Efficacy Trial of the Communication Friendly Settings (CFS) programme
Evaluation Protocol

Evaluator (institution): University of York and The University of Sheffield
Principal investigator(s): Dr Louise Tracey

Evaluation summary

Project title	Using the Communication Friendly Settings programme to improve children's speech, language and communication, a two-armed cluster randomised controlled trial
Developer *(Institution)*	Elklan Training Ltd
Evaluator *(Institution)*	University of York and The University of Sheffield
Principal investigator(s)	Dr Louise Tracey
Protocol author(s)	Dr Louise Tracey, Professor Claudine Bowyer-Crane, Elizabeth Coleman, Dr Erin Dysart, Professor Carole Torgerson
Trial design	Two-arm cluster randomised controlled trial with random allocation at setting level
Trial type	Efficacy
Pupil age range and Key stage	Early Years Foundation Stage, pupils aged 3-4 years
Number of schools *(at design stage)*	166 settings

Number of pupils *(at design stage)*	12 per setting (approximately = 1,992 pupils)
Primary outcome measure and source	LanguageScreen Assessment https://oxedandassessment.com/languagescreen
Secondary outcome measure and source	Four subscales of the LanguageScreen: receptive vocabulary, expressive vocabulary, sentence repetition and listening comprehension. Renfrew Action Picture Test (RAPT)

Protocol version history

Version	Date	Reason for revision
1.2 [*latest*]		
1.1		
1.0 [*original*]		N/A

Contents

Tables

Figures

Please cross link tables, figures and appendices when mentioned throughout the text using the 'insert cross-reference' function. The captions have already been created as part of this template.

Study rationale and background

Early language practices are of particular interest given the importance of speech, language and communication (SLC) development in the early years and their links with later academic attainment (Goswami, 2003; Roulstone et al., 2011). High quality early childcare has been shown to have positive impacts on children's emerging literacy and on their school readiness (Sylva et al. 2004; Ota & Auston, 2013). However, it is argued that early years practitioners need additional training in children's diverse speech, language and communication needs (Beard, 2018) within a context where referrals to Speech and Language Therapists (SALT) are not always appropriate (Bonetti et al., 2020). This is particularly important in the light of:

1. widespread concern about weaker language skills in children in the early years during COVID-19 (Tracey et al., 2022);
2. the higher risk of preschool language difficulties in children from lower socio-economic groups (Law et al., 2017); and
3. inconsistent training in the EY workforce, compounded by Covid-19 with early years settings struggling with retention of staff, especially retaining (and recruiting) high-quality staff, which is particularly evident in private, voluntary or independent (PVI) settings (Bonetti, 2020; Bonetti et al., 2021; Ofsted, 2022).

Evaluation of interventions to improve children's SLC development are therefore timely, particularly those designed to embed change through increasing practitioner knowledge, skills and confidence and change practice responsively to individual children's needs. The Communication Friendly Settings (CFS) programme is designed to achieve this through improving daily and routine interactions between children and adults in order to lead to improved language outcomes for children.

CFS is an already established programme. Elklan Training Ltd. trained 1,416 EY practitioners through the DfE's Early Years Professional Development Programme (2022-2025) using an adaptation of the CFS programme. There was positive feedback from practitioners with 69% of the 344 practitioners who completed stage one of the programme, rating the progress of the children they supported 'better than' or 'much better than' expected following the training. A variation of the CFS programme has also previously been evaluated in a small-scale quasi-experimental study (Clegg et al, 2020).[1] After 6 months of implementation of the programme, children in the intervention groups made more progress on a standardised measure of language compared to a control group, although the findings were inconclusive due to the small sample size. This study also identified the importance of having a key practitioner embedded within the setting to provide on-site support and guidance to colleagues.[2] In order to fully understand any potential impact of the programme on children's language outcomes a more robust randomised control trial (RCT) with built in implementation process evaluation is needed.

The programme is being delivered as part of the Department for Education's Early Years Recovery Programme. Within this, the Stronger Practice Hubs and the Education Endowment Foundation are working together to fund Early Years settings' access to evidence-informed

[1] This version of the programme was called 'Talking Matters'.
[2] In the Clegg et al. (2020) evaluation these were termed Key Communication Practitioners (KCPs) as opposed to Lead Communication Practitioners (LCPs) who worked across settings. In this trial LCPs work within one setting like a KCP but with the higher level of training (level 4) previous provided to LCPs.

programmes. The overall aims of this funding are to support education recovery following the pandemic, and to develop our understanding of effective professional development in the early years. This is in the context of a current shortfall in opportunities for professional development within the Early Years workforce (DfE, 2022). The proposed efficacy trial will allow us to test the existing evidence of promise demonstrated by the programme by robustly measuring the impact of the programme on children's speech, language and communication. The embedded process evaluation will study the programme's impact on the knowledge, skills and confidence of the whole Early Years setting staff and its consequent influence on practice.

