluators until the analysis stage. School-level EAL numbers were not used as a stratifier in the allocation process, creating the possibility of imbalance on this.

The mean scores on the primary outcome shown here are lower than the mean scores for the overall sample (Table 11). The main finding from this analysis is that even among EAL pupils there is no discernible effect of the intervention on pupil language ability as measured by the primary outcome, with an effect size of zero (upper CI: 0.136; lower CI: -0.127; p value: 0.946).

Table 20: EAL pupils, primary outcome

	Unadjusted means				Effect size		
	Intervention group		Control group				
Outcome	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n (intervention; control)	Hedges g (95% CI)	p-value
Combined language measure	318 (0)	-0.75 (-0.849; -0.569)	242 (0)	-0.58 (-0.695; -0.400)	560 (318; 242)	0 (-0.136; 0.127)	0.946

Additional analyses and robustness checks

Table 21 shows the full results from the multilevel models on the ITT sample using the primary outcome. Model 1 shows that pupils in intervention schools obtained slightly lower marks on the endline test than counterparts in control schools when controlling for no other covariates (B = -0.11). However, as the mean baseline test score was higher in control schools (see Table 9), when school and pupil baseline covariates are added in Model 2, the 'allocation' coefficient diminishes (B = -0.02). Model 3, which also includes the stratification variables, produces a very similar allocation coefficient (B = -0.01). However, these categories were evenly distributed between the intervention and control groups due to their inclusion as stratifiers in the randomisation, hence the negligible change in allocation coefficients between Models 2 and 3. The variance figures used to calculate the effect sizes are displayed in Table 23.

Table 21: Results from multilevel models of primary outcome with ITT sample

	Model 1	Model 2	Model 3
Allocation	-0.11 (0.072)	-0.02 (-0.044)	-0.01 (0.043)
School Baseline		0.82 (-0.05)***	0.82 (-0.05)***
Baseline		0.77 (-0.013)***	0.77 (-0.013)***
Use of external SLT support low - termly or less			0.07 (-0.08)
Use of external SLT support high - half-termly or more			0.08 (-0.08)
EIA Selection Status			0.099 (-0.045)*
Using other relevant interventions			0.001 (-0.05)
Constant	0.05 (-0.05)	-0.01 (-0.03)	-0.14 (0.08)
N pupils	2,715	2,715	2,715
N schools	162	162	162
Df	1	3	7
Chi^2	2.549	4086.75	4103.92

Standard errors in parentheses. *** p < 0.001; ** p < 0.01; * p < 0.05.

An alternative method of combining the four scales comprising the primary outcome is to use SEM. As discussed earlier in the report, this was originally intended for the primary outcome analysis but poor model fit with the baseline data prompted a change in approach. These results should therefore be interpreted with caution. The process for creating this measure using SEM is detailed fully in Appendix I. Table 22 shows the results from replicating the headline ITT model with this variable, which has a mean value of zero, a standard deviation of 2.57, and values ranging from -13.84 to 5.39 as the outcome. The effect size (g = -0.05; CIs -0.150, 0.056; p = 0.372) suggests that the programme is associated with one month

less progress in pupil language ability as measured by the outcomes used in this trial, with the caveat that the confidence intervals are on both sides of zero, suggesting a degree of uncertainty. The results from this model are perhaps unsurprising given that three of the four separate scales showed small negative effect sizes.

Table 22: ITT sample with combined language outcome derived from SEM

	Unadjusted means				Effect size		
	Intervention group		Control group				
Outcome	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n (intervention; control)	Hedges g (95% CI)	p-value
Combined language measure	1318 (0)	-0.17 (-0.317; -0.03)	1397 (0)	0.16 (0.034; 0.294)	2715 (1318; 1397)	-0.05 (-0.15; 0.056)	0.372

Infant Language Link is designed to support the language development of children with identified language difficulties and those with below average language ability. The developer does not expect the programme to make a substantial difference for children who are already within or above the average language ability range. As the evaluation sample for this trial was drawn from the whole participating class in each school, it is reasonable to assume that pupils across the full range of ability are included. Further sensitivity analyses have been conducted to examine the effect this may have had on the trial results. It is not possible to compare the sample to any national benchmarks as no suitable data exists. Statutory assessments at age five are scored as binary measures and the learning aims do not correspond directly with the aims of Infant Language Link. It was therefore decided that the number of pupils in the analysis sample with baseline test scores at or above the median value in all four language outcome scales should be examined. Table 23 shows that fewer than one in four pupils were at or above the median on all four language outcome scales at baseline. In other words, three-quarters of participating pupils achieved a score that was in the lower half of the distribution on at least one of the four baseline measures. The figures are very similar when the intervention and control groups are considered separately.

Table 23: Number of pupils achieving median score on all four baseline measures (analysis sample)

	Median or above on all four baseline measures	Other pupils
Control N	344	1,053
Control row %	24.62	75.38
Intervention N	310	1,008
Intervention row %	23.52	76.48
Total	654	2,061

As the programme is designed to benefit pupils with below average language ability, the headline intention to treat model has been repeated including only pupils in the lower half of the ability range as measured by scores on the combined language primary outcome at baseline. Table 24 displays the results. The point estimate is 0.02 (compared to -0.01 for main primary outcome model), equivalent to no months of additional progress. The confidence intervals (-0.092; 0.129) and p value (0.745) both reflect that the trial was not powered to detect a difference of this magnitude. As such, these results should be regarded with caution.

Table 24: ITT analysis including only pupils achieving below median on combined baseline measure

	Unadjusted means				Effect size		
	Intervention group		Control group				
Outcome	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n (intervention; control)	Hedges g (95% CI)	p-value
Combined language measure	689 (0)	-0.62 (-0.699; -0.538)	668 (0)	-0.5 (-0.579; -0.427)	1357 (689; 668)	0.02 (-0.092; 0.129)	0.745

Estimation of effect sizes

The headline effect size of the ITT model (-0.02) was calculated by dividing the allocation coefficient, which is the mean difference between the intervention and control group outcome scores controlling for all covariates (-0.01), by the unconditional standard deviation (1.00), derived from the total variance from the outcome only model (1.00). The formula was presented above (Equation 3).

Estimation of ICC

The ICC for the outcome-only model that provided the school- and pupil-level variance for the primary outcome analysis with the main ITT sample was 0.160. For the full model including all covariates, used to generate the coefficient for the allocation variable that provides the numerator for the ICC equation, the ICC was 0.136 (at randomisation, 0.20 was assumed). The formula was presented above (Equation 2). These figures show lower ICC values for each analysis model than were assumed at protocol, where conservative estimates were made in view of the high ICC figures reported in a previous EEF trial in this area (Dimova et al., 2020).

Table 25: ICC statistics from analysis of primary outcome (pupils clustered into schools)

Model	School variance	Pupil variance	Total variance	ICC
Outcome only	0.016	0.084	0.100	0.160
With baseline	0.056	0.339	0.395	0.142
Full model	0.053	0.339	0.392	0.136

Implementation and process evaluation results

The IPE data collection was carried out during the spring and summer terms of the 2023/2024 school year. Results are reported in this section, which is structured according to the research questions set out above (page 11). The data sources and analysis methods are detailed earlier in this report.

IPE RQ1 To what extent was Infant Language Link implemented with fidelity and as intended?

This section presents evidence of reported and observed implementation against the agreed compliance indicators and theory of change inputs. It is organised under the subheadings that comprised the research question. The main themes are staff attendance at training sessions, initial pupil screening, use of helpdesk support, implementation of whole-class strategies, completion of progress measures and improvement target setting, and use of the programme with pupils outside of the evaluation sample.

Key findings for implementation fidelity:

- the programme was implemented with moderate fidelity: key components were delivered as intended but with less consistency in the implementation of the whole-class component;
- staff generally attended the required training and followed the prescribed protocols with greater adherence to the targeted group component; and
- not all intervention schools managed to complete the initial pupil screening, and a significant proportion did not deliver enough targeted sessions to achieve full compliance.

Staff engagement was high, and staff valued the programme, but some elements, such as use of the full range of Infant Language Link materials and follow-up support, were inconsistently applied.

Have teachers, TAs, and the SENCO attended the training sessions?

Webinar training sessions for staff delivering the programme were mandatory. Specifically, the project lead (whether the SENCO or headteacher) was required to attend three webinars, with Year 1 teachers attending the first and second of these sessions and TAs attending the first and third. Attendance was necessary for schools to be classed as compliant. Of the 83 schools randomly allocated to the intervention group, 72 fulfilled this requirement; eight, however, attended none of the training. For schools with partial attendance, it was the teacher or TA (or both) who missed sessions. The full school-level figures are provided above in the impact evaluation Results section (see Analysis in the Presence of Non-Compliance).

All staff interviewed as part of the evaluation indicated that they had either attended the synchronous online webinar training sessions or viewed recordings. The webinars and recordings were described as helpful, comprehensive, and high quality. At the same time, the webinar training was seen as complementary to the documents, videos, and other forms of support available through the online platform and the helpdesk.

Having the sessions recorded was perceived as particularly useful by staff. In some cases, viewing the recorded sessions was the only option due to staff availability. Several respondents described revisiting the recordings multiple times to make sense of the content and to facilitate note taking:

> *'Yes, and going back to them as well (…) Myself and the headteacher watched the first one together to make sure that we knew what we were doing and then, like I said, we kind of divvied it up so that she would look at the class teacher one and I would look at the TA one and make sure that we knew what we were doing and then I have since been back and looked at the teacher one as well to make sure that everything is happening' (SENCO interview).*

Many interviewees reported viewing the training sessions together with other colleagues involved in the programme. This was particularly helpful in promoting discussion around the approach to delivery and in developing a shared understanding.

One teacher reported sharing their notes from the webinar training with the Year 2 teacher, indicating the potential to influence practice beyond the year groups directly taking part.

The SENCOs and TAs interviewed were, overall, positive about the training, saying that the webinars provided a clear overview of the project and sufficient information about the technical side of the platform and how to work with the various resources. However, interviews with the teachers responsible for the implementation of the whole-class component of the programme highlighted how the training aligned with or enhanced existing classroom strategies, but many mentioned that it mostly reaffirmed existing practices.

> *'I think that breaking it down into step by step instructions is something that we implement from the Rosenshine principles, and oracy is something that has been the focus for the past couple of years, so it kind of has been in place, but it still fits within that. … it ran alongside it, so it's not something that's separate from it, it's kind of like woven into it, if that makes sense. All those strategies are still being implemented and put into place' (teacher interview).*

> *'Definitely, in the broad terms it's stuff that I already did in my teaching. But there was some, like, really good reminders in there and prompts of how to support these different aspects' (teacher interview).*

The interview data thus suggests that for teachers the new learning from the webinars was more limited, even if the materials were perceived as adding useful implementation strategies. Moreover, while the webinars were appreciated, there was a notable demand for more interactive or practical learning experiences, suggesting this might enhance the effectiveness of the training. This included requests for opportunities for training and reflection during the implementation period to avoid frontloading all the information and to check understanding.

One respondent indicated that there are limitations to the usefulness of the webinars when they are delivered prior to commencing the programme—that they would have appreciated a follow-up session or some other form of ongoing support during the delivery period, where staff would be receiving the training with knowledge of the programme through implementing it in practice:

> *'The webinars kind of talked you through processes but you weren't yet in the cycle of doing it. So it was useful, but then really what I think that I've really learnt by doing rather than the listening bit, so it was kind of a limited effectiveness because of that I suppose' (SENCO interview).*

This 'learning through doing' aspect was also reinforced by one teacher who emphasised the value of seeing another teacher modelling the strategies in practice:

> *'I would have liked it more practical, so maybe seeing a session, or somebody delivering that—as a class teacher, how is another class teacher doing that? … So maybe watching that, seeing a model, would have been a little bit better. I know with video, everything is technology now, but just seeing it practically' (teacher interview).*

Echoing the point made by one SENCO regarding the value of reflecting on the process while in the cycle of doing it, another interviewee thought it would be valuable to have an opportunity for reflecting on progress midway through the programme:

> *'The other thing that I think would be really useful is almost to have a midpoint like whole forum … we had the opportunity to maybe have a breakout room within that meeting, to chat to another teacher about how their experience is going. Or just as a kind of midpoint of, "Right, it's April, what's been difficult, what do you find useful, what hasn't been going well, how could we support you?" … but it is to almost have an opportunity to have time to discuss' (teacher interview).*

Overall, the webinar training sessions were well received and the majority of staff met the compliance requirements in completing the training necessary to deliver the programme. There was, however, an indication in the interview data that staff would have liked a reflection and practice-sharing opportunity during the delivery period as well as illustrative examples as part of the training, modelling the delivery of the Infant Language Link core strategies.

Have teachers made use of the Infant Language Link helpdesk for implementation support?

Of the 80 teachers in intervention schools at the end of the study, 44 responded to the post-intervention survey, 15 of whom (34%) indicated that they had contacted the Infant Language Link helpdesk. A number of school staff interviewed indicated they never had any reason to use this support. Those who had used the helpdesk viewed it positively, with ten of the 15 survey respondent users (66%) rating the advice as extremely effective or very effective. From the fieldwork interviews, queries directed to the helpdesk included:

- how to deal with pupils leaving or joining the school;
- children with special needs and how and whether they should be included;
- issues with accessing the webinar training;
- IT related issues;
- setting up pupils on the Infant Language Link system;
- querying the order of the targeted intervention groups: which should be delivered first—listening, concepts and instructions, or language structure.

On a few occasions in interviews staff mentioned queries that were resolved internally through discussion with the SENCO or project lead at the school. Staff gave feedback that the helpdesk support team responded to queries promptly, responded to emails as well as phone calls, and had generally been very helpful. One member of staff indicated they had contacted the helpdesk to gain clarification on what the whole-class provision should entail:

> *'One of the class teachers had got some questions around what that should look like—because a lot of the things we already do as part of our Quality First teaching offer' (SENCO interview)*.

It appears that the above class teacher found it challenging to differentiate between their current practice and the strategies described in the Infant Language Link whole-class approach. This was also a persistent theme in other class teachers' responses. This issue also affected how teachers perceived the effectiveness of the webinar training (see previous section) as well as to what extent the intervention improved teachers' understanding and skills around oral language development, as will be discussed under IPE RQ2.

Have teachers used the screening tool to screen all pupils in the class and identify pupils requiring support?

Monitoring data collected through the Infant Language Link database indicates that 68 of the 80 intervention schools completed screening with all pupils and that 12 schools did not complete the screening fully (see Table 13, Compliance Indicators). Teaching staff and SENCOs in all ten schools visited as part of the IPE confirmed in interviews that screening was carried out with all children selected for outcome testing. In some cases, the full class was screened rather than limiting it to the children selected for the evaluation.

Schools were expected to complete all pupil screening prior to the Christmas break in order to identify pupils eligible for targeted support. Of the ten schools visited, four confirmed in interviews that they had screened all children by then; the other six schools indicated that they had struggled to fit in all screening during this timeframe but they all completed the remaining assessments shortly after the school break and in time to commence targeted interventions. Reasons cited for not completing all screening in the expected timeframe included staff sickness, staff availability, and children going on holiday toward the end of term. The trade-off between these challenges and the perceived benefits of the screening will be discussed in greater detail in IPE RQ3.

Have teachers used the whole-class resources and implemented the core strategies in every lesson?

In the post-intervention survey, 38 of 42 teacher respondents (90.5%) reported using the Infant Language Link whole-class resources. As no responses were received from 38 of the 80 schools remaining in the trial at the end of the delivery period, these findings may be biased due to self-selection. The survey also asked about implementing the four core strategies of the programme: 'break it down', 'explain clearly', 'check as you go', and 'keep it visual'. When asked in the post-intervention survey whether teachers has used these strategies 'in every lesson or frequently', 95% of teachers reported doing so for *break it down*, 96% for *explain clearly*, 86% for *check as you go*, and 86% for *keep it visual* (see Table 26).

Table 26: Have you, the Year 1 teacher, implemented the Infant Language Link Core strategies in the classroom?

Outcome	Break it down %	Explain clearly %	Check as you go %	Keep it visual %
Yes, in every lesson	42.9	42.9	35.7	40.5
Yes, frequently	52.4	52.4	50.0	45.2
Yes, infrequently	4.8	4.8	14.3	14.3
Total N	42	42	42	42

Source: post-intervention survey; respondents: intervention teachers.

Interview and observation data from the school visits also indicated that teachers and TAs were aware of all four strategies and used these regularly, both in targeted intervention and whole-class taught sessions. Table 27 provides examples of some of the common ways in which teachers and TAs described using each of the strategies: for all four, for example, multiple forms of dialogic talk were described as examples of scaffolding children's talk. Paired talk was also mentioned across all four strategies and was particularly common in whole-class activities. It was described as a way of building confidence in children responding to tasks and giving children shared responsibility for the answers. Similarly, introducing new vocabulary and practicing the vocabulary was often followed by children engaging in paired talk.

Table 27: Commonly used ways of implementing the four core Infant Language Link strategies based on interview and observation data

Break it down	Explain clearly	Check as you go	Keep it visual
Explaining the task in simple terms. Chunking up instructions. Use of modelling. Scaffolding progression through a task through dialogic talk . Use of pre-teaching vocabulary	Using the 10 second rule (integrating wait time in interactions with the children). Use of the confidence indicators. Revisiting key vocabulary throughout the taught session. Children checking their understanding of the task or instruction with their talk partner. Children explaining the task back to the teacher. Taking multiple turns at tasks—particularly well embedded in the targeted interventions: in each session observed all children were given many turns at each task.	Explaining new vocabulary at the beginning of the session. Modelling prior to asking the children to try the activity. Using language the children are familiar with when explaining. Using activity cards to indicate different activities taking place (such as teacher talk, discussion, time to ask questions). Linking the activity to the children's backgrounds and interests. Linking new content back to knowledge from previous lessons.	Good listening cards. Confidence indicators. Now and then cards. 'Asking for help' visual for specific children who struggle to put their hand up. Makaton signs to support spoken language. Dual coding on display boards (representing the content with text and a visual). Colourful semantics. Visuals around the classroom. Visual timetables.