Intervention

CFS is a whole-setting programme that aims to promote the speech, language and communication skills of all children. It aims to do so through improving the quality and quantity of interactions between staff and children, so children are exposed to more vocabulary that is also appropriate to their developmental stage and next steps (i.e. children are provided with differentiated support).

There are two elements to the programme:

1. Speech and Language Support for 3-5 year olds (SLS 3-5s); and
2. Communication Friendly Settings status.

This is followed by the setting seeking to achieve Communication Friendly Setting-status (CFS-status).

For part one, Elklan provides online training (SLS 3-5s) and coaching to two staff (Lead Communication Practitioners or LCPs) from each setting (in cohorts of 10-16 staff across settings). The training consists of 10 e-learning modules, 10 interactive webinars and completion of 10 on-line learning logs, all supported by an Elklan tutor. Successfully completing SLS 3-5s and the learning logs eads to the LCP gaining a level 3 accreditation through an Ofqual approved and regulated national awarding organisation (OCN, London).

Alongside this training LCPs also receive training and support to share their learning and make and embed changes to the settings practice. This includes the LCPs delivering a lighter-touch course, Communication Counts (CCs). CC is delivered asynchronously by the LCPs, to all setting staff (not only Early Years practitioners).[3] After each session, all setting staff are expected to complete 1-2 'challenges' (7 per staff member in total) which demonstrates the use of strategies taught by the training. Completion is evidenced through submission of a short 'challenge questionnaire' via the online portal. LCPs provide mentoring to the whole staff team in their nursery in implementing and embedding practice change for the setting to gain CFS status. They also collate the evidence that individual staff members provide as part of their challenges into their learning log, in which LCPs also reflect on the impact of embedding these strategies on pupils and staff. As with the previous learning log, LCPs submit this learning log via the online portal and receive feedback from Elklan tutors. LCPs receive a level 4 qualification for cascading the course to colleagues and satisfactorily completing their learning

[3] This is a change from earlier variations of the programme.

logs through an Ofqual approved and regulated national awarding organisation (OCN, London).

Paired visits between LCPs from different nurseries at the end of the programme promote opportunities to share experiences, provide examples of best practice and lead to completion of a peer review audit to discuss whether the setting can gain Communication Friendly Status. After a successful external peer review and if the above steps have all been met (i.e. LCPs have successfully completed all level 3 learning logs and the level 4 learning log and 80% of available staff have individually completed the 7 challenge questionnaires the setting is awarded CFS-status. If concerns are expressed during the review, feedback is provided, and a further visit is scheduled to audit whether the setting can now achieve CFS-status[4]. CFS-status is valid for three years, after which time reaccreditation can be applied for. This involves a further peer-review visit to confirm if the setting continues to meet the requirements of CFS-status.

Further details of the programme, as designed to be implemented for this efficacy trial can be found in Table 1. Overall training will take place between October 2023 and March 2024 with CFS-status expected to be completed by April 2024 for Cohort 1 (C1), and on similar timelines in 2024/2025 for Cohort 2 (C2). Beyond that time, settings will be expected to continue to embed the programme in their practice.

Table 1: Aspect of TIDieR[5]

Aspect of TIDieR	Exemplification relating to the evaluation
Brief name	Communication Friendly Settings (CFS)
Why: Rationale, theory and/or goal of essential elements of the intervention	To improve Early Years Practitioner knowledge and confidence in supporting 3-5 year old children's communication and language skills through daily and routine interactions between children and adults and the provision of an appropriate environment at the whole setting level in order to accelerate children's oral language development, including that of children in areas of social deprivation and children with speech, language and communication needs.
Who: Recipients of the intervention	Early Years setting staff: ● 2 practitioners in each setting to train as Lead Communication Practitioners (LCPs) through successfully completing 2 courses:

[4] This second audit visit is usually conducted by the same peer reviewer. If not then it is completed by an Elklan tutor.