In some cases, interview and observation data indicated that implementation of the four core strategies in whole-class teaching was supported by the use of Infant Language Link resources. Building confidence was reported in interviews to be supported through the use of the confidence indicators—thumbs up and down and red, yellow, and green faces. These resources aimed to boost children's confidence in communicating their understanding of the task and were also observed in use at some of the schools visited. Similarly, use of the 'good listening cards' (good listening, good looking, good sitting, good thinking) was observed in several schools but not all of those visited. In interviews, teachers described using symbols to indicate the subject the children would be studying, such as a design symbol to indicate a design and technology lesson

or the kind of activity, for example, using a partner talk symbol to indicate paired talk. Such use of symbols was seen as particularly supportive of EAL learners who were new to English. Some schools indicated already using such symbols, therefore for consistency with the whole-school approach they continued to use them rather than those provided by the programme.

Use of the four core strategies was more consistently evident in the targeted intervention sessions than the whole-class sessions. The former were highly structured around the relevant plan for the current group of sessions, usually including a warm-up, two core activities, a review task and an extension activity. Each session plan clearly indicated which of the resources should be used (for example, hoop boards, concept cards, and tokens) and what aims should be achieved. In contrast, similar structured session plans were not available for the whole-class sessions. This meant that teachers had to determine how to weave these strategies into existing lesson planning. Not imposing external constraints on the whole-class sessions, while emphasising the need to use the four core strategies, left opportunities for teachers to build in more pupil interaction through the paired talk tasks. However, it made it more difficult to disentangle the established aspects of teaching and learning practice from those newly embedded as part of implementing the programme. The following example illustrates this point.

In one whole-class observation the teacher used a visual prop called 'the story mountain' to introduce key vocabulary about story writing (learning about writing) as well as to visually represent the structure of the story being studied:

> *Key vocabulary is introduced by using the visual of the 'story mountain'—this is drawn on a flipchart and key vocabulary positioned along the mountain: opening, build up, problem, resolution, ending. This key vocabulary was positioned as an arc following the curve of the mountain.*
>
> *The teacher explains to the children what a build-up is. The teacher invites children to contribute and draws images to represent the story visually. She draws on the board representing the children's contributions.*

(Whole-class observation fieldnotes.)

The use of the story mountain is an example of 'keeping it visual', one of the core Infant Language Link strategies, however, it is also a feature of the Talk for Writing approach (Corbett and Strong, 2017) that the teacher was implementing. This was also evident from staff interviews, which frequently highlighted overlaps between other programmes or activities and the core strategies of Infant Language Link. This made it challenging to ascertain whether the provision was different from business as usual. The less structured nature of the whole-class sessions generated some uncertainty in teachers around whether they were implementing the programme fully or correctly. These findings should be considered in the context of the impact evaluation results, which showed no evidence of additional pupil progress in language and communication.

Have TAs delivered the targeted intervention sessions (eight sessions in a listening group, and eight sessions in two other groups)? Have pupils selected for targeted support been attending as per agreed compliance thresholds?

The developer provided school-level information about whether targeted interventions sessions had been delivered as intended. This formed the basis of the third compliance indicator. Of the 80 intervention schools completing endline outcome assessments, 48 (60%) completed enough sessions to be classified as fully compliant. A further five delivered enough sessions to be categorised as partly compliant. Full details were presented in the Impact Evaluation section under Analysis in the Presence of Non-Compliance.

Data on the number of intervention sessions completed by individual pupils identified as requiring targeted support was also supplied by the developer. This data was not used to define compliance, which was measured at school level. While 12 of the 139 pupils (9%) selected for targeted support received no intervention sessions and a further 23 (17%) received less than half of the maximum 24 sessions, the mean number of sessions completed by each pupil was 16 and the median was 21, with 64% of targeted pupils receiving support to a level at least equivalent to part compliance. However, only 27% of pupils completed 24 targeted sessions, the number that TAs were expected to deliver for the school to be deemed fully compliant. These figures show that while the programme was implemented in most intervention schools, many did not deliver it in full.

Infant Language Link offers optional additional support materials and sessions for individual pupils showing minimal improvement. However, within the evaluation, this was treated as an optional component rather than a compliance

requirement and no data on its use was collected as part of the IPE. Data from school visits suggest that targeted intervention sessions were held during normal class time or assemblies and occasionally replaced other existing interventions or school activities typically led by the TA.

Have teaching assistants used the Infant Language Link materials in targeted intervention sessions?

The targeted sessions were highly structured and followed a predetermined sequence, with three discrete groups of sessions each focusing on a separate aspect of speech, language and communication and eight sessions in each of the three groups. Correspondingly, there were clear lesson plans for each session which were accessible through the online Infant Language Link system. Observations of the targeted sessions confirmed that TAs were consistently using the materials provided: in each lesson observed, TAs followed the usual structure set out by Infant Language Link—warm up, two activities, and recap of key concepts. TAs commented that the targeted materials were easy to find on the system, easy to follow and did not require additional resource preparation, beyond printing the resources:

> *'I feel the instructions are very straightforward. I think that they are well set out and I think the resources—most of them are given to us and they're easy to find … It's nice that you can download them all at once and that was really useful, rather than having to do it one by one, and they are all very appropriate for the tasks that we're given, and yeah, they are easy to use' (TA interview).*

> *'Yeah, really helpful. Really, really easy site to navigate … I could find everything. Sometimes when you go on sites you have to go in to lots of different areas but with this you didn't, it was all there' (TA interview).*

This was perceived as helpful in reducing additional preparation workload and to some extent addressing issues with capacity. The TA in one school drew reassurance from the detailed planning provided which made it easier to deliver the small group sessions.

Have teachers used the Infant Language Link materials in whole-class sessions?

As stated in the theory of change, teachers and TAs were expected to implement the four core strategies characteristic of Infant Language Link using the classroom resources provided as part of the programme. There was abundant evidence of teachers doing this, as detailed in the Fidelity section of this report. In some instances, there was mention of specific resources used to support the delivery of these strategies (notably, the use of the good listening cards and reward tokens). In targeted intervention sessions, TAs made consistent use of the session plans and resources provided by Infant Language Link .

However, it was less clear how resources were used in the whole-class sessions. It was also less clear whether—particularly in the whole-class sessions—the use of these strategies and resources was considered new or whether this was an extension of existing practices within the school. In addition, Infant Language Link provided schools with the Spread the Word activity pack, which included printed resources for use during break times, within and outside the classroom, including activities to use at lunchtimes and in the outdoor playground. The use of these resources extends the focus on speech, language, and communication beyond the classroom and in this way has potential to develop a communication friendly environment as a whole school approach. However, there was consistent evidence in the schools visited that the Spread the Word resources had not been used.

When asked about the use of Infant Language Link resources, teachers said during fieldwork interviews that their classroom practices were already sufficiently focused on spoken language and oracy and they did not feel the need for additional resources in the classroom. There was a perception among teachers and leaders that the whole-class strategies and approaches were already in use in the classroom as part of the quality first teaching offer:

> *'We have probably found that a lot of the things around the whole-class approach are things that we were already doing and it almost—it doesn't conflict, but I think changing our day-to-day practice in Year 1 to match the programme hasn't necessarily happened because we're doing so much of those things, we would be changing it just to suit the programme rather than sticking with our school ethos and values, which is what we're doing across the whole school. So that is probably the only thing that has kind of been a little problematic' (SENCO interview).*

Similar thoughts were expressed by teachers in a number of the interviews. The following example is indicative of this:

> *'Yes, I think with the resources for the whole class, we have started to use the tokens for the different behaviours, but we have a lot of things in place as a school, like I'm sure lots of schools do that do the same jobs. So, for example, we have something called Mission Merits, which we give out to the children on an online system for good listening, being kind, and good concentrating. So it kind of overlaps a little bit as well, and I think some of the strategies that we use in class like we do a lot of talk partners to be able to think, pair, share. So to come together with someone else, have those conversations. We've got a big push for vocabulary across the school and we have something called Word of the Day. So there is a lot of things that we're kind of doing already that I would class as developing children's speech and children's language, and I don't feel like I've been able to dip in to the whole-class resources as much because it's like, "Oh, we do visual timetables, and we're already doing this and we've already got that", so I think for a school who perhaps hasn't already got lots of systems in place it's great that there is lots there and it gives you lots of ideas to be able to use within school' (teacher interview).*

Evidence from interviews with teachers and programme leads therefore indicates that the whole-school resources and strategies emphasised in the programme were considered similar to existing practice. In most cases, teachers opted to continue existing practice, especially in the use of resources.

Teachers were also asked specifically about the use of the Spread the Word activity pack. In some cases, teachers were aware of this resource, however, no evidence was found that any of the schools visited were actively using it. Reasons for not using it included:

- not having had time to look at the resource;
- concerns that additional resources in the classroom would overstimulate the children; or
- symbols in the pack were different from those already in use at the school, but similar in function—for consistency the SENCO preferred to continue to use the Widget symbols used throughout the school.

Overall, it appears that some of the whole-class resources provided by Infant Language Link were similar in function to those already in use in some of the schools so schools were reluctant to make changes to existing practice, which in some cases was implemented as a whole-school approach. However, there was no specific mention of pre-existing resources or strategies that extended the focus on speech, language, and communication beyond the classroom in the manner offered by the Spread the Word activity pack resources. By not using these resources schools may have missed an additional opportunity to expand their whole-school approach beyond provision within the classroom and into unstructured or play time in the school day.

Have progress measures been completed and targets set for improvement?

Carryover activities and sharing between teacher and TA

As part of the targeted intervention, teachers were expected to use carryover activities and strategies from intervention groups in whole-class teaching. This was specified in the logic model under 'outputs'. To facilitate this, the Year 1 class teacher and the TA were expected to discuss pupil progress in the targeted intervention sessions and plan for any activities that were particularly successful with the small groups to continue in the whole-class sessions. The tracking sheets completed during each targeted intervention session could also be shared by the TA with the teacher to discuss the progress of individual children. Around a third of respondents reported using each of the three carryover activities and strategies listed once a week. Few respondents recalled using them more than this. While more respondents (21%) reported that they never used the carryover activities and strategies from the listening group than the other intervention groups (16.7%), there was otherwise little variation according to specific small group intervention.

Table 28: For each of the intervention groups, how often did you use any carryover activities and strategies from the small group sessions in the whole class?

	Listening group %	Concepts and instructions %	Language structure %
Never	21.4	16.7	16.7
Less than once a week	23.8	26.2	23.8
Once a week	33.3	31.0	33.3
Twice a week	4.8	9.5	7.1
N	35	35	34

Source: post-intervention survey; respondents: intervention teachers.

Data from interviews with teachers and TAs similarly indicated that practices around sharing of information after targeted sessions and use of carryover activities varied substantially—in some schools these conversations took place after every targeted group session and in others they were never used. There was some evidence that activities used in the targeted sessions were directly incorporated in teaching sessions:

> *'Yes, we read that together and wherever she is doing the activity I sort of incorporate that in my lesson. So I know one of the activities was to put the object beside, and using that in my teaching, how do we say beside, where would beside be? And then they sort of help in that intervention group, if that makes sense?' (teacher interview).*

Besides the broader sharing of ideas around activities between teachers and TAs, a further focus of discussion was the data generated by the Infant Language Link system based on tracking sheet information entered by TAs. There was evidence in the fieldwork interviews that individual pupil attainment on the targeted group tasks produced data that was valuable for informing classroom support for children:

> *'I think that just giving the information back to the teacher and then they will base their lessons on what they could be struggling with. So they could put extra in the flipcharts, so say English, or a bit of extra reading or a bit of extra knowledge on vocab. If I say they struggled with something I would just feed it back to the teacher and hopefully they could try and integrate it into our lessons' (TA interview).*

There was further evidence that this detailed information on children's percentage scores on tasks was used to communicate the child's needs and discuss possible forms of follow-up support at home with parents:

> *'There was one child that was particularly highlighted that I spoke to parents at the parents evening and presented the parents with that report so they could see, and then gave them—I think there was some home learning things that they could do, because they wanted that' (teacher interview).*

In one fieldwork school the carryover sharing between the TA and teacher was not taking place because the TA delivering the intervention was a higher level TA specialising in speech and language, rather than the dedicated Year 1 TA; this meant that there was no prior working relationship between the teacher and TA. The TA was, however, very positive about the fact that there is a whole-class component and that it can be linked to the targeted activities.

Overall, survey and interview data revealed that tracking children's progress within the intervention groups was beneficial in several ways: informing teachers' practice in the whole-class approach and tailoring this to the needs of the children, making the teacher more aware of individual children's specific speech and language needs, and sharing the data with the child's parents to inform follow-up support at home. A preestablished working relationship between the teacher and TA involved in the delivery seems to be an important prerequisite for such sharing and carryover practices to take place.

Teacher Rating of Pupil Engagement progress measure

As part of the agreed programme inputs, teachers were expected to use a progress measure to evaluate children's engagement with the programme called the Teacher Rating of Pupil Engagement (TRPE) scale. The TRPE requires the

teacher to rate each child's skill level against a range of descriptors relating to active involvement, classroom participation, listening and self-regulation, social confidence, and communication. Responses to the post-intervention survey indicated that 33% of respondents found the TRPE either extremely useful or very useful; 32% found the progress measure moderately useful. Only 16% of responses were less positive about the TRPE finding it slightly useful or not useful at all.

Interview data from the ten schools visited as part of the evaluation indicated that nine of them had used the TRPE pre-intervention. It was also clear that teachers were aware they would need to use the TRPE post-intervention. One teacher reflected that making the TRPE ratings was not always straightforward and prompted reflection on individual children's personalities as well as how these may be affecting the judgement the teacher was expected to make:

> *'Yeah, it made me think about each child. It definitely did. It really made me think about them and some of the questions. It was difficult, because … if they're quite quiet or shy it made me think about their personality and think how does that actually … Do I then make enough time for that child to actually communicate to me? Because if they are naturally nervous or shy then how do we give them that chance?' (teacher interview).*

Overall, the TRPE was considered a useful measure by most respondents. As illustrated by the above response, however, the snapshot nature of the judgement which teachers make when completing the TRPE does not always accurately represent the child's level of ability in the way continuous, longer-term observation by the teacher or a standardised assessment would.

Setting targets for improvement

Target setting for individual children was not defined as a mandatory requirement of implementing the programme and it was not discussed as a mandatory practice in the webinar training sessions. When interviewed teachers were asked whether individual targets were set for children taking part in the targeted intervention sessions, only one school confirmed it consistently set targets for individual children. In the majority of cases interview data indicated that no specific targets were set for children in intervention groups.

One other point regarding programme inputs from schools relates to the SLCN audit, which features in the theory of change. There was no evidence in the interviews that staff were aware of the audit tool provided with the programme meaning that a school action plan for SLCN was not developed.

What is the uptake in other year groups and other classes in Year 1 beyond the compulsory Year 1 class?

According to post-intervention survey data, six of the 44 teacher respondents (13.6%) indicated that the programme was used in Year 1 beyond the evaluation class; in addition, six (13.6%) indicated the programme was implemented in the reception class, beyond the intervention class selected to take part in the evaluation. The IPE case study visits did not explore which specific elements of the programme were implemented beyond the evaluation class, however, the below comments offer some indication of the nature of broader uptake.

In one case the teacher indicated that they were starting to use elements of the programme across the curriculum in other year groups:

> *'We have tried some of the cue cards and now we've started to put them on, and we do put them on, some of the other curriculum lessons because sometimes it works better for geography, history, for the on-core subjects … We have tried to do that, the symbols, on the slides. So the children can see that it's Teacher Talk time or Discussion time next, Talk Partners' (teacher interview).*

This is a good example of the beginnings of a whole-school approach to SLCN. In the following example the programme is being implemented in all Year 1 classes as well as the reception class; this quote also indicates the adaptations made to the programme for the reception class:

> *'We are three form entry and so although one class is the study class, we're running it across Year 1 and we have also just started it in reception as well … I know it's not in the study but we are covering more children, but we have upped the group to five because obviously it's not the study so we didn't need to stay to four, so we are*

just going to try it with five because there were so many children who needed to access it, so see how it goes' (SENCO interview).

One SENCO indicated that they were in discussion about offering the programme to all schools in the academy trust, as well as raising the issue that wider roll out of the programme would require additional training:

'Yeah, there would be a training need there if we were to roll it out throughout school. Because we're looking at it as a trust as well, I contacted the teaching and learning consultant that originally pointed me in the direction of the pilot and spoke to her about potentially getting it as a trust … and then it will go out across the trust and filter across the trust but it just depends where we get up to at this point and when we have our next SEND strategy day' (SENCO interview).

IPE RQ2 To what extent does the intervention, including the training and materials, improve teachers' and TAs' understanding and skills around oral language development?

This section discusses reported changes in teachers' and TAs' understanding and skills around oral language development based on interviews and survey responses. Key findings are:

- teachers reported that the Infant Language Link whole-class strategies reinforced existing practice rather than introducing substantial changes;
- while teacher confidence in supporting pupil comprehension (receptive language) increased slightly in intervention schools, confidence in supporting expressive language remained the same;
- TAs reported a more positive impact, particularly in their confidence in leading language interventions and engaging pupils: interviews revealed increased awareness and care in how TAs used language, greater use of visual aids, and better group management skills; and
- TAs valued the structured nature of the targeted intervention materials and reported applying learned techniques beyond the intervention sessions.

Teachers' understanding and skills around oral language development

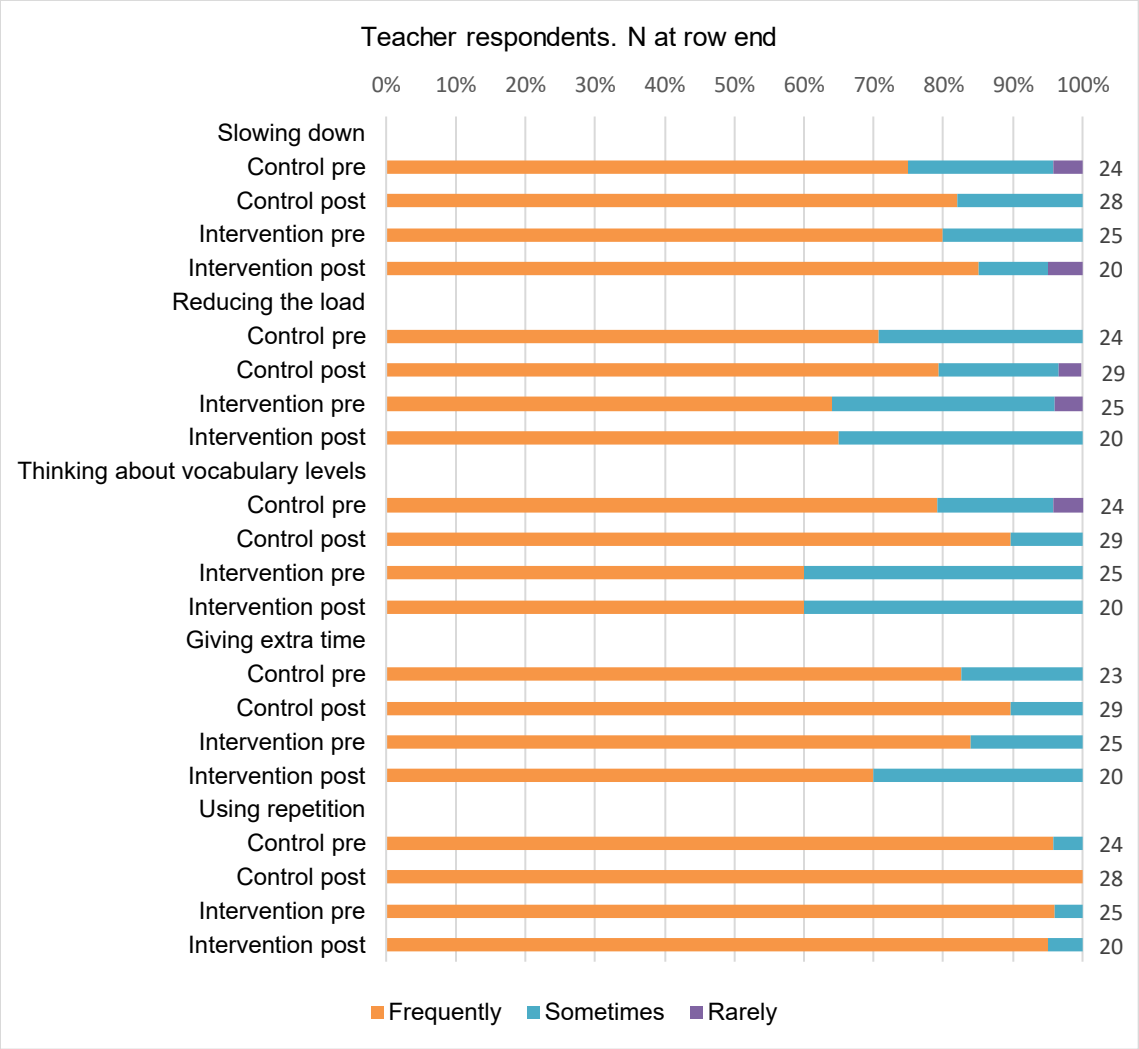
Figure 4 shows the results from a series of survey questions on the frequency of using established strategies for supporting children with speech and language. The strategies listed are commonly used in speech and language interventions aimed at children aged five to seven (such as Makaton, Nuffield, Colourful Semantics, Social Stories) and are frequently used by speech and language therapists working in schools (Roulstone et al., 2010). These strategies are similar to those in the programme yet not unique to it and serve as a proxy for assessing changes in teacher oral language development skills. The survey questions therefore explored the prevalence of such commonly used strategies in classrooms in both control and intervention schools and possible change in the frequency of their application post intervention. The figures presented are from teachers responding to both the pre- and post-intervention surveys. Respondents in general reported increased use of 'slowing down' (the deliberate pacing of instruction to enhance comprehension and language acquisition) although this was from a high baseline in both the control (pre 75%, post 82%) and intervention groups (pre 80%, post 85%).

At post-intervention, there was an increase in control teachers 'reducing the load' (minimising unnecessary mental effort associated with processing content and language) frequently (pre 71%, post 79%), yet for intervention teachers there was negligible change on this (pre 80%, post 85%). For 'thinking about vocabulary levels' (carefully selecting and scaffolding every day and academic/technical words so all children can access and use language effectively) there was no change in the percentage of intervention teachers using this strategy frequently (60% at pre and post), yet for control teachers there was an increase from 79 to 90%.

Over the study period, the percentage of control teachers reporting that they were 'giving extra time' (additional time or rehearsal to process, understand, and respond to language and learning tasks) frequently increased from 83% to 90%, whereas for intervention teachers it fell from 84% to 70%. The final strategy covered by this suite of survey items is 'using repetition' (reinforcing key language through repeated exposure in different contexts), where at least 95% of intervention

and control respondents reported using it at pre- and post-intervention. These results are based on low response rates (24-35% of teachers) and are perhaps best viewed as a reflection of business as usual in participating schools as opposed to a measure of change in practice. These results are also tabulated in Appendix J.

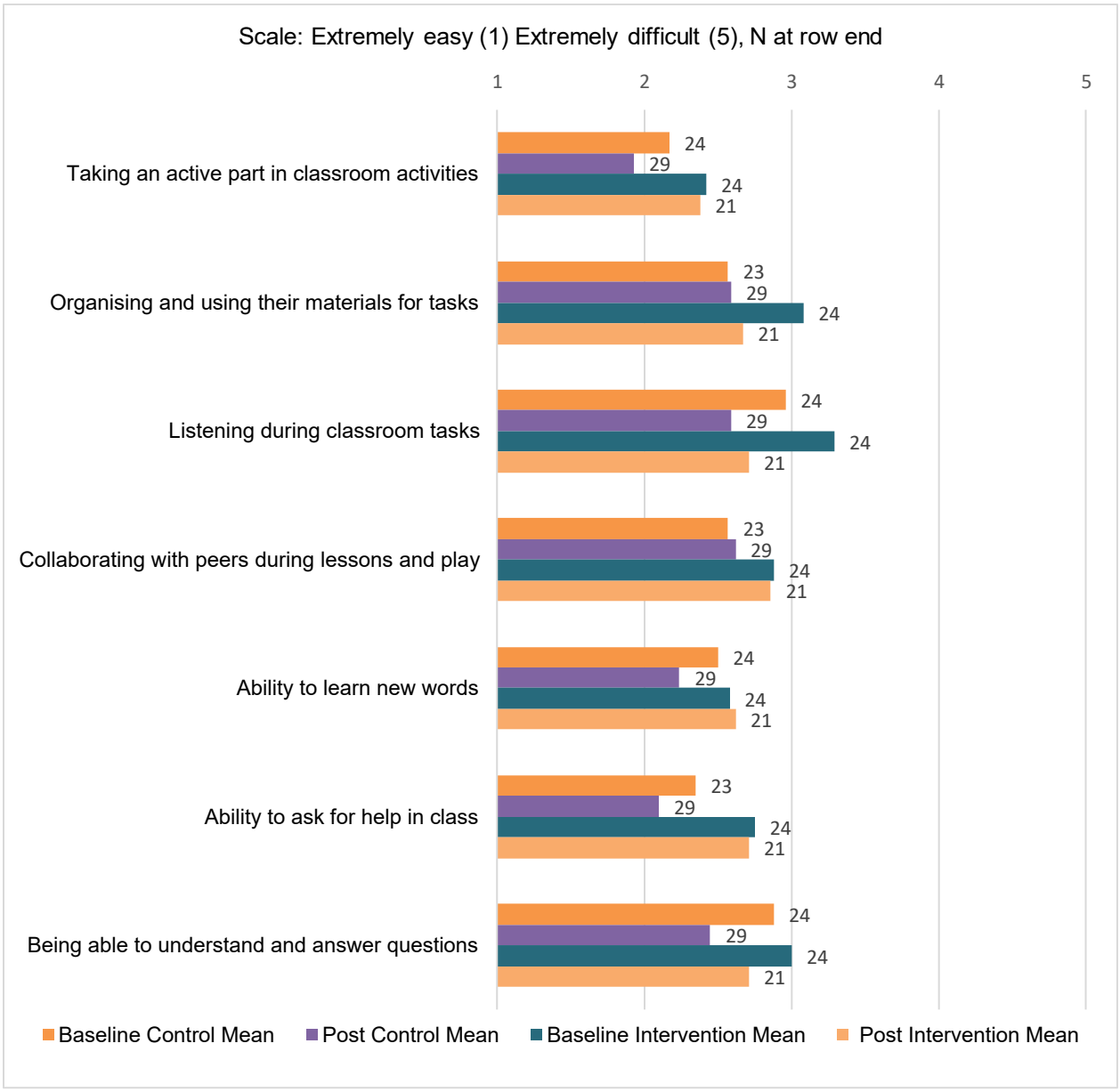
Figure 4: Frequency of using teaching strategies



Source: pre- and post-intervention survey; respondents: intervention and control teachers.

Figure 5 shows the results from a series of survey questions on teacher self-reported ease or difficulty in engaging Year 1 pupils in a range of classroom activities requiring speech and language skills. Respondents generally reported very limited perceived change. Moreover, for most classroom activities, the change was a small decrease in teachers' perceived ability. In control and intervention schools, the largest decreases concerned getting Year 1 pupils to 'listen during classroom tasks' and to 'understand and answer questions'. Across all classroom activities requiring speech and language, teachers in the intervention schools report a greater decrease in ease of engaging Year 1 learners in these tasks. It should be noted that these results are based on low response rates and are perhaps best viewed as a reflection of business as usual in participating schools rather than as measures of change in teacher confidence and skills around oral language development.

Figure 5: Mean self-reported perceived ease or difficulty in engaging Year 1 pupils in classroom activities (teacher responses)



Source: pre- and post-intervention survey; respondents: intervention and control teachers.

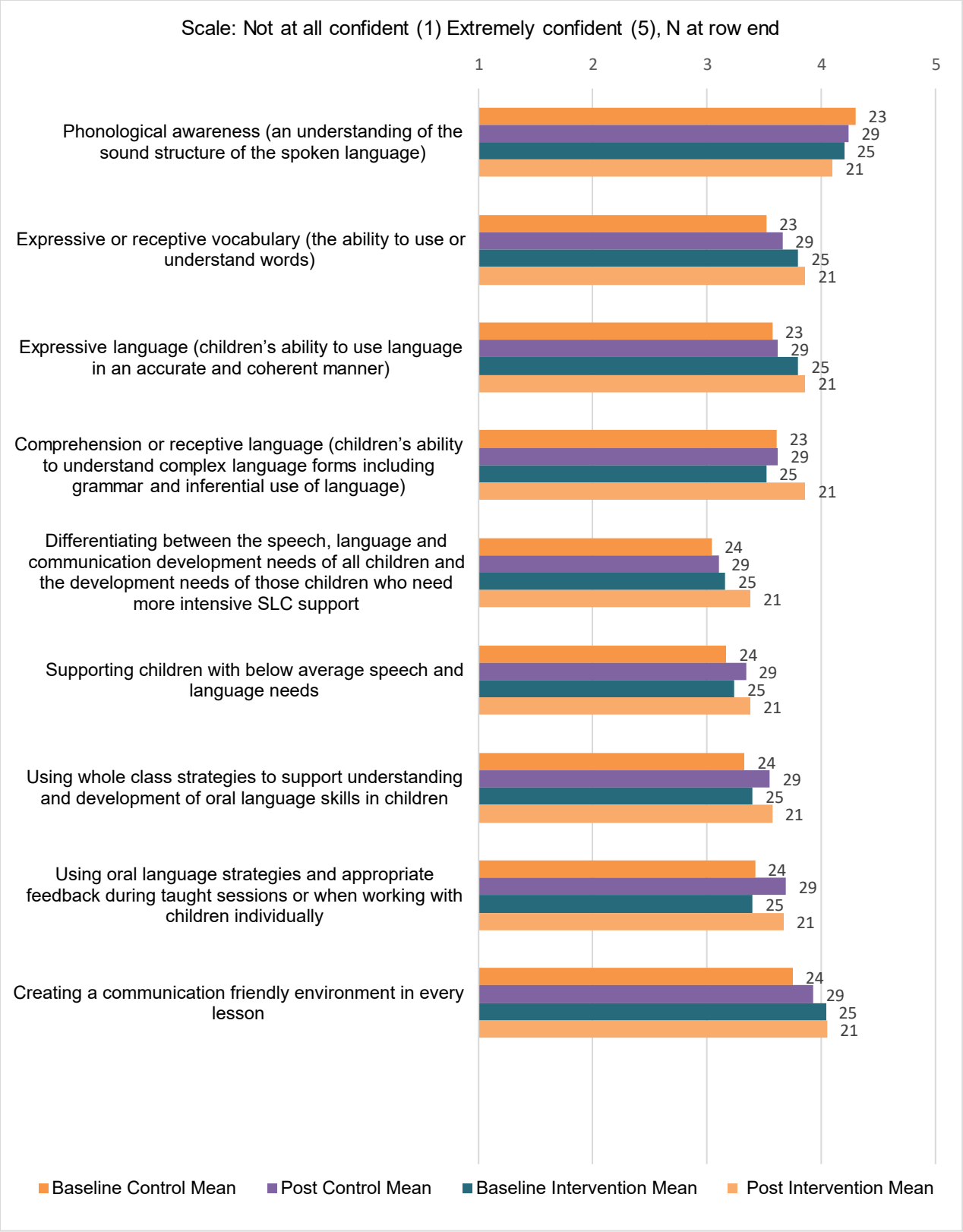
Figure 6 shows the results of a series of survey questions measuring teacher confidence in a range of speech and language domains. This shows a stronger increase in confidence in 'comprehension or receptive language' (children's ability to understand complex language forms including grammar and inferential use of language) in the intervention group (baseline 3.52; follow-up 3.86: 1 = 'very short of confidence', 5 = 'very confident') compared to the control group (baseline 3.62, follow-up 3.63). Again, these findings are based on low response rates that vary by specific questions (n = 21–29, 24%–35%). These results are also tabulated in Appendix J.

The interviews found that teachers engaged with the implementation of the whole-class strategies and resources to varying degrees. Many saw the core strategies as reiterating and confirming what they were already doing, resulting in little or no change to their practice. For many schools, this was due to the similarity with existing strategies and materials, often already implemented across lessons and year groups and therefore deemed confusing to the children if changed. In three fieldwork schools, teachers also indicated a lack of time as one of the reasons to fully engage with all the core strategies and materials available.

Nevertheless, six of the ten of teachers interviewed reported that they are more intentional in how they structure speaking opportunities in the classroom. This was often framed around conscious decisions to allocate more time to speech

activities, reflecting an increased understanding of the importance of children's oral language skills and the effort involved in developing these skills. Four out of ten teachers interviewed also reported increased confidence in addressing children's speech and language needs.

Figure 6: Mean self-reported teacher confidence in aspects of teaching language and communication



Source: pre- and post-intervention survey; respondents: intervention and control teachers.

The interview data foregrounds four key areas in teacher confidence, understanding, and skills around oral language development that underpin this more intentional structuring of speaking opportunities.

1. The most frequently reported change (six of the ten interviewed teachers) was teachers becoming more conscious of how they use language in the classroom, including how they phrase instructions and introduce vocabulary. Teachers reported being more aware of the need to break instructions down, to slow down their speech, as well as taking a step back and focusing on children developing language more independently. Here teachers also indicated spending more time revisiting vocabulary, reflecting increased knowledge of how their instructions affect children's comprehension.

2. Five of the ten teachers interviewed mentioned increasing the use of visual aids to support oral language development, including pictures, cue cards, and symbols to reinforce understanding, suggesting greater awareness of how visuals help to reinforce what children hear. Teachers reported incorporating visuals from the Infant Language Link resource bank or using visuals from other sources more frequently. The Infant Language Link visuals most frequently mentioned were those signalling group talk (talk partners), those rewarding behaviours conducive to oral language development (tokens), and those supporting children's expression of understanding or not (help me cards). However, overall, the use of the Infant Language Link resources to support the implementation of the whole-class strategies was limited.

3. Four of the ten teachers indicated that they made more use of peer learning, including talk partners, to encourage students to articulate their thoughts and provide feedback to one another, reflecting increased awareness of the importance of dialogic approaches to develop children's expressive oral language skills.

4. Three of the ten teachers interviewed emphasised giving students more time to process and respond instead of rushing through lessons or activities. These teachers also reported slowing down their instructions. This suggests increased knowledge of supporting children's expressive oral language skills.

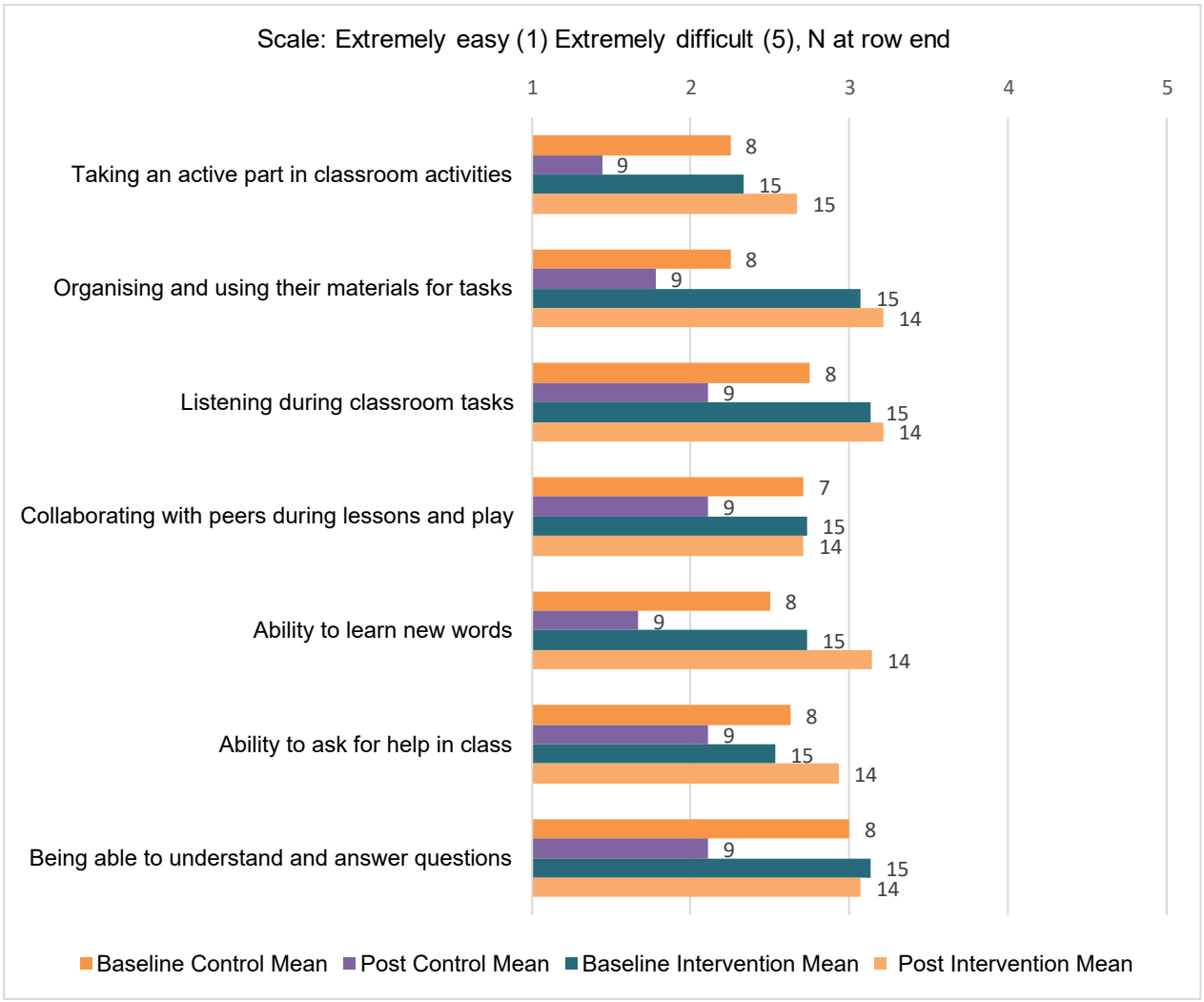
Overall, the teachers interviewed reported putting more focus on receptive and expressive oral language development, although they deepened their understanding and skills more in relation to the instruction and development of receptive oral skills. In the interviews, teachers were also found to emphasise vocabulary development over other aspects of oral language. Teacher confidence in comprehension or receptive language increased slightly in intervention schools but not in control schools, yet teacher confidence in expressive language remained at similar levels in both intervention and control schools (Figure 6). These findings are based on small sample sizes and should be treated with appropriate caution.