[5] http://www.bmj.com/content/348/bmj.g1687

	o Speech and Language Support for 3-5 year olds (SLS 3-5s)* (externally accredited at level 3) o Communication Friendly Settings (CFS) (externally accredited at level 4) ● LCPs to cascade training 'Communication Counts' (CC) to whole setting staff who then complete Challenges or questionnaires. ● LCPs support settings staff to make and embed changes to practice. ● LCPs visit each others' settings to undertake an audit and share good practice.
What: Physical or informational materials used in the intervention	**SLS 3-5s** On-line course content: 1. What is communication? 2. Communication friendly settings, adult-child interaction 3. Learning to listen, and supporting understanding through non-verbal communication and visual strategies 4. Promoting vocabulary development 5. Understanding spoken language and information carrying words 6. Blank Language Scheme 7. Developing expressive language 8. Developing play for language 9. Children with unclear speech and phonological awareness 10. Stammering and course reflection LCPs receive copies of Language Builders for 3-5s Level 3 e-learning logs **CC** Face-to-face delivery by LCPs to at least 80% of all setting staff (although e-learning sessions will be available if needed): 1. What is communication? 2. Creating a communication friendly setting and adult-child interaction 3. The Word Journey 4. The Language Journey 5. Working with families and linking it all together LCPs receive hard copies of training manuals (Early Language Builders), powerpoint presentations and handouts and access to the CFS tracker to enable EYPs to access CC questionnaires and a compiled report of feedback for each CC session Level 4 e-learning log

What: Procedures, activities and/or processes used in the intervention	**LCPs:** ● 10 x one-hour asynchronous e-learning sessions ● 10 x one- hour live virtual seminars (webinars) ● The completion of a portfolio of evidence of implementing and evaluating the strategies learnt (10 Level 3 e-learning logs), which is marked by Elklan tutors. ● 5.5 hours of additional support from their Elklan Tutor through live webinars (some of which are extensions to the SLS 3-5s webinars and some of which are stand-alone webinars) to prepare for cascading Communication Counts and sharing CFS experiences with colleagues. **Whole setting staff:** ● 5 x one-hour face-to-face Communication Counts training sessions ● Completion of challenge questionnaires (7 in total) via online CFS tracker by 80% of setting staff **CFS-Status:** ● LCPs and whole setting staff complete activities detailed above ● Completion of a Level 4 e-learning log by LCPs which evaluates the impact of the whole setting working to create a more Communication Friendly Setting. ● Completion of a CFS audit checklist at the end of the programme in preparation for the paired visit. ● Paired visits between LCPs from different settings at the end of the programme to share experiences, provide examples of best practices and lead to completion of a peer review audit to discuss whether the setting can gain Communication Friendly Status.
Who: Intervention providers/implementers	Elklan tutors, LCPs
How: Mode of delivery	**LCPs**: E-learning modules, webinars (including interactive teaching methods, practical activities, and videos and group discussions), learning logs and hard copies of training manuals. **Whole-setting staff:** Communication Counts delivered by LCPs face-to-face to at least 80% of whole setting staff, challenge questionnaires completed on-line with compiled feedback report for each CC session accessed by LCP

Where: Location of the intervention	On-line and within settings with additional peer audit visits to gain CFS-status.
When and how much: Duration and dosage of the intervention	Training (4 months) + time for completion of learning logs and gaining CFS-status (additional 2-3 months) (All times stated below are for Cohort 1 and 2 respectively (i.e., C1/C2)). **LCPs:** ● 10 x one-hour asynchronous e-learning sessions (October 2023/2024-January 2024/2025) ● 10 x one-hour live virtual seminars (webinars) (October 2023/2024-January 2024/2025) ● 5.5 hours of additional support from their Elklan Tutor via live webinars to cascade Communication Counts (October 2023/2024-January 2024/2025) In addition, LCPs are expected to take one to two hours per week planning and implementing strategies with the children and one hour to write up the learning log tasks (10LLs). Learning Log completion deadline March 2024/2025. **Whole-setting staff:** ● 5 x 1 hour face-to-face Communication Counts training sessions (October 2023/2024-February 2024/2025) In addition, setting staff are expected to complete challenges questionnaires relating to each session (October 2023/2024-February 2024/2025) (7 challenges in total across the 5 CC sessions). Challenge completion deadline March 2024/2025. **CFS status:** ● LCP submits completed level 4 e-learning log evaluating the impact of CC and mentoring their team to achieve CFS ● Completion of checklist at end of programme (March 2024/2025) ● Peer CFS-audit visits at end of programme (March 2024/2025) All activities to be completed by April 2024/2025.
Tailoring: Adaptation of the intervention	None
How well (planned): Strategies to maximise effective implementation	On-line support from Elklan tutor throughout the duration of the programme. Deadlines for, and monitoring of, completion of programme elements (e-learning modules, learning logs, CFS audits).