The fact that teachers indicated either not using the Infant Language Link whole-class resources or using only a limited set of resources suggests that contact with the Infant Language Link training and materials primarily raised awareness of and reaffirmed existing good practice, or reinforced knowledge of areas that were already strong, rather than making substantial changes to teachers' understanding and skills around oral language development. This fits with the survey findings suggesting that any change in use of teaching strategies (Figure 4) and perceived ability to engage Year 1 learners in classroom activities requiring speech and language skills (Figure 5) reflects business as usual in participating schools rather than change in teacher confidence and skills around oral language development.

TAs' understanding and skills around oral language development

Figure 7 shows the results of a series of survey questions measuring TAs' self-reported ease or difficulty in engaging Year 1 pupils in a range of classroom activities requiring speech and language skills. As opposed to the teachers, where limited change was observed in this area, the surveys found that the programme enhanced TAs perceived ease in engaging Year 1 pupils across various classroom activities requiring speech and language. Compared to the control schools, where TAs reported they found it increasingly difficult over the year to engage Year 1 pupils in all tasks, TAs in the intervention schools reported finding it more difficult to engage pupils in five of the seven of the classroom activities requiring speech and language skills that were mentioned in the survey. It should be noted that staff in intervention schools may initially show lower scores as training fosters a more realistic self-assessment of their confidence and skills. These responses were scored on a scale of one (extremely easy) to five (extremely difficult). Increases in perceived difficulty were observed for 'taking an active part in classroom activities' (from a mean value of 2.33 to 2.67, an increase of 0.34), 'organising and using materials for tasks' (from 3.07 to 3.21), 'listening during classroom tasks' (from 3.13 to 3.21), 'ability to learn new words' (from 2.73 to 3.14), and 'ability to ask for help' (from 2.53 to 2.93). It should be noted that these results are based on very low response rates, particularly from the control schools (n = 8–15). These results are also tabulated in Appendix J.

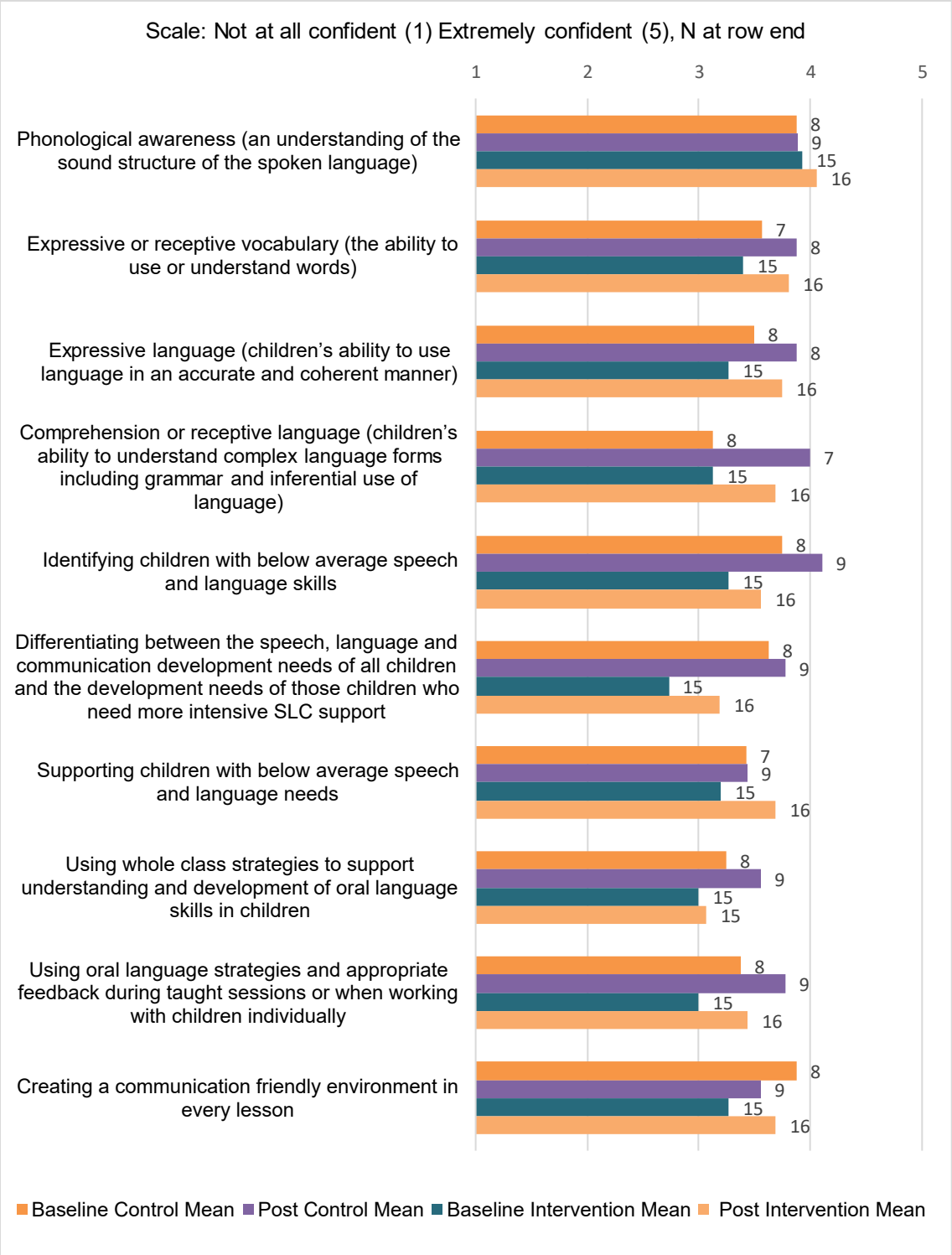
Figure 7: Mean self-reported perceived ease or difficulty in engaging Year 1 pupils in classroom activities (TA responses)



Source: pre- and post-intervention survey; respondents: intervention and control TAs.

Figure 8 shows the results from a series of survey questions measuring self-reported TA confidence in a range of speech and language domains. In terms of TA confidence, the increase was less pronounced compared to their perceived ability to engage Year 1 pupils. In both control and intervention schools, TA responses reflect increased confidence across a range of domains of oral language development. For phonological awareness, control TAs reported virtually no change in confidence (rising from a mean value of 3.88 to 3.89 on a scale of 1, 'not at all confident' to 5, 'extremely confident') over the evaluation period compared with a mean increase from 3.93 to 4.06 for TAs in intervention schools. A similar pattern was observed for supporting children with below average speech and language needs, with a mean increase from 3.43 to 3.44 among control TAs compared to an increase from 3.2 to 3.69 for intervention TAs. For creating a communication friendly environment in every lesson, control teachers reported a decline in confidence (from 3.88 to 3.56), whereas intervention TAs reported a growth in confidence (from 3.27 to 3.69). Across all other areas included in this set of survey items, both groups of TAs reported improved confidence over the study period. These results are also tabulated in Appendix J.

Figure 8: Mean self-reported TA confidence in aspects of teaching language and communication



Source: pre- and post-intervention survey; respondents: intervention and control TAs.

The interviews found that TA experiences with the small group targeted intervention were overwhelmingly positive. TAs appreciated the detailed instructions and the simplicity and accessibility of the resources:

> *'I really like the fact that everything is fully labelled and documented, so I know exactly what I'm doing. So, this is the task, this is the warm-up task, these are the resources that we need. So, it is very clear and concise, and I know exactly what the target words are for working on that session, so I think that it's naturally made me more aware of the way that I conduct myself with the children. It is just that I love that whole very black and white "this is what you're doing"' (TA interview).*

In all ten fieldwork schools, TAs also consistently reported higher confidence when delivering language interventions. This included feeling more comfortable with the structure of sessions and their ability to apply techniques effectively. Increased confidence also extended beyond familiarity with the target intervention materials, with some TAs highlighting how they feel a deeper connection with children and have become more confident in working closely with them. Others emphasized the growing confidence in leading language activities, particularly as it pertains to modelling language and providing feedback.

Four key areas of professional growth emerged from the analysis of the interviews with ten TAs:

- Similar to teachers, the most frequently reported change (mentioned by nine) in TA understanding and skills related to them becoming more mindful of their own language use, especially in terms of how they gave instructions or modelled language. They became more conscious of speaking slowly, using simpler language, and ensuring children had time to process.

- The importance of using visual aids, physical objects, and other sensory inputs to reinforce oral language development was a common theme (seven of the ten TAs), as it was for the teachers.

- Six mentioned that working with small groups presented challenges, particularly in ensuring equal participation and managing pupil behaviour. However, these challenges with managing group dynamics were also an area where TAs reported growth in understanding and skills, particularly where they were more familiar working with children one to one. TAs reported that they felt that this approach helped children learn from their peers and reinforced group collaboration skills.

- Importantly, eight emphasized how the intervention had made them more reflective practitioners, more frequently assessing how to improve their sessions and teaching approaches to better support the children, including tailoring their use of language to individual children's comprehension levels.

  'At the beginning if you asked me … but now, no, I'm enjoying it. You can see I'm smiling. I enjoy it and it's taught me loads, and even to self-reflect on how can I make it better for them. If I need to tweak it, I will tweak it. I'm not going to say I'm going to do it word for word like this, but if I can make it better and more fun for them then definitely' (TA interview).

TAs also reported feeling that the resources had shown them new ways of getting language across to students, which they reported to also be applying in small group and one to one sessions they were leading beyond those involved in the intervention. The interview data thus points to the possibility of improvement to TAs understanding and skills in areas associated with long-term change to practice (such as reflexivity and application in new contexts) as a result of working with the intervention materials.

IPE RQ3 To what extent does the intervention, including the use of the standardised screening assessment, help teachers to identify pupils requiring support?

Based on interviews and survey responses, the following key findings highlight how effectively Infant Language Link, including the standardised screening assessment, supports staff in identifying pupils who need additional support:

- the Infant Language Link screening tool was generally seen by school staff as more effective than other methods for identifying speech and language needs, especially by SENCOs; and

- the screening tool helped identify previously unnoticed language difficulties, particularly in KS1 and KS2 and among EAL pupils, though distinguishing EAL from SEND remained challenging.

Perceived effectiveness of standardised screening assessment

The Infant Language Link screening tool was used at the start of the delivery period to assess the language and communication needs of pupils in intervention schools. Results were available for 1,180 pupils. As mentioned above, screening scores showed a positive correlation with the combined baseline measure developed for this evaluation. Looking at the specific language scales, the correlations with receptive language measures were stronger (CELF LC: 0.64; CELF SC: 0.62) than for the expressive language measures (RAPT Grammar: 0.52; RAPT Information: 0.49).

Table 29 shows that 14.6% of respondents in intervention schools strongly agree that the Infant Language Link screening tool was more effective than other tools and methods that they had experience with to identify pupils requiring support with speech and language. A further 52.8% somewhat agree. The data also suggests that SENCOs viewed the screening tool slightly more favourably than other members of staff, although differences between staff were small. For all staff categories, more than half of the respondents agreed that the screening tool was more effective.

Table 29: Would you agree that the Infant Language Link screening tool is more effective than other tools and methods of identification you have experience with for identifying speech and language needs?

	Head/deputy	Teacher	TA	SENCO	Total
Strongly disagree	0.0%	0.0%	4.3%	0.0%	1.1%
Somewhat disagree	0.0%	5.4%	0.0%	4.3%	3.4%
Neither agree nor disagree	16.7%	27.0%	39.1%	21.7%	28.1%
Somewhat agree	83.3%	54.1%	43.5%	52.2%	52.8%
Strongly agree	0.0%	13.5%	13.0%	21.7%	14.6%
Total	6	37	23	23	89

Source: post-intervention survey.

Interestingly, as Table 30 shows, more respondents in intervention schools (12.2%) than in control schools (1.8%, only one respondent) said that their current methods of identifying speech and language needs were not effective, although this was still a minority view. Most respondents at baseline believed that their current methods were either moderately effective or effective, with few saying the current methods were highly effective. At post-intervention, the percentage of respondents in control schools rating their methods as effective decreased from 43.6% to 36.2%, while the percentage describing their methods as moderately effective increased from 43.6% to 50%. Readers should note that the response choices here are not the same as for the question on the Infant Language Link screening tool, as presented in Table 29. The results are, therefore, not directly comparable.

Table 30: Perceived effectiveness of speech and language needs identification methods currently used

	Intervention baseline	Control baseline	Control post-intervention
Not at all effective	0%	0%	0%
Not effective	12.2%	1.8%	1.7%
Moderately effective	44.9%	43.6%	50.0%
Effective	36.7%	43.6%	36.2%
Highly effective	6.1%	10.9%	12.1%
Total	49	55	58

Source: pre- and post-intervention survey.

Interviews conducted during school visits provided further insights into the perceived effectiveness of the Infant Language Link screening. Teachers and SENCOs at seven of the ten schools visited said that the screening tool helped them identify pupils with language difficulties that may not have been flagged through existing systems. This was commonly referenced as one of the key advantages of using the intervention. The tool was reported by one SENCO interviewed to be ‘clear cut’ in determining which children needed speech and language interventions. In addition, the breakdown of language areas into

smaller, focused components was appreciated and seen as supporting intervention planning, even though staff also noted limitations in their capacity to intervene at that level of detail through targeted interventions as opposed to a more global, whole-school approach.

Staff mentioned having experience with a range of alternative tools for identifying children's speech and language needs, such as WellComm, NASSEA, SALT, and local authority screeners. Overall, staff acknowledged that while the Infant Language Link screening assessment was not necessarily a replacement for these tools, it was often described as more detailed. It gave staff a clearer sense of specific language needs rather than just flagging general concerns. This was particularly welcomed by SENCOs, who felt that the Infant Language Link screening provided better direction and clearer guidance. Teachers and TAs in turn recognised that the Infant Language Link screening was more effective in picking up subtle language difficulties, but there was less consistent evidence of this significantly affecting their overall teaching approach or how they used the more detailed profile of language needs in their work with individual children. Some staff mentioned that the Infant Language Link screening was valuable for identifying needs in KS1 and KS2, with alternative screeners being more commonly targeted at the Early Years. Survey data on the alternative methods of screening used in both intervention and control schools are reported in Table 33 and discussed in relation to IPE RQ5.

A recurring challenge expressed by school staff concerned distinguishing between language difficulties that stem from a child's EAL background versus those that indicate a specific language delay or disorder. In most schools visited, EAL pupils were overrepresented among those selected for targeted support, whether moderate or high need. Numerical data from intervention schools confirms this (see Table 35), however, the tension in how to interpret the screening information for EAL pupils was frequently noted, as evidenced by these contrasting quotes:

> *'So we know the children that have got significant needs, so if you've got this child—if you clicked on that and got her actual scores up and it showed you, it will say on hers that she has got English as an additional language and she needs to focus on learning English, da, da, da and all of that, but actually she is SEN and is probably on the autistic spectrum and actually her difficulties are not related to her EAL, they are related to the SEN, so it skews it a little bit in that sense' (SENCO interview).*

> *'I think it's very difficult to think, is it an EAL need, or is it a speech and language need, or is it both? I think there are some children who I think it is both, and I think that kind of there is one boy who is in that group, and I think that there is definitely an understanding need … but I feel there's a bit of crossover there. And then there are some children in the blue [mild to moderate SLCN] who are EAL … they've got good spoken language and their written language, the written sentences are good, but there is obviously some kind of gap where perhaps because they are EAL that it's the grammar … I think especially because it [the Infant Language Linking screening] was broken down into the specific section where they had a misunderstanding, or they had a misconception … like pronouns … and prepositions. … you perhaps wouldn't pick up that there was a bit of a gap there, but it was flagged up in the interventions, so it was really, really helpful' (teacher interview).*

The training and information provided to schools made it clear that if a child is developing English as an additional language the screening tool will not be able to determine if they also have an underlying speech and language need. The Infant Language Link programme also provides this detail in a dedicated EAL section on its website. However, as the comments and evidence from broader IPE data suggest, there was still confusion in schools regarding use of Infant Language Link with EAL pupils. This suggests the need for clearer guidance to be provided by Infant Language Link to schools on this aspect of the programme.

In line with the appreciation of the detailed breakdown of language support needs provided by the Infant Language Link screening, school staff also generally found this detail helpful to understand the needs of their EAL pupils. Most of the schools visited included EAL children in the targeted intervention group, viewing this as an additional opportunity for them to make accelerated progress. In the interviews, staff also overwhelmingly described the targeted intervention sessions as helpful to this specific group of learners, despite recognising their diverse needs including the need for rich language models provided by good whole-class teaching (see RQ4).

IPE RQ4 To what extent does the tiered approach to the intervention support children's speech and language development? Are there particular challenges or benefits for specific groups (EAL, disadvantaged pupils)?

Key findings based on teachers and TAs interviewed as well as observation data of whole-class and targeted intervention sessions indicate that:

- teachers expressed generally positive views of the impact of Infant Language Link in classroom teaching and characterised it as beneficial for children with a broad range of abilities;
- improvements were observed in children's expressive language over the course of a targeted intervention session and improvement across sessions was reported by teachers and TAs;
- participants cited reductions in workload and in uncertainty around planning as benefits of highly structured targeted interventions, but the limitations were perceived as having no flexibility in the pace of delivery or in response to the specific group of children's needs;
- EAL children were included in targeted intervention sessions despite advice from the developer to prioritise keeping EAL children in whole-class sessions; increases in confidence with language and communication and in participation in class were noted as benefits specific to EAL learners; and
- for children from socioeconomically disadvantaged backgrounds the benefits of the programme were reported as increased opportunities for receiving individual attention and support, exposure to rich vocabulary and to positive language role models.

A distinctive feature of Infant Language Link is the tiered format, including both a whole-class intervention aiming to improve the speech and language development of all children, and targeted small group sessions, aiming to support the children identified by the screening tool as having mild to moderate language needs. The IPE activities examined several aspects of this tiered provision. Interviews with school staff explored how the Infant Language Link strategies, materials, and resources were used in whole-class and targeted sessions, and the fieldwork observations looked at how well these worked in practice to support children's speech and language development. Earlier in this report an analysis of how the four core strategies were implemented as part of whole-class delivery was presented (see IPE RQ1: Have teachers implemented the whole-class strategies in every lesson?) showing that these strategies were already embedded in schools' usual practice rather than newly introduced. The use of carryover activities and strategies from interventions during class teaching was also discussed under IPE RQ1, showing significant variation in respect of these areas, though there was evidence of targeted session activities being incorporated into teaching and shared with parents for follow-up support. This was one of the targeted inputs specified in the logic model and a unique feature of the programme which enabled the transfer of practices and knowledge between the targeted and universal components of the programme.

This section reports on the perceived effectiveness of the classroom provision and the small group sessions, identifying specific ways in which the approach was implemented—for example, through partner talk. The tiered approach is then considered with reference to children's responsiveness to the materials and teaching approach and the reported and observed impact on pupil speech, language and communication skills, and behaviours. Finally, the perceived benefits for children defined as EAL or disadvantaged are discussed.

Infant Language Link whole-class sessions

Interview and observation data indicated that the Infant Language Link strategies were used in the whole-class approach and were perceived as having a positive impact on children with a broad range of abilities and needs. A key approach in the whole-class sessions, which was observed and reported to have universal take-up in all schools visited, was paired talk. The following examples illustrate these points. The teacher in one school commented that the whole-class intervention strategies and approaches were beneficial for children with a broad range of abilities including those with special needs and diverse linguistic backgrounds:

'It's good for SEN, it is good for EAL, it is good for like attention difficulties and it's good for children who are typical or whatever you want to call it, you know, because of their age, because they are so young, they still need those reminders, they still need visuals, they still need to develop their vocabulary, so it kind of does hit all the spots as much as you can when there's 30 children' (teacher interview).

In support of this, one teacher stated that the whole-class strategies had made a difference to children's language and communication, especially in their readiness to take part and ability to collaborate:

Respondent: 'At the start of the year a lot of children may be upset and don't really want to talk, like fingers in their mouth indicating that they don't want to speak to each other, but that collaborativeness has come gradually over time doing things like classroom rules together has built our relationship more, so children have that confidence and telling them it's a safe environment …'

Researcher: 'And is that something you implemented because of ILL?'

Respondent: 'Yeah, definitely. Because a lot of the time I was more asking them "Do you understand?" and when they would say "yes" I would just work on my focus group but in fact they just said yes to please me. Like that webinar said. But they actually need more help, yeah' (teacher interview).

The teacher's statements were supported by evidence in the whole-class observation of children's participation in activities:

Children work in pairs with their 'talk partner'. Teacher engages children in dialogue when she is at their tables, asking questions.

When working in group on the carpet, the teacher encourages children to talk to their talk partner before answering a question whole-class.

Teachers asks for hands up to avoid children just shouting out. This is still a bit challenging for the children, who are keen to speak. (Whole-class observation fieldnotes.)

The above extract describes an instance of 'partner talk' (also sometimes known as 'paired talk'), a universally adopted strategy in whole-class sessions in all ten schools visited. 'Break it down'—one of the four core teaching strategies in Infant Language Link—identifies four relational aspects of talk, including teacher talk, teacher-led question and answer, partner talk, and whole-class discussion. Partner talk is therefore one of the recommended approaches to supporting children's talk in the classroom. There was evidence of its use in whole-class observations as well as being mentioned in teacher interviews as a frequently used strategy. Table 31 summarises some of the common functions of partner talk as used in the classroom and underpinning the Infant Language Link delivery.

Table 31: Common functions of partner talk observed in whole-class teaching as part of the Infant Language Link approach

Functions of partner talk	Example from observations/interviews
Recounting aspects of the story taught in the lesson	*'Talk to your partners—what story are we learning about?'*
Practicing use of sentence stems to recount the story	*'Tell your partner: "Hamda's Surprise is about…"'*
Finding synonyms	*'Can we think of other words which mean adorable?' [Children engage in paired talk.]*
Using paired talk time if a child does not know the answer to a teacher's question	*'The children understood the strategies used by the teacher and were able to respond to those. In the instances when they responded incorrectly the teacher used paired talk to give them time to process and check the answer with a peer before asking the question again.'*
Practicing use of adjectives	*'Tell your partner how we describe lambs.' Children come up with adjectives: 'fluffy', 'woolly'.*
Building confidence in children to speak to one another and shifting the balance of talk from teacher to child led	*'A lot of the time, probably at the start of the year, I was doing most of the talking but actually getting them to use their talk partners. That has only come over time, only because they had to build relationships, because they come from two separate classes. Merging them into one class, have they got the relationships and have they got the confidence to speak in front of one another.'*

Scaffolding confidence - taking the pressure off a single child responding and avoiding cold calling	*'Like the child might know the answer and they might have told their partner but they are not always willing to share it. So this is why we do a lot of partner talk. So the pressure is taken off and they're not kind of on the spot having to think of an answer—they've got the opportunity to tell their partner anyway.'*

The prevalence of paired talk shows this as the approach preferred by teachers for developing their existing practice in whole-class sessions in response to the guidance and materials. Paired talk was sometimes observed to work well, but sometimes it had limited success, for example, where one of the children was more reluctant to engage in paired talk, which also impacts on the child who attempted to initiate the talk. In another whole-class observation children were seen speaking rather than listening to their partner's contribution during partner talk. These instances indicate that paired talk needs further monitoring from the teacher or TA in order to scaffold children's engagement with it, for example, through emphasising turn-taking and intervening when both children are not engaged. Nevertheless, children's eagerness to participate indicates that it was a preferred approach in the classroom which mostly worked well and tipped the balance of talk in favour of the children.

Impact on pupils—targeted and whole-class sessions

Table 32 reports the results from a set of survey questions on school staff perceptions of whether Infant Language Link is associated with improvements in certain areas of pupil learning. The response data is presented separately for teachers and TAs due to their different roles in delivering the intervention. Responses were generally positive across all three questions. There were, however, some noteworthy differences between teacher and TA responses.

In terms of whether the intervention improves children's understanding of language used in the classroom, most TA respondents (56.5%) neither agree nor disagree, with a further 39.1% saying that they somewhat agree. Responses were more positive among teachers, with 66.7% saying that they somewhat agree, and a further 13.9% strongly agree ing. Whether this difference is attributable to the different roles played by teachers and TAs is not clear.

When asked about whether Infant Language Link improves children's social confidence and participation with others, again, TAs were far more likely to neither agree nor disagree (30.4%) than teachers (8.3%) whereas more teachers (30.6%) strongly agree with this statement than TAs (13%). A similar pattern emerges regarding children's confidence engaging in learning activities, although the differences are less pronounced: 27.8% of teachers strongly agree that the programme is associated with improvements in this area, compared to 17.4% of TAs. These findings are based on small sample sizes, with the response rate amounting to fewer than half of the teachers taking part and just over a quarter of TAs, yet the differences between the responses from these two groups are clear.

Table 32: Children's confidence engaging in learning activities

	Children's understanding of language used in the classroom		Children's social confidence and participation with others (peers, teachers)		Children's confidence engaging in learning activities	
	Teacher	TA	Teacher	TA	Teacher	TA
Strongly disagree	2.8%	0%	2.8%	0%	2.8%	0%
Somewhat disagree	2.8%	0%	5.6%	4.3%	5.6%	8.7%
Neither agree nor disagree	13.9%	56.5%	8.3%	30.4%	8.3%	17.4%
Somewhat agree	66.7%	39.1%	52.8%	52.2%	55.6%	56.5%
Strongly agree	13.9%	4.3%	30.6%	13.0%	27.8%	17.4%
Total	36	23	36	23	36	23

Source: post-intervention survey.

The effectiveness of the tiered approach was examined in terms of whether it has a direct impact on children's speech, language, and communication skills as well as other relevant attributes such as social confidence. Evidence from both interviews and observations indicated improvement in expressive and receptive language skills. Teachers and TAs also noted an increase in children's confidence and social confidence, and often said that this led to children being happier and more engaged in the classroom.

Improvement in expressive and receptive language skills

There were multiple examples of improvement in children's expressive language over the course of a session as noted in observations and across sessions as reported in teacher and TA interviews. Teachers described a general increase in the proportion of children's talk. Beyond this, there were specific examples of children pronouncing words more clearly and saying the complete word. Fuller expression was also noted in targeted intervention sessions, where progress was witnessed within a single session: here, children progressed from using more basic and incomplete sentences to expressing themselves in full sentences and providing more accurate descriptions. Towards the beginning of this task children often gave instructions with incomplete sentences. For example, during one session a child was observed saying, 'Put your bear in the front red.' In response, the TA would model the full sentence and ask the child to repeat in a full sentence. Towards the end of the session the children began to give instructions using fuller sentences such as, 'Put your bear in the yellow hoop at the front' (quotes from targeted group observation fieldnotes).

Children attending the targeted sessions were described as becoming more independent with sentence building and becoming more confident with the use of prepositions (as illustrated in the above example). Some gains were also reported in children with more severe or with specific language and communication needs. For example, in one school a child who was described as selectively mute in the beginning of the school year was described as making progress in using speech and asking questions in whole-class sessions. It should be noted that schools were told that the programme is not designed for the needs of pupils with severe speech and language needs, yet in this case the school clearly thought that the specific child could benefit from taking part.

In discussing improvements in receptive language, teachers and TAs identified specific Infant Language Link strategies which led to an improvement in children's listening skills. These included the use of shorter and more precise questions and directing children's gaze ('magnet eyes' in the Infant Language Link materials). TAs reported that the usual session structure (warm up, followed by two activities, and concluded with a recap) and the revisiting of key concepts and key questions which this affords, has been helpful in improving children's comprehension.

Increase in children's confidence

Both teachers and TAs reported an increase in children's confidence in participating in learning activities and an increase in social confidence as a result of the targeted and whole-class Infant Language Link resourced session. The following comments provide evidence of TA and teacher perceptions of an increase in confidence in children as a result of the targeted support sessions:

> *'I think with, like, the confidence thing—both of them I think have increased in confidence ... They all focus quite well on the carpet, especially [Child 1] and [Child 2], their hands are up and they've got a lot of confidence when it comes to answering questions and things like that' (TA interview).*

> *'Another child that is within the intervention with Mrs X and he is like a different child. He's so confident. I have also seen that it's impacted his writing positively. He is just happier to give things a go. I think that he has really benefitted from that small group work and his confidence has just grown loads. So I'm seeing the impact in areas across the curriculum' (teacher interview).*

There was also evidence of teachers seeing increased confidence among children in whole-class sessions:

> *'I mentioned confidence, didn't I, and I said even if it's like the confidence to speak within a group, to take a more active path in classrooms, in the classroom activities—so such as when I'm leading an input and them*

offering suggestions and answers, they would be more forthcoming, more active participants I would say' (teacher interview)

Teachers often commented on how children taking part in the targeted intervention sessions were able to carry the confidence they had built in those sessions into the whole-class sessions, suggesting that the tiered intervention structure was cohesive and effective. Some of the changes in children's behaviour, which teachers and TAs described as more confident or socially confident, included an eagerness to ask and answer questions, confidence to take a more active part in classroom activities, sharing ideas, talking more, and engaging in discussion more often.

It was interesting to note that teachers and TAs associated such social confidence, talking more, and having opportunities to express their ideas with an increase in children's happiness:

'I would definitely say they're more socially confident and speaking more. Definitely. We've got two particularly who are happier. There is one child in there I know is certainly much more positive in the classroom than she was when she first came in, and another child who is far more vocal, and is in fact too vocal so I have to rein them in' (teacher interview).

'I've got a lot of children that they love to talk. I have had one child at the beginning of the year who was a selective mute. He didn't speak for the first five weeks. Using signs. Giving him time to think. Preparing him with more confident children who would help him a little bit. He is now speaking and now happy to answer questions. I would like him to be more confident, so obviously that will continue, hopefully that progress will continue but he now speaks and he's happy, he's confident in speaking, which is just wonderful' (teacher interview).

The teachers and TAs interviewed also associated the targeted component of the programme with pupil happiness and enjoyment. Children were observed to be highly responsive and engaged in all targeted sessions observed. Improving listening skills and response time from children when asked to contribute were apparent. The targeted component of the programme in particular was described as highly enjoyable and fun. Interviewees recalled children entering the sessions enthusiastically and being willing to share what they had done with their teacher afterward.

Challenges and benefits of using the Infant Language Link materials in targeted intervention sessions

Staff identified a number of benefits and challenges of using the Infant Language link materials in targeted intervention sessions. One SENCO commented that the familiar format of the sessions was well received by the children. Repeating this format over several sessions created anticipation in the children as well as enjoyment in knowing what to expect:

'When I observed a session they knew the format, so each game is very similar. There are three sessions within the game and they know the format and they like playing within that game and developing language' (SENCO interview).

Reward tokens were provided by the programme for use in the targeted sessions. Observations of these sessions confirmed that these tokens were used frequently by teaching staff (in targeted and whole-class sessions) and were anticipated and received with enthusiasm by the children:

'Children were having a very positive experience. They are very focused on the tokens' (targeted group observation fieldnotes).

While the structured nature of the targeted sessions appeared to have multiple benefits (to children in setting expectations and to staff in reducing workload and uncertainty around planning—see Fidelity), observations also revealed the limitations of a highly structured approach:

'TA clearly followed the structure of the activity. She had good organisation and did it smoothly. Felt that she was following the structure very closely and perhaps was less able to pick up the needs of the children and how they responded. Difficult to do when also focused on the tracking sheet' (targeted group observation fieldnotes).

The highly structured approach sets out the expectation to cover a specific amount of content in the session while simultaneously completing the tracking sheet against each child's performance in the tasks. As the researcher notes in the above observation, this could detract the TA's attention away from picking up on the needs of the children.

Other limitations perceived by teachers included the expectation to run the programme in a specific sequence (listening, followed by concepts and instructions, and completed with language structure). One SENCO shared that in discussion with staff involved in delivering the programme, they would have preferred to tailor the sequence in response to children's needs as well as to be given the option not to cover some of the sessions where they did not appear to meet the particular group of children's needs:

> *'We've been discussing it and we think that some of the resources from the speech and language link we could run as, like, a listening intervention as well and an understanding for some of our pupils … We are running it for the trial exactly as it is. But we would like dip in to it knowing it for different children for different areas. I mean my class teacher was feeding back with these children that we probably wouldn't have run it right from the start. We would have looked to where they were about really, and run it, so that is one of the things that we've noticed, but we want to do it properly because of the trial' (SENCO interview).*

Similarly, one TA described the targeted materials as 'rigid' in the sense that they set the same level of challenge for all children. This in turn makes it difficult to differentiate the provision for children who are finding the tasks too easy or for those who are struggling to reach the set level. This was supported by the teacher who commented:

> *'Yeah, because it kind of goes against your instinct of what we train the staff to do in terms of like always adapting, differentiating, and trying to push on if it's too easy, or lower the difficulty of it if it's too tricky, whereas the intervention, because it's so kind of formulaic and step by step that it kind of forces you to go against your instinct a little bit' (teacher interview).*

This difficulty of setting the challenge at the right level for all children in the group was evident in the observation data from one school as well:

> *'For one child, the task was too easy, for the other it was hard for him to stay on task due to his attention, but also seemed to enjoy it and do well. Needed more encouragement' (targeted group observation fieldnotes).*

Overall, the targeted intervention session materials were well received by staff and children and supported the delivery of small group interventions with fidelity (see IPE RQ1 section of report). Reducing lesson preparation time and setting out clear expectations of the aims of the session in both children and staff appears to have worked well in supporting effective implementation. Perceptions relating to the rigid nature of a highly structured forms of delivery open up space for staff to reflect on whether and how to adapt delivery in response to the specific needs of the children if continuing with the programme in the longer term.

Impact on EAL children

Infant Language Link training sessions provided guidance on which children to include in small group interventions and the provision that should be made for EAL children. The priority is to include children identified by the screening as having mild to moderate SLCN (identified as blue in the system). If schools had sufficient resource, they could include EAL and pupils with severe SLCN (identified as red on the system). It was recommended not to group EAL children with SLCN children in small group interventions due to their different needs.

Evidence from observations of small group intervention sessions indicates that nine of the ten schools visited included one or more EAL child in their intervention groups (the number of EAL children in intervention groups ranged from none to four). In all cases observed, schools grouped EAL children with SLCN (blue) children despite the advice provided in the training sessions. The prevalence of this practice and interview data from both teachers and TAs indicated that they perceived the small group interventions as suitable for EAL children. Pupils defined as EAL in the monitoring data (based on assessments carried out in school as recommended by the developer) were more likely to require universal, targeted, and specialist support compared to non-EAL pupils. Just under half (49.2%) of EAL pupils were classified as requiring no additional support, compared to 77% of non-EAL pupils (see Table 33), suggesting that schools may have been justified to include EAL children in targeted intervention groups.

Table 33: EAL status and screening status, intervention pupils

	Clear %	Universal %	Targeted %	Specialist %	N
Not EAL	76.84	7.47	10.61	5.09	924
EAL	49.22	26.56	16.02	8.20	256
N	836	68	139	137	1180

Source: Developer monitoring data. Row percentages.