	Webinars held at times convenient to EY practitioners with a contribution to backfill (to cover approximately 50% of the costs for staff time taken for training and completion of course requirements) LCPs submit learning logs online for marking by Elklan tutors via the online portal. LCPs have an opportunity to update their submissions based on tutor feedback. LCPs provided with resources to share the Communication Counts sessions with any new staff and/or use the sessions for 'top-up' training at any time and e-learning CC training is also available, if needed (e.g., if 80% of setting staff do not attend CC cascaded training delivered by the LCP). External accreditation (Level 3, SLS 3-5s; Level 4, for LCPs who cascade Communication Counts within their setting) through an Ofqual approved national awarding organisation (OCN, London).

* A 0-3 year old version is also available. This trial, however, focuses on the 3-5 year old version of the programme.

The theory of change underpinning the programme can be found in Figure 1. It is premised on research indicating that quality adult-child interaction accelerates children's speech, language and communication (Fey, 1986). Other theoretical underpinnings to the logic model include:

- New knowledge is necessary to change behaviour (Bloom, 1956);
- Implementing and reflecting on changes in practice/strategies increases the likelihood of embedding them into practice (Kolb, 1984);
- Whole setting staff CPD increases the likelihood of changed practice (Salas et al., 2008);
- Provision of a communication-friendly environment promotes children's communication development (Dockrell et al., 2012)[6];
- Appropriate use of modelling increases sentence length and complexity (Yoder, 2011);
- Reducing numbers of questions and giving appropriate time for responses, providing a breadth of vocabulary at an appropriate level for the child and narrating children's activity accelerates children's development of speech, language and communication (EEF, 2022; Hay et al, 2010; Beck, McKeown & Kucan, 2013; Joffe, Rixon & Hulme, 2019);
- Differentiating support for children's language so it is tailored to each child's needs increases its effectiveness (Vygotsky, 1978);
- Accelerated development of speech, language and communication improves academic attainment (DfE, 2019); and
- Accelerated development of speech, language and communication improves life chances (Conti-Ramsden et al., 2018).

Whilst the theory of change posits that the programme will also improve school readiness, this is interpreted in the context of improved speech, language and communication providing children with the necessary levels of understanding and expression to be able to access

[6] Dockrell et al. (2012) identified three aspects of a communication friendly environment: 1) the Language Learning Environment (the physical environment and learning context); 2) Language Learning Opportunities (the structured opportunities to support children's language development); and 3) Language Learning Interactions (the ways in which adults in the setting talk with children) (p.5)