In interviews, both teachers and TAs identified particular benefits for EAL children. When asked whether they adapted their approach with the Infant Language Link learning materials and strategies specifically for EAL children, there was no evidence of teaching staff doing this in any substantial way. However there were multiple testimonies from staff that the Infant Language Link approach works well to meet the evolving needs of EAL children within the whole-class approach. The four core strategies were often mentioned as helpful when working with EAL children, with most frequent mention of 'break it down' and 'keep it visual', as illustrated below:

> *'Yes, absolutely. I would say that there was a significant improvement for them. If they're seeing things visually and hearing them and the chunking down. I think all of that would support them, yeah' (teacher interview).*

The teacher in one school perceived particular benefits for EAL, SEN, and disadvantaged pupils taking part in the small group targeted sessions, particularly in improving comprehension and reducing cognitive load for these groups in the whole-class sessions:

> *'I feel like obviously I'm kind of teaching language all the time but I'm not specifically teaching 'the ball goes under the bed', you know, so that specific time for children with EAL, SEN, or disadvantaged pupils is really, really beneficial, because, one, if there is a lot of language that they're missing it must be quite stressful. It can be, like, "Oh, what's going on"—although I do so much to support, it can be like, "Oh, this is overload, I don't know what's going on"' (teacher interview).*

The below interview extract indicates there were practices of pairing EAL children with children identified as having mild to moderate SLCN (blue on the Infant Language Link system). Potentially these practices contradict the advice given in the materials and training yet they are perceived by the TA as working well for both children:

> *'Because I think that they all actually—although they are very different, the blues get a lot from it but they are also very able, whereas I think then [name], you've got the language barrier of the fact that, yes, he's great at language but he can't speak a lot of English, so even explaining something to him is very, very different to how I would explain it to [name] in his group. But what we tried to do is to put them with a blue that we thought would kind of help them, like [name] and [name]. [name] has got [name] which, yes, he's EAL but he's still very high and I think that has actually helped them both a lot. So even though I don't necessarily structure it differently I think that I naturally think about how I am explaining things slightly differently. I definitely slow it down for [name] and [name]' (TA interview).*

Other reported benefits for EAL children included increased confidence and participation in the classroom. In addition, teachers perceived the screening tool outcomes as particularly useful for EAL children in identifying their specific areas of need. These were then addressed by the teacher in whole-class teaching. One teacher indicated that the detailed nature of the screening tool results allowed them to identify areas in which EAL children needed targeted support—such as with pronouns and prepositions. The need for this specific support had not been identified by staff through their daily interactions with the children, so the screening tool was seen as particularly beneficial for identifying individual support needs for EAL children.

Impact on children from disadvantaged backgrounds

One SENCO stated that the decision to participate in the study was influenced by the need for universal provision for socioeconomically disadvantaged children who demonstrated speech and language needs yet had no specific diagnosis:

> *'Everyone was keen, obviously, because this is a particularly deprived area—so a lot of our children are Pupil Premium and free school meals, so it's important that we give as much as we can on a universal level and a lot of our children come through with a speech and language delay, or disorder, or other various challenges to do with their communication and learning in general … So, yeah, in order to support these children when actually there is not any specific diagnoses there for them, then we need to try and do a more generalised approach' (SENCO interview).*

In the same school, small group work was considered particularly beneficial for disadvantaged children:

'Yeah, I think that … this is kind of hard to say what aspect is making the difference for disadvantaged pupils but I do think that any kind of intervention, or not any—obviously it needs to be a well-run intervention … but just to have that group setting, focus work, small group work is really, really good for disadvantaged pupils … I mean, maybe I'm generalising here, but they might not be getting that support at home so that one on one support is good' (teacher interview).

Similarly, in one school, targeted intervention sessions included vocabulary that was unfamiliar, particularly identified as an issue for disadvantaged children:

> *'So she did them but she was like, "Oh, I'm not sure how much the children understood or whether because it didn't match up they couldn't understand it", and then she said with the language and vocabulary of the children that they didn't understand some of the words that were in there. And we do find that a lot anyway when we have speech and language reports, especially for our higher needs children, when they're looking at sort of the semantics and understanding of words. If they are shown a picture they can name it in what they think it is, but it's not the official name for that, and we find that a lot with our children because they don't have a lot of access to vocabulary and new experiences and so on. Again, that is part of being in the disadvantaged area that we're in and the catchment that we've got as well and we do find that a lot with them. So, again, it is developing that as a school and making children aware of that and letting them experience and exposing them to that as well' (SENCO interview).*

> *'Yeah, absolutely. Some of the children that are in [name]'s group are some of our disadvantaged group, so it's another offer for those children that they need, in particularly our children again as I mentioned, our EAL, they need this additional support with their speech and language because we know that they don't always have a good language role model at home, so we have to be that at school and we have to provide those opportunities" (teacher interview).*

These examples illustrate the value placed by teaching staff on both the whole-class and targeted intervention components of the programme for children from disadvantaged backgrounds. The benefits are perceived as the opportunities for individual attention and support for children in the small groups, exposure to rich vocabulary, and the opportunities for children to be exposed to a positive language role model at school. This evidence suggests that teaching staff are contextualising disadvantaged children's learning with practices at home, as well as those in the classroom. The broader Infant Language Link programme provides resources targeted at families as extension activities to the work children would complete in class. While these materials were not part of the programme or the theory of change, the connections which staff make with home learning suggest that there is value in further considering a range of possibilities for parental engagement with varying levels of guidance. This could involve offering family learning events led by an SLCN specialist or through home learning.

IPE RQ5 What evidence is there that schools have changed their speech and language teaching and learning practices in response to the intervention, compared to business as usual?

This section presents evidence of changes, if any, in schools' speech and language practices, compared to typical practice. Based on interviews and survey response, key findings indicate that:

- most schools, including control schools, reported few changes in teaching approaches during the trial;

- the Infant Language Link screening tool was used alongside existing systems, helping to build a fuller picture of pupil needs but not replacing other tools; and
- TAs reported more noticeable changes in practice, such as shifting to small-group work and using clearer tracking methods for pupil progress.

Overall evidence of changes in wider practice during the trial

Table 34 shows that most respondents in control schools at post-intervention report making no changes to their speech and language practices with pupils. This figure varies according to respondent group, with more teachers (25.5%) having made some changes over the study period than TAs (17.4%) or SENCOs (18.8%). The survey also included a question asking respondents to specify the changes made. One school reported employing a specialist teacher, another had hired a private speech and language therapist. Specific interventions were also mentioned, namely NELI and Welcomm, both cited by two respondents, although one also stated that the school was moving away from NELI. One school said that more time was given, whereas another said that less time was available as the number of children requiring support had increased. While most control respondents indicated that there had been no changes, the diverse responses from those who answered this question reflect the range of approaches adopted in schools.

Table 34: Since September 2023 have there been any changes in your speech and language practices with the children?

	Teacher	TA	SENCO
Yes (please specify)	25.5%	17.4%	18.8%
No	74.5%	82.6%	81.3%
Total	55	23	32

Respondents: staff in control schools at post-intervention.

The interviews with staff in the intervention schools suggest that although most schools did not run any formal language interventions alongside Infant Language Link, they generally reported that they had good whole-school and whole-class practice already in place (see RQ2).

Identifying students in need of support

Table 35 displays the results from a set of survey questions on the methods used by teachers to identify children needing support with speech and language. Only responses from individuals participating in both the pre- and post-intervention surveys are included, leading to a low response rate (52 of 162 schools, or 32% at post-intervention). The percentage of teachers using a speech and language screening tool increased in intervention schools (32% pre-intervention, 43.5% post-intervention); again, this is based on a low response rate. Of the nine respondents who reported an increase, five stated that it was Welcomm, while local authority provision, NELI, and, unsurprisingly, Infant Language Link were also mentioned. It also increased in control schools, from 12.5% at pre-intervention, to 27.6% at post-intervention, although very few respondents named the tool used. Where it was mentioned, NHS screening tests, Talk Boost, NELI, and Buzz Therapy were cited.

While this data does not provide conclusive evidence around changes to practice in identifying the children who need support with speech and language, it does provide insight into business as usual. A variety of interventions and screening instruments are used in schools, and the staff survey has shown that some were in use before and during the delivery period in both intervention and control schools. In terms of the implications for interpreting the results, it was acknowledged at the outset that due to the widespread use of early language interventions it would be difficult to run a trial without other interventions taking place in school during the study period. The range of interventions being used in control schools and alongside Infant Language Link is probably reflective of real-world conditions.

Table 35: Methods used to identify children needing support with speech and language

	Control pre	Control post	Intervention pre	Intervention post
Using a speech and language screening tool	12.5%	27.6%	32.0%	43.5%
Detailed speech, language, and communication assessment by a speech and language therapist	54.2%	58.6%	48.0%	39.1%
Using a tracker tool (for example TalkBoost tracker)	8.3%	6.9%	12.0%	4.3%
Discussing children's speech and language needs with their parents	83.3%	93.1%	92.0%	82.6%
Reports of parental concern	75.0%	79.3%	68.0%	73.9%
Observing and assessing children's speech and language as part of daily interaction	87.5%	86.2%	76.0%	87.0%
Total	24	29	25	23

Respondents: teachers responding to both pre and post surveys (but not necessarily every item).
Multiple response questions: column and row percentages do not total 100%.

The school visits provided further insight into the methods used by teachers in intervention schools to identify children needing support with speech and language. Schools reported that the screening tool was used in conjunction with other assessments, such as WellComm, NASSEA, Insight, Talk Boost, Read Write Inc, and local authority SALT screeners. Several schools reported monitoring and flagging up children through teacher observations and regular staff meetings, sometimes in combination with local authority screeners or speech therapist case history forms.

While the screening tool was valued, staff generally spoke of it as supplementing pre-existing systems rather than replacing them. This integration was seen as helpful in building a fuller picture of a child's language needs. Moreover, while the standardised screening assessment was generally deemed effective, with many schools reporting that it identified children in need of language support that had not been flagged through other methods (see RQ3), staff identified several barriers to using the screening tool in future practice, including programme cost, the time needed for screening, as well as some staff questioning the usefulness of the detail provided from the screening to offering whole-school language support, which has to be the preferred route due to limitations in schools' capacity to deliver targeted interventions:

> *'It is helpful to think of it in those broken down areas, that was useful. But I suppose at the end of the day I guess there is a limit to what we can offer intervention-wise, so there is only so far that … the [breaking down is] useful … because sometimes if you're looking at reading comprehension, for example, you don't necessarily completely isolate an intervention on comprehension because it needs a wider approach to it. So it is useful to know, and it's interesting, but at the end of the day the approach that we go about it still isn't massively changed. Although it is nice to know that the areas are identified on the system, and then the interventions themselves do target those areas to, and in a sequence as well, starting with listening isn't it, and then it moves on' (SENCO interview).*

The screening tool in combination with the other assessments also contributed to more structured tracking of pupil progress in speech and language. Many teachers reported changes in how they approached targeted children, particularly by focusing more on those flagged by the screening. Several TAs and teachers mentioned that the tools gave them a clearer method to monitor how well children were responding to interventions. Overall, the screening tool was deemed more effective and supported more structured and more detailed tracking of pupils in need of speech and language support, although the practical limitations should be noted.

Evidence of change in speech and language teaching and learning practices

The evidence presented regarding the impact of the programme on teachers' and TAs' understanding and skills (RQ2) indicates that the impact on teachers' speech and language teaching practices was limited, mainly because those espoused by Infant Language Link were recognised as good practice and, therefore, already in use.

The initial pupil screening, while deemed very time-intensive (see previous section IPE RQ5: Identifying Students in Need of Support) was also perceived as adding valuable information to help schools provide support to children, particularly those with moderate speech and language needs. More changes in the practices of TAs as a result of the implementation of the targeted intervention were also observed, as compared to teachers' practices, including a change from working one to one to group sessions, as well as providing schools with helpful resources and new approaches to tailored support. In general, schools perceived the small group intervention as the core of the programme, and this is where most staff attention was directed.

School staff recognised the importance of a whole-school approach but also indicated that they focused their attention on Year 1, mostly citing limited resources and a desire to see the effectiveness of the programme first before considering its implementation more widely. It should be noted that Infant Language Link is intended to be a whole-school approach to maximise its impact on children's oral language development.

IPE RQ6 What contextual factors at school, practitioner, and pupil level impact on the implementation of the programme?

This section reports on contextual factors impacting on the delivery of the programme. Barriers and facilitators to implementation are discussed. Factors in the broader implementation environment impacting on respondent perceptions of the programme are also explored.

Key findings based on interview data with teaching staff indicated:

- good quality communication and an emphasis on speech and language as school priorities were identified as contextual factors facilitating the intervention;
- case study settings in which there were pre-existing, whole-school approaches to speech, language, and communication support perceived the programme as an enhancement to existing practice;
- TA knowledge and previous experience with speech and language were identified as important factors for successful implementation;
- a lack of time to explore the full range of resources provided by Infant Language Link was identified as a barrier to implementation; and
- limitations in TA time to deliver the targeted intervention sessions was identified as a barrier to implementation.

Contextual factors facilitating implementation

One contextual factor that emerged from the staff interviews as facilitating implementation was good quality communication and an emphasis on speech and language as school priorities—identified by some schools as the main area of need; in one school it was described as a priority across the curriculum through all stages. The use of Talk for Writing was given as an example of this: its use was observed in a number of the classrooms visited. Focusing on SLCN as a priority was also evident in schools that described having regular, school-wide staff training sessions on these areas such that all staff were aware of its value in supporting children. Other examples of school commitment to good quality speech and language included a school SEND policy to collect information on children's speech and language progress on entry from nursery to the reception year—an approach communicated in a letter to parents. In all these cases, the pre-existing whole-school approaches and commitment to good quality speech, language, and communication contributed to perceptions of Infant Language Link as a good fit and an enhancement to existing practice.

As the targeted intervention sessions were almost entirely dependent on the TA for effective delivery, teaching, and leadership, staff highlighted in interviews that TA knowledge and previous experience with interventions and with speech and language as important factors for successful implementation. In one school the SENCO said that TAs were organised by need rather than by class and that a specialist speech and language TA was working at the school four afternoons a week.

This TA was able to draw on their specialist knowledge to deliver the sessions effectively. In one school the project lead said that the TA responsible for the targeted sessions was experienced in delivering interventions, which was considered an enabling factor. In further conversations with this TA, they recalled having previously been in regular contact with speech and language therapists visiting the school and described attending weekly staff meetings at the school, some of which were dedicated to speech and language support. Despite this not being official training, the TA felt it had provided necessary knowledge and understanding.

Organising TAs into teams focusing on a specific area and thus developing their specialism was identified as an enabling factor for implementation. One school had a 'communication and interaction team', which included TAs working with reception children and the TA delivering the programme. Being part of this team was associated with TAs developing SLCN as a specific area of expertise and increasing their enthusiasm for working with the children on these particular aspects.

Contextual factors presenting barriers to implementation

Staff from a number of schools mentioned during interviews that they lacked the time to explore the full breadth of resources made available by Infant Language Link. This meant that most of the schools visited had not used the resources in the Spread the Word pack as discussed under IPE RQ4 (see Use of Infant Language Link Materials in Whole-Class Sessions). There was also the perception among teachers and leaders that some of the provided whole-class resources performed a similar function to those already in use. As a result, there was reluctance to abandon existing practice and resources which were already perceived to have buy-in at whole-school level (such as Widget symbols, similar to those in the whole-class provision).

TA availability was identified as a barrier to implementing the targeted intervention sessions. A number of schools said that TA time is limited and that due to funding issues there is not always a dedicated classroom TA. TAs juggle multiple responsibilities, including those of supporting individual children with special educational needs. Some staff interviewed described occasions where the TA had to abandon an intervention session to fulfil more urgent duties.

Similarly—relating to TA time to deliver the intervention—one SENCO and one teacher (from different schools) identified a high proportion of children in the Year 1 class who were eligible for the targeted intervention. Due to limits on TA time and the limited number of children who could participate in an intervention group (recommended as no more than four per group), not all children identified as eligible for the intervention received it. As discussed under IPE RQ1, data provided by the developer shows that targeted pupils mostly received the intended support although 40% of schools did not deliver the intended number of sessions and dosage varied between pupils.

TA availability was also dependent on behavioural issues in the classroom, where the TA is essential in supporting the teacher in classroom management. The teacher believed that behavioural issues were generally more severe at the start of the school year or immediately after a school holiday. In this teacher's view children tended to settle after a period of being back in the classroom, which also made it easier for the TA to be absent from the classroom to deliver the targeted intervention sessions. This suggests that commencing an intervention immediately after a school holiday may be difficult.

Like the teachers, several TAs reported difficulties in finding the time to fit interventions into a busy school day, especially given the time constraints of a 30-minute session. On the one hand, these challenges pertained to finding 30 minutes in the day; on the other, they pertained to keeping learners engaged in the activities for the full 30 minutes, particularly when groups were smaller than four students. It should be noted that trying to adhere to the 30-minute target for the session was part of schools' intention to follow the protocol for the study as closely as possible.

Pupils leaving the school halfway through the intervention or joining once the intervention had started were also identified as barriers to implementation. Potentially, children who needed the intervention were not included due to joining late, or the intervention group was reduced to fewer than four due to long term absence, which in turn impacts on the interaction dynamics in the group. Related to pupil mobility, teachers identified persistent absenteeism as an issue with receiving the full targeted intervention as well as, in cases of some EAL children, absences due to extended family visits abroad during term time.

Issues of time and capacity were also related to the screening phase of the programme. While schools had adhered to the requirements for screening pupils in the Year 1 intervention class, teachers and school leaders perceived the time needed to screen all children as impacting on capacity and on classroom delivery as teachers were withdrawn from classes to complete the screening.

A further consideration for delivering the targeted interventions was that an additional space was needed for running the sessions. In some fieldwork observations, it appeared that school corridors were being used to deliver the targeted sessions. This was sometimes noisy and, in some cases, took place adjacent to other targeted sessions, which could be a distraction. While this may not be an issue for all children, for some, particularly those with neurodivergence, the benefits of the session may be reduced due to lack of access to a quiet space for delivery.

Factors in the broader implementation environment

Contextual factors that influenced the perceived need for a programme such as Infant Language Link were identified. In one school the SENCO commented that the local authority had moved to an EHCP-only (Education Heath and Care Plan) model of funding specialist speech and language provision for children. This left a number needing speech and language support without funding. A general reduction of local authority funding for speech and language support was identified by a number of the schools visited. One SENCO described longer waiting lists for referring children to external NHS support impacted by an increased caseload for the local authority area. Infant Language Link was therefore seen by these schools as filling the gaps in speech and language external support, which was no longer available for a large number of children. This potentially influenced school expectations of the materials and approach to work at the level of severe speech and language needs, meeting the needs of children who would usually be supported at the specialist level, which the programme was not designed for.

A further related factor determining the perceived need for the programme was parental engagement. One SENCO stated that children accessing speech and language therapy from the NHS was dependent on parents keeping the appointments given. In cases where parental engagement with the external service was inconsistent, the school lost the child's place on the caseload. The school, therefore, saw the programme as a way to provide this additional support for children in-house, relieving the burden on parents to attend external appointments outside of school hours. Once again, however, children referred for external NHS support would be those with severe SLCN, and the support provided by Infant Language Link would not be adequate for their needs. This suggests that schools' expectations of the programme could be unrealistic, despite the information provided during the recruitment phase.

IPE RQ7 Are there any unintended consequences of the programme?

Unintended consequences were reported to be minimal, but some challenges included:

- staff, particularly TAs, needing to reallocate time from other duties to deliver the programme, particularly to complete the time-intensive assessments; and
- some pupils occasionally missing lessons or social activities, prompting staff concerns about balancing programme delivery with classroom engagement.

Survey respondents were asked directly about whether participation in the programme caused any unintended consequences. This was a free text question. Of the 36 responses received, most (n = 23) indicated that no unintended consequences were encountered. One school mentioned that running the programme alongside existing school activities enhanced the opportunities for pupil learning but whether this was unintended is debatable. 'Minor timetabling issues' were also mentioned. Other responses cited more substantive changes including the need to pause delivery of other interventions and staff being diverted from other activities. These themes were also apparent in staff interviews, which highlighted three key concerns about unintended consequences.

The need to reallocate time and resources

First, an important unintended consequence was the reallocation of time and resources to prioritise Infant Language Link. Balancing the programme with other activities was seen as challenging. Many TAs reported having to adjust their schedules

significantly, often reducing the time spent on other interventions, which generally took the form of one to one support but sometimes included other initiatives to support children with language needs such as drama sessions. Interviews with SENCOs confirmed this reallocation of TAs' time:

> *'I was just saying to [our TA] before, prioritise this over the drama interventions, but whereas normally we would try to have the interventions with fairly equal weighting to each other but we wanted to give this a really good shot and so it has taken priority, which I suppose is at the expense of some of the drama sessions. Because if there was a session when we have lost a day for whatever reason, because of an event, at the moment a drama session is lost over a Language Link one, so there is a finite amount of time and there is some loss that happens there' (SENCO interview).*

> *'[Our TA's] caseload obviously has had to lower and hopefully that will have a positive impact as a means to an end' (SENCO interview).*

However, while TAs focused more on the immediate workload implications, teachers and SENCOs largely viewed the scheduling compromises as manageable with good planning. SENCOs and teachers also highlighted the impact of time-intensive assessments:

> *'The assessments took forever, like I say, assessing 90 children ... So the reception TA obviously was off timetable for the whole time of doing that and it took her a number of weeks and it did us before Christmas and we were all hands on deck. Any time anyone was spare I was like, "Can you just?" Yeah, half an hour per child when you've got 90 children, so that had an impact' (SENCO interview).*

Pupils missing classroom teaching

A second concern raised was pupils missing parts of lessons or other activities due to Infant Language Link sessions. Interview responses indicate that lessons or assemblies were sometimes missed. TAs seemed more attuned to the emotional and social consequences of these absences, while teachers were more focused on balancing curriculum demands:

> *'I suppose the only thing is that the children have to spend so much time outside of the classroom, so they aren't seeing parts of their own learning in a way. It's hard because you can't do both, can you. There has to be a little bit of a give and take so we never take them out during maths and English, it's always during the lessons, or during assembly, or something like that. But then very occasionally those children will then say they feel like they've missed out because they missed out on seeing their friends getting a trophy or something I suppose. But it's hard' (TA interview).*

The need to reconcile Infant Language Link methods with existing phonics practice

Lastly, in three schools, TAs reported challenges in trying to reconcile Infant Language Link methods with existing phonics practice, including concerns about confusing children. TAs noted the difficulty of shifting from phoneme to syllable-based approaches to helping children break down words:

> *'But a couple of the activities, like the onset and rhyme and things like that, that I had never done anything with that before in phonics, in English, I had never done that. Also, things like in the earlier sessions, syllables. Although obviously we know what syllables are, I had never taught a child or broken down a word in that way. Because I think because of phonics it can get a bit confusing, and that was quite a tricky session actually' (TA interview)'*

Despite these three concerns, overall, staff members considered the benefits of children's participation in the assessments and small group interventions to still outweigh these negative unintended consequences. Moreover, there was a shared recognition of professional benefits. Project leads, particularly in their SENCO role, were more likely to frame these benefits as school-wide, such as improved tracking of pupil progress and enhanced collaboration and communication among staff. TAs, on the other hand, focused on personal growth (see RQ2).

Cost

Infant Language Link is available to schools commercially. The main financial cost is the annual subscription fee, which is charged per school as opposed to per pupil. In the first year, this is £450 including VAT at the time of writing. In subsequent years, there is a slightly reduced rate of £427.50. Over three years, this amounts to £1,305. Schools taking part in the trial as members of the intervention group were given free access to the programme for the study period.

Calculating per-pupil costs based on a class of 25 per school, assuming that only one class takes part, gives a per-pupil cost of £14.49 per year. Schools can provide the programme to as many pupils from reception through Year 2 as their staff time permits, although calculations assume that only one teacher attends the training, and one class per year receives the programme.

Aside from the monetary costs, staff time is needed. This begins with the initial training, which is only required at the start of the first year and is followed by time for preparation and delivery. Other prerequisites were internet access, a computer, and printing facilities. These items are not included in the cost calculations in Table 36 as it was expected that schools would have them already. All figures on financial costs and staff time requirements were obtained from the developer at the end of the programme. Some of this information was presented in the protocol but the figures were updated after the trial to reflect increases in some costs over the delivery period. The protocol stated that schools would be asked in the post-intervention survey whether the developer assumptions matched their experiences of delivering the programme but ultimately this was dropped to limit the questionnaire length.

Table 36: Monetary cost of delivering Infant Language Link

Item	Type of cost	Cost	Total cost over 3 years	Total cost per pupil per year over 3 years
Annual subscription fee	Running cost per school	£375 + VAT Year 1 £356.25 + VAT Year 2 £356.25 + VAT Year 3	£1,087.50 + VAT	£1087.50/25/3 = £14.49

Table 37 shows the staff time required to implement Infant Language Link. This is, again, based on data provided by the developer at the end of the trial. The cost estimates are indicative as it is not expected that new staff or supply cover would be hired, particularly as the whole-class element of the provision is included in regular class time, and the training sessions are online webinars lasting no more than 90 minutes. As such, these additional costs are not incorporated into the main cost estimates presented in the executive summary and below in Table 37. However, if schools were to pay for supply staff to cover all of the time required for training and delivery, it is estimated that the costs would increase by £1,918 over three years, adding a further £26 or so per pupil to the total cost of the programme. In terms of the specific costs itemised in Table 37, staff training and delivery were discussed in detail in the Intervention section of this report. The developer also expects that participating staff will allocate time to prepare the whole-class and targeted sessions, and that the SENCO would need time to liaise with these staff about implementation, timetabling, and any barriers to delivery.

Table 37: Time requirements of Infant Language Link and estimated supply cover costs

Item	Type of cost	Time	Total cost over 3 years	Total cost per pupil per year over 3 years
Staff training	Start-up cost (staff time) per school	SENCO 3.5 hours Teacher 2.5 hours TA 2.5 hours Total 8.5 hours	*£190 (1 day of teacher pay) + **£30.75 (2.5 hours of TA pay)	
Preparation	Running cost (staff time) per school	TA 6 hours Year 1 only Teacher 6 hours Year 1 Teacher 3 hours Year 2 Teacher 1 hour Year 3	*£285 (1.5 days of teacher pay) **6 hours of TA pay (£73.74)	
Delivery	Running cost (staff time) per school	TA 8–10 hours per year initial pupil screening TA 16 hours per year intervention groups	**£884.88-£958.62 (72-78 hours of TA pay)	
Oversight	Running cost (staff time) per school	SENCO 8 hours Year 1 SENCO 4 hours Year 2 SENCO 2 hours Year 3	*£380 (2 days of teacher pay)	
Total estimated supply cover costs			£1,918.11	£1,918.11/25/3 = £25.57

*Source for teacher supply cover: 'NASUWT | Supply Teachers' Pay (England)', £190 per day (between M3 and M4 on pay scale).
**Source for TA pay: 'National Pay Scales for Teaching and Education Leadership Occupation Codes - GOV.UK'. £12.26 per hour.

Table 38: Cumulative costs of intervention (assuming delivery over three years)

	Year 1	Year 2	Year 3
Infant Language Link	£450	£877.50	£1,305

Conclusion

Table 39: Key conclusions

Key conclusions	
1.	Year 1 pupils in Infant Language Link schools did not make any additional months' progress in receptive and expressive language, on average, compared to pupils in control schools. This result has a high security rating.
2.	Among Year 1 pupils eligible for FSM and pupils with English as an additional language, those in Infant Language Link schools did not make any additional months' progress in receptive and expressive language, on average, compared to those in other schools. These results may have lower security than the overall findings because of the smaller number of pupils.
3.	The subgroup of Year 1 pupils selected for the targeted support made one fewer months' progress in receptive and expressive language, on average, than a comparison sample of pupils from control schools. These results may have lower security than the overall findings because of the smaller number of pupils.
4.	The whole-class component promoted dialogue between teachers and children and between children, for example through paired talk, but it was not seen by teachers as distinct from usual high quality oracy teaching practice. This similarity of the whole-class component to business as usual may explain the lack of additional progress for pupils in intervention schools as compared to those in control schools.
5.	The targeted intervention enabled children to practice precision and clarity in spoken interactions and was enjoyed by pupils and staff. Teachers and TAs reported increased pupil language confidence following the targeted sessions. However, it was found to be resource-intensive in its use of TA time and there were instances of displacement of other activities.

Impact evaluation and IPE integration

Evidence to support the logic model

Teaching staff implemented the programme with fidelity, delivering most inputs and outputs specified in the logic model in both the targeted and class provision. A few exceptions were the SLCN audit and the use of classroom resources. While the Infant Language Link programme provided schools with the SLCN audit as part of the Spread the Word pack, there was no evidence in the interviews that staff were aware of the audit tool meaning that a school action plan for SLCN was not developed. Use of resources was consistent in the targeted intervention sessions but less so in whole-class sessions. A consistent message from teaching staff was that the whole-class resources were too similar to those already in use. Notably, none of the case study schools had used the Spread the Word activity pack, which provided resources for use in unstructured break time, lunch time, or in the playground. Infant Language Link also provided further optional support materials for individual pupils who were not making progress during the targeted sessions. However, as this was optional and not a core component of the programme, no data on their use was collected in the IPE component of this evaluation.

There was strong evidence in the case study interviews of the value of the Infant Language Link screening tool—not only in identifying more children with below average oral language skills, but also in providing granular speech and language data on each pupil. As a result of the screening data, teachers reported having a clearer sense of the specific language needs of individual children and adapting their approach in the classroom in response to this evidence. As stated by the Oracy Commission, there is no consistent monitoring of speech, language, and communication beyond the reception year despite the increase in the proportion of children not reaching the expected level for language and communication by the end of Foundation Stage 2 (Oracy Education Commission, 2024). Language screens such as the Infant Language Link screening tool, which is designed for pupils from reception to Year 2, could provide such monitoring.

Furthermore, evidence of TAs consistently using the Infant Language Link core strategies and the designated resources in targeted intervention sessions was strong. These small group sessions were well received by the children who were observed, and school staff reported improvements in pupil social confidence, confidence with learning activities in the classroom and in interventions, and enjoyment in taking part in the targeted sessions.

Evidence of teachers making a qualitative change to their existing practices with speech and language also emerged, although this was more limited. Even though teachers were observed to be implementing the four core strategies of the programme they did not perceive this as new practice or different from business as usual. There was little evidence of take-up of whole-class Infant Language Link resources due to perceived overlap with existing resources. Similarly, there was no evidence in the IPE data of use of the whole-school resources provided in the Spread the Word activity pack.

Interpretation

Initial pupil screening

Initial pupil screening is a key feature of Infant Language Link. Ordinarily, screening takes place when pupils are in the reception year, but as this trial evaluated the programme as delivered to Year 1 pupils only, it also took place in Year 1. This is a deviation from usual delivery, which was tailored for this trial as described in full above.

Most intervention schools used the screening tool as intended, yet not all did. Screening children individually was perceived as time consuming and some schools struggled with capacity. The principle of assessing language needs using a standardised tool is integral to the Infant Language Link approach. It is therefore necessary that the screening takes place at the start of the delivery period so that pupils can be categorised according to need. This can create pressures for the school staff responsible for the screening, as evidenced by the significant minority of intervention schools that did not complete this on time, although the impact analysis of the effects of non-compliance found that the trial results were not affected.

It is difficult to imagine how a programme based on individual pupil screening could avoid requiring substantial staff time. Technology advances, but children still need supervision and support. If it is accepted that standardised screening is a desirable approach then reducing the length of time needed could be explored, although this comes with risks. School staff perceived the data obtained through screening as useful in informing practice and described it as more effective than other approaches to identifying speech and language needs, suggesting satisfaction among those who found the time. In addition, the breakdown of language areas into smaller, focused components was appreciated and seen as supporting planning, even though staff also noted limitations in their capacity to intervene at that level of detail through targeted interventions as opposed to a more global, whole-school approach.

Overall, despite the resource demands of the Infant Language Link screening tool, it was identified by participants as one of the most valuable features of the programme, providing a level of detail around individual children's speech and language support needs, which was reported to be unique to this tool. It is possible that some schools did not fully understand the investment needed. Individual assessments take time, even if standardised and conducted online, and perhaps this could be made clearer to prospective users of the programme.

Whole-class provision

As discussed throughout this report, one of the key features of Infant Language Link is the tiered structure, with whole-class provision accompanied by small group support for children identified by the screening tool as having mild to moderate language needs. The evaluation has sought to explore both of these strands. It was agreed that the headline ITT analysis would focus on the whole-class sample, and that the targeted group could be analysed as a subgroup. The impact evaluation analysed data from baseline and endline outcome assessments that measured pupil ability in expressive and receptive language. A combined measure was developed and analysed as the primary outcome variable. This measure showed no evidence of improved pupil progress associated with the whole-class element of the programme. Four separate scales, two representing expressive language and two representing receptive language, were analysed as secondary outcomes. Two of the secondary outcomes, relating to expressive language, showed a small negative effect (-0.07) and one of the two secondary outcomes gauging receptive language, CELF-5 Sentence Comprehension, showed a small positive effect (0.06), yet the confidence intervals showed that the range of possible results could have included no effect in each case as the trial was not powered to detect such small differences, nor was it powered for multiple comparisons.

The whole-class element aimed to support pupil receptive and expressive language skills through a quality-first teaching approach characteristic of universal support as described in the SEND Code of Practice (DfE and DoH, 2015). It provided multiple opportunities for genuine dialogue between teachers and children and between children, particularly through paired talk, which in turn supported them in building confidence and in practising a variety of language-based tasks. This alignment with existing guidance and practices was perceived as challenging by the teachers who struggled to identify principles, features, or specific approaches in the provision which were substantially different from current practices. This perceived similarity to business as usual is a possible explanation for the lack of a positive effect on pupil language development associated with the whole-class provision, particularly when many schools in the study were already using other interventions although not necessarily with the same age group. The work of the Oracy Commission (2024) and of Voice 21 on introducing good practice in oracy in the classroom has had substantial take-up, with over 1,000 schools across the U.K. registered as Voice 21 Oracy Schools. Therefore, many schools now implement some form or oracy teaching as part of business as usual. This suggests that a clearer articulation of the Infant Language Link approach in the classroom as distinct pedagogy or specific resources would be helpful for teachers to differentiate it from business as usual and apply it consistently in the whole-class context.

Infant Language Link materials in the whole-class sessions were not always used. While use of the four core strategies was observed, it was not clear whether the use of these strategies and resources was considered new practice or whether this was an extension of ongoing practices within the school. Whole-school resources and strategies were considered similar to existing practices. There was no evidence of schools using the Spread the Word activity pack. This pack contained printed resources for use during break times, within and outside the classroom, including activities to use at lunchtimes and in the outdoor playground. These resources were aimed at extending the focus on speech, language, and communication beyond the classroom and in this way had potential to develop a communication friendly environment as a whole-school approach. However, there was consistent evidence in the schools visited that the Spread the Word resources had not been used. Again, this suggests that implementation may have not been exactly as intended, and that pupils did not have opportunities to fully benefit from the whole-class resources and activities provided by the developer, which in turn may have affected the trial results.

FSM pupils

The impact evaluation found no additional progress for FSM pupils in intervention schools. Interview data indicated that teaching staff and senior leadership perceived benefits from both the whole-class and targeted intervention components of the programme to children from disadvantaged backgrounds. The benefits were identified as opportunities for individual attention and support for children in the small groups, exposure to rich vocabulary, and the opportunities to be exposed to a positive language role-model at school. This evidence suggested that teaching staff were contextualising disadvantaged children's learning with their practices at home as well as those seen in the classroom. The broader Infant Language Link programme provides resources targeted at families as extension activities to the work children would complete in class. While these materials were not part of the programme or the theory of change, the connections which staff made with home learning suggest that there is value, for disadvantaged children in particular, of extending the reach of the programme beyond the classroom and into home learning or via family learning events.

EAL pupils

Pupils with English as an additional language also saw no additional progress in language development as measured by the impact evaluation. Infant Language Link screening data indicated that EAL pupils were more likely to require universal, targeted, and specialist support compared to non-EAL pupils. EAL children were frequently included in targeted sessions. Teachers and TAs reported increased levels of social confidence and participation for EAL children as a result of exposure to the programme, as was the case for all children. EAL children's positive response to the programme is not surprising as the four core strategies as defined by Infant Language Link are also characteristic of recommended teaching practice for EAL learners (Conteh, 2023; Drury, 2007; Bell Foundation, 2025). However, it is also well documented that the development time for achieving conversational language proficiency in their second language for EAL learners is one to three years (Cummins, 2000; Conteh, 2023; Tabors, 2008; Drury, 2007). This suggests that despite being included in the targeted sessions, the relatively short span of the delivery period could not have resulted in a tangible difference for EAL pupils'

language and communication skills. In addition, teachers indicated that the detail of the screening tool enabled them to identify specific areas of need for individual EAL children. This demarcates the Infant Language Link screening tool as particularly helpful in monitoring progress for EAL children as evidence indicates that while EAL children may present as fluent in everyday conversational contexts, there are aspects of academic language proficiency where they may require support, yet this may not be evident through everyday interaction (Cummins, 2000).

Pupils receiving targeted support

It was important to study the effect of the intervention on pupils selected for additional support, as they are a priority for the programme. For the targeted subgroup there was a small negative effect (-0.05, CIs -0.244, 0.137) when compared to a group of pupils in control schools achieving similar scores on the baseline assessments, although as the range of estimates again includes zero, there is uncertainty about an effect of such small magnitude based on a small sample size (n = 268). As 40% of intervention schools completing endline testing (n = 32) did not deliver the number of targeted sessions required to be deemed compliant, dosage may also have contributed to this result. This in turn could be attributed to the compressed delivery period intensifying the demands of participation although there is no evaluation evidence to support this.

The impact evaluation results for the targeted subgroup should be considered alongside the positive findings on the targeted provision emerging from the IPE. It is possible that the negative effect reflects the non-linear nature of learning, where pupils sometimes show a temporary dip in skills as increased awareness leads to less certainty before they consolidate their knowledge. Evidence from the research literature (Cummins, 2000; Conteh, 2023; Tabors, 2008; Drury, 2007) suggests a substantially longer period of time is needed—one to three years for developing conversational proficiency—than afforded by this trial.

The targeted groups allowed children to practice expressive and receptive language with multiple turns on each task and to work towards precision and clarity of verbal expression. Observation and interview data indicated that children enjoyed taking part and looked forward to the next session. TAs reported understanding how to deliver the targeted sessions. They found that the targeted materials were easy to locate on the system, were easy to follow, and did not require additional resource preparation beyond printing. This was perceived as helpful in reducing additional preparation workload and to some extent addressing issues with capacity. Removing the need for additional resource preparation further responds to issues raised in other similar programmes' evaluations where resource preparation time was cited as a barrier to effective delivery (Sibieta et al., 2016). TAs were less likely than teachers to express uncertainty over how to deliver the programme, which can be attributed to the highly structured nature of the targeted sessions and the provision of clear lesson plans and specific resources for each targeted session.

However, the targeted component was perceived as scripted and less flexible than usual teaching practices. It provided opportunities for children to practice expressive and receptive skills yet there were fewer opportunities in the small group sessions for dialogue to develop, which is characterised in the literature as supportive, reciprocal, and cumulative (Alexander, 2020). It should also be taken into consideration that withdrawal of children from whole-class activities in order to take part in the targeted intervention sessions could also mean they are missing out on a variety of aspects of learning embedded as part of a broad and balanced curriculum (Ogier, 2019). This form of targeted support is also resource intensive as it requires the TA to step away from the classroom and competes with other activities for staff time. Teachers reported this as a challenge, particularly where the TA was essential in supporting with classroom management or other aspects of classroom support. An intervention which places additional demands on TA time may also preclude smaller schools from taking part where TA support may be less readily available.

Carryover activities—linking whole-class and targeted group provision

A key approach to integrating the targeted and whole-class components of the programme was the sharing of strategies and use of carryover activities between the TA delivering the targeted component and the Year 1 class teacher. These activities aimed to facilitate ongoing discussion around pupil progress and to ensure continuity of good practice across the targeted and whole-class provision. Around half of respondents to the post-intervention survey reported that they had engaged in carryover discussions and activities, indicating inconsistent implementation. This was not assessed through the

agreed compliance measures so any effect on trial impact remains unknown. While there is the possibility that the trial results may have been different had this been followed, it is difficult to pinpoint how the whole-class or small group progress in language development would have been affected. In cases where carryover discussions and activities took place, tracking and sharing children's progress across the programme tiers was perceived as beneficial. Advantages included informing teachers' practice in the whole-class approach and tailoring this to the needs of the children, making the teacher more aware of individual children's specific speech and language needs, and sharing the data with the child's parents to inform follow-up support at home.

To summarise, the impact evaluation found no impact of the programme on pupil expressive or receptive language and the fieldwork conducted in schools provided valuable insights into why this might have been the case. The whole-class provision was perceived by teaching staff to have substantial similarities to existing practice as the key principles appeared to be closely aligned with current government guidance (DfE and DoH, 2015). This often led to schools defaulting toward business as usual, with this part of the programme being difficult to distinguish from approaches already in use. Despite this, the evaluation found that many teachers and TAs felt that they had benefitted from participating and that it had been helpful to their professional development while providing enjoyment and learning for their pupils.

Limitations and lessons learned

Overall, the study provides a thorough evaluation of the Infant Language Link programme as delivered to Year 1 pupils in this evaluation. Recruitment to the trial was strong and participating schools were drawn from across England. Certain regions were overrepresented, yet this was by design given the constraint that schools must not be existing users of the programme, which is already commercially available with uptake largely concentrated in the South East and South West. This geographical spread along with other aspects of the sample profile that appear well aligned with national figures such as OFSTED ratings and school type suggest that the findings are generalisable. Nearly 90% of pupils who completed baseline testing remained in the study at follow-up, strengthening the security of the evidence generated. Nevertheless, some limitations should be acknowledged.

The tiered structure is a distinct feature of Infant Language Link and it was a priority of the evaluation to explore that in terms of examining both the whole-class and targeted elements in the impact evaluation and the IPE. During the setup period the decision to conduct the headline intention to treat analysis on the whole class as opposed to the group selected for targeted support was based on the uncertainty about the number of pupils that would be in the targeted group. Unlike interventions that target a specific number of pupils perceived to be the weakest in a given subject, this programme targets pupils according to performance on the standardised screening tool used at the start of the delivery period, which inevitably leads to the identification of different numbers of pupils from school to school. In practice, some schools had no pupils in the evaluation sample that were selected for targeted support and others had as many as six. While assessing pupil needs according to consistently applied standards is logical, the uncertainty over pupil numbers creates difficulties for trial design and power calculations. For this reason, the targeted group were treated as a subgroup, and the whole-class (or the selected sample) was the main analysis sample.

The programme undoubtedly offered elements of difference from business as usual, specifically the screening and targeted intervention sessions. However, that the analysis of the whole-class component did not demonstrate any impact is probably due to the whole-class strategies being very similar to business as usual. Indeed, the four core strategies are characteristic of commonly used practices across speech and language programmes in circulation in schools and also present in CPD guidance regularly delivered to staff in schools by speech and language therapists. This similarity is also reflected in the reported practices in control schools, as evidenced by the survey data (see IPE RQ2). Many control schools were already employing similar strategies to those introduced in the programme, such as 'thinking about vocabulary levels', which aligns with the Infant Language Link core strategy of 'explain clearly', particularly its emphasis on introducing and reviewing challenging vocabulary. It is therefore unsurprising that little difference between the intervention and control groups was detected.

Another limitation is that the response rates to the post-intervention survey were slightly disappointing. This might have been improved by collecting contact details for individual members of staff within each school instead of relying on lead contacts to encourage colleagues to take part. More than 200 survey responses were collected at both pre- and post-

intervention, although with 166 schools participating there were many people for whom no responses were received. Several of the survey items were specific to certain roles, such as questions relevant only to teachers in intervention schools, which led to small sample sizes in some instances. The data still provides insights into implementation that usefully supplement the impact evaluation results and fieldwork findings, but these should be interpreted with appropriate caution.

Capacity constraints led to a maximum of 20 pupils per class being included in the evaluation sample. This approach meant that some children selected for targeted support were excluded from the study altogether. However, there is no evidence that including these additional pupils would have made any meaningful difference to the subgroup impact analysis, despite the sample size being so small. The method of selecting the comparison group could have been done differently had more pupil-level data been available, although it would have been difficult to justify requesting this personal or potentially sensitive data from schools or the NPD when it was already possible to perform matching based on the most important factor, baseline test scores. The balance achieved on this suggests that the process fulfilled its requirements and that the findings are robust.

Future research and publications

The tiered nature of the programme offered a variety of opportunities for children to develop oracy as a skill (clarity, precision, and confidence in speech) as well as opportunities to enact a variety of dialogic repertoires, as described in the dialogic teaching framework (Alexander, 2020). A further exploration of the data focusing on which aspects of the programme enabled oracy as a skill and oracy as a thinking tool would provide insights into the value of, and possible alignment of, speech and language programmes such as Infant Language Link with dialogic teaching.

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Appendix A: EEF cost rating

Figure 9: 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: Combined Language Measure

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

Threats to validity	Threat to internal validity?	Comments
Threat 1: Confounding	Moderate	Baseline scores were higher in control schools with an effect size of 0.10. Baseline scores were controlled for in the regression model as is the norm so no need for sensitivity analysis. Other observable characteristics didn't show meaningful imbalance. Randomisation was independent and the process was described in the protocol. All baseline testing took place prior to randomisation.
Threat 2: Concurrent Interventions	Low	Concurrent interventions are controlled for in randomisation (including through stratification which explicitly addresses the interventions that were identified as being used across the two arms in the IPE). No evidence suggesting differential uptake of these interventions across the two arms during the intervention period. Not an intervention, but BAU support is very similar to the whole-class support element of the intervention, so likely affects the interpretation of the results. However the targeted element and screening is different from BAU, so overall the intervention as a whole was different from BAU (for a minority of children who received targeted support). Since this is not an issue affecting internal validity (even if it affects the interpretation of the results), this is deemed to be low risk.
Threat 3: Experimental effects	Low	No evidence of contamination. There were small changes in usual practice observed as part of the IPE but they are not likely to be as a result of being in the evaluation (experimental effects).
Threat 4: Implementation fidelity	Moderate	Fidelity and compliance are well defined and aligned to the theory of change. Full/partial compliance were not particularly high (48/80 and 53/80). Compliance was defined by the targeted intervention, whereas the primary outcome was on the whole-class intervention (which included the screening and targeted elements as well), which overall were found to be delivered with reasonable fidelity (but the IPE suggested intervention delivery of the whole-class intervention was not significantly different from BAU).
Threat 5: Missing Data	Moderate	Total missing data was low (10.1%,). Missing data analysis findings were similar to the complete-cases analysis. Differential missing data between treatment groups (12.1% in treatment, 8.2% in control) so potential for bias.
Threat 6: Measurement of Outcomes	Low	Outcome tests were commercial tests that were thoroughly justified in relation to reliability, validity, utility and acceptability. Tests were administered and marked blinded to allocation (where possible – schools might have shared allocation at endline but no indications of bias). No evidence of ceiling or floor effects.
Threat 7: Selective reporting	Low	This study was registered, changes from protocol to SAP but no meaningful change from SAP to report.

- **Initial padlock score:** 5 Padlocks – Randomised Design, with MDES of 0.20 at design, and attrition of 10.1% (rounded to 10%).
- **Reason for adjustment for threats to validity**: -1 Padlocks - Three threats rated as moderate risk. All directions of threat are unknown.
- **Final padlock score:** initial score adjusted for threats to validity = 4 Padlocks

Appendix C: Effect size estimation

Appendix table 2: Effect size estimation

			Intervention group		Control group			
Outcome	Unadjusted differences in means	Adjusted differences in means	n (missing)	Variance of outcome	n (missing)	Variance of outcome	Pooled variance	Population variance (if applicable)
Combined language measure	-0.06	-0.01	1318	.297	1397	.247	.272	
CELF Linguistic Concepts	-0.4	-0.01	1318	22.02	1397	19.63	20.83	
CELF Sentence Comprehension	-0.05	0.06	1318	24.74	1397	22.67	23.67	
RAPT Information	-0.85	-0.07	1318	26.64	1397	30.71	28.79	
RAPT Grammar	-0.36	-0.07	1318	33.60	1397	32.34	33.03	

Further appendices

Please see separate technical appendices report with further appendices:

Appendix D: Recruitment documents

Appendix E: Sample Analysis code

Appendix F: IPE interview and observation schedules

Appendix G: Baseline histograms

Appendix H: School staff questionnaires

Appendix I: Creating a combined language variable

Appendix J: School staff survey results from IPE RQ2

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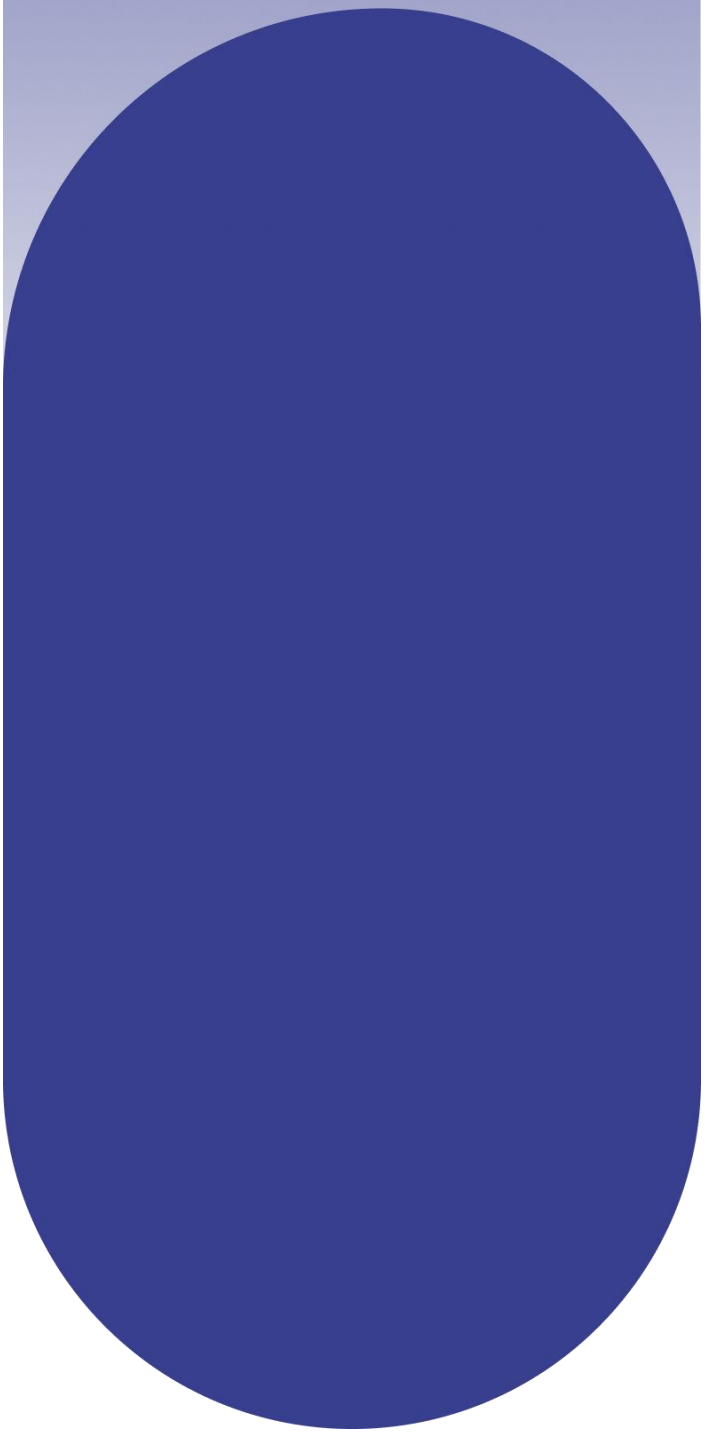

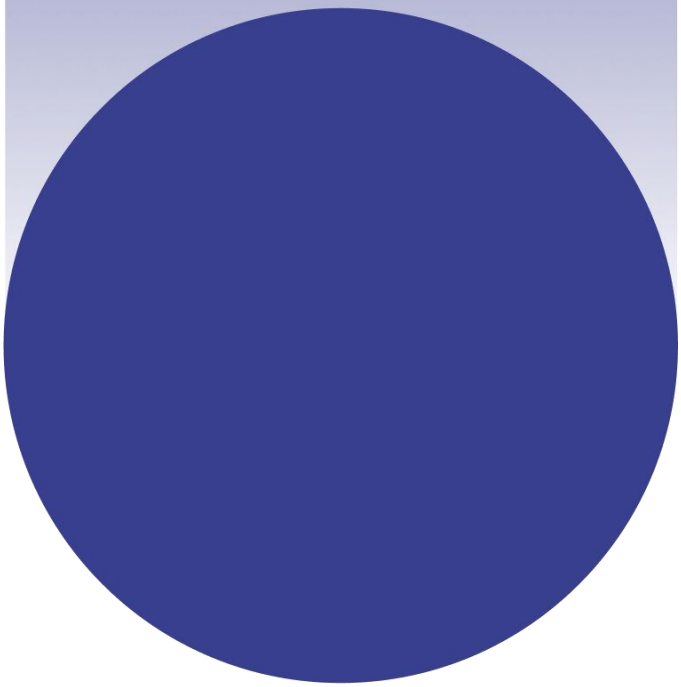

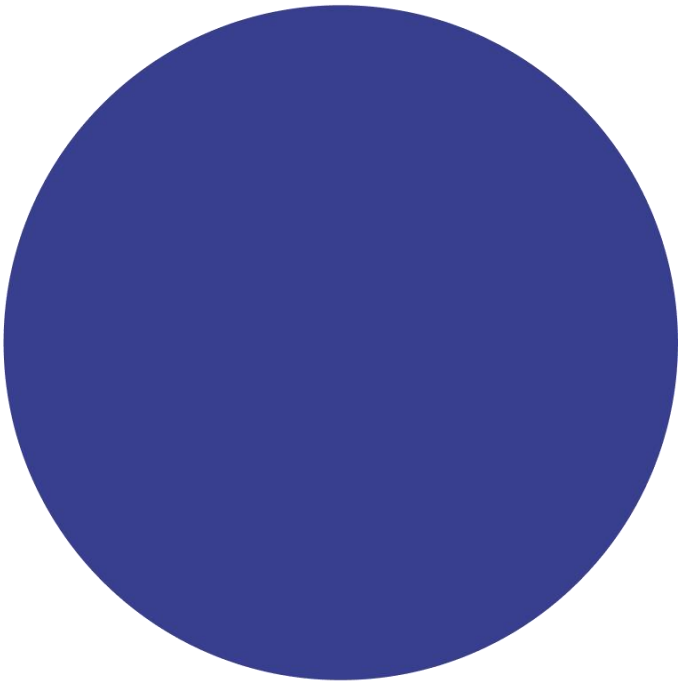

Education Endowment Foundation

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

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