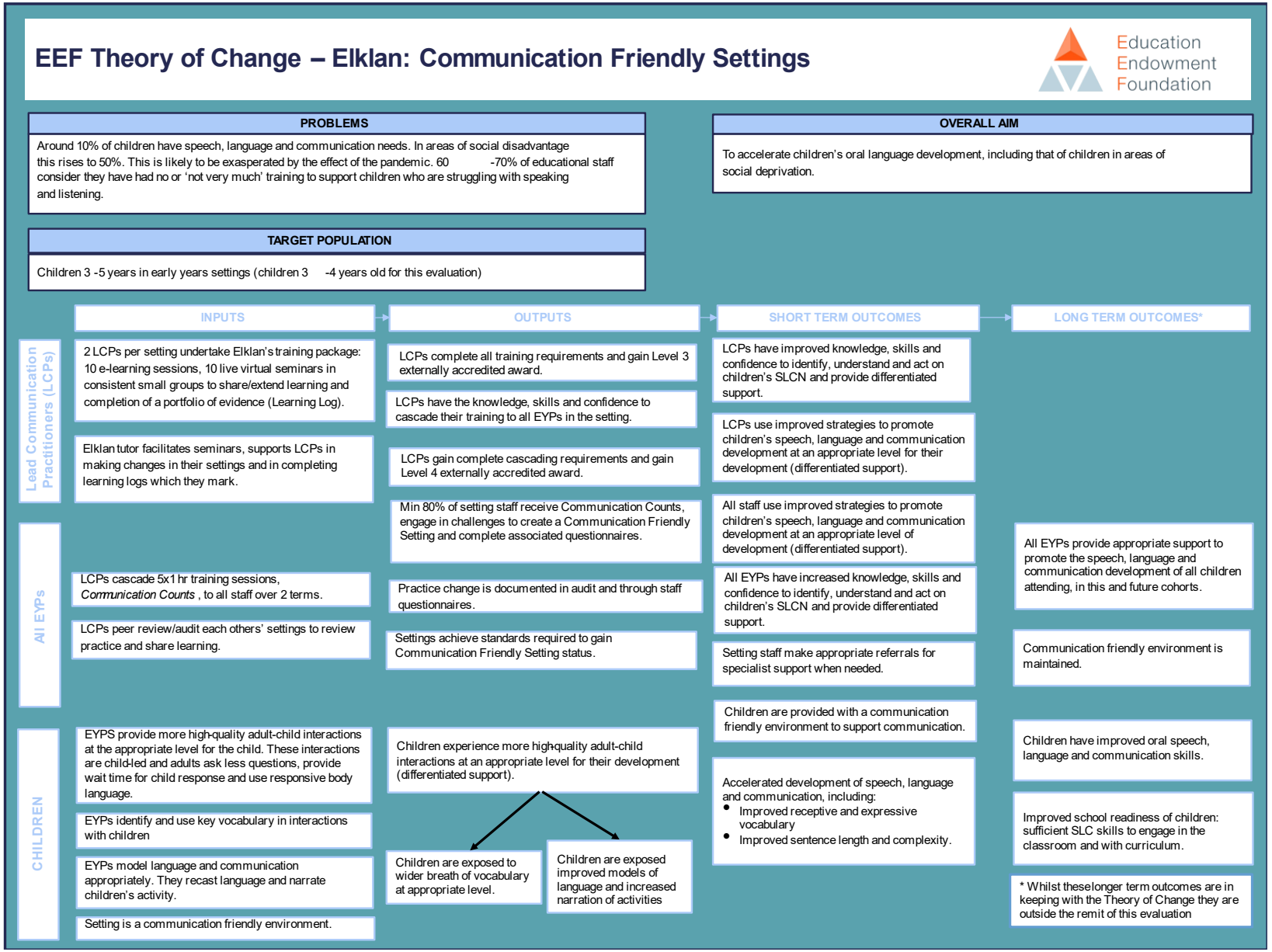
learning (Beard, 2018). Consequently, this longer-term outcome is outside of the remit of this evaluation. For further details of the underpinning causal mechanisms see the Appendix.

The delivery model means that LCPs receive training and cascade elements of the training to other staff in their setting at the same time over the course of one academic year. Consequently, learning and cascading of training are integrated. Elklan's rationale for this is as follows:

- LCPs reinforce their new knowledge by cascading course content to the other setting staff.
- All setting staff undertake a collaborative journey implementing the programme along with the LCP, resulting in increased ownership of programme delivery.
- Simultaneous delivery mitigates against staff attrition, caused by staff turnover or LCP failure to re-engage in the following academic year.
- Simultaneous delivery enables the evaluation to take place over one academic year minimising pupil attrition which is likely to take place with this age group if post-testing takes place in a different academic year.

(EEF, 2022)

Figure 1: Logic model



Impact evaluation design

Research questions

The central aim of the trial is to evaluate the impact of the CFS (Early Years) programme on the language skills of children aged 3-4 years of age.

The primary research question is:

1. How effective is the Communication Friendly Settings (CFS) programme at improving the language skills (as measured by the LanguageScreen Assessment) of children aged 3-4 years in early years settings compared with usual practice?

The secondary research questions are:

2. How effective is the CFS programme at improving the receptive vocabulary of children aged 3-4 years in early years settings (as measured by the LanguageScreen Assessment) compared with usual practice?
3. How effective is the CFS programme at improving the expressive vocabulary of children aged 3-4 years in early years settings (as measured by the LanguageScreen Assessment and the Renfrew Action Picture Test) compared with usual practice?
4. How effective is the CFS programme at improving the sentence repetition skills[7] of children aged 3-4 years in early years settings (as measured by the LanguageScreen Assessment) compared with usual practice?
5. How effective is the CFS programme at improving the listening comprehension skills of children aged 3-4 years in early years settings (as measured by the LanguageScreen Assessment) compared with usual practice?

The final research questions explore the impact of CFS programme on subgroups of 3-4 year olds within Early Years settings:

6. How effective is the CFS programme at improving the language skills of children eligible for the Early Years Pupil Premium (EYPP) compared with usual practice?
7. How effective is the CFS programme at improving the language skills of children with lower baseline attainment compared with usual practice?
8. How effective is the CFS programme at improving the language skills of children with lower attendance levels compared with usual practice?
9. How effective is the CFS programme at improving the language skills of children for whom English is an Additional Language compared with usual practice?

Design

This evaluation is a two-armed cluster randomised efficacy trial with allocation at the setting level to evaluate the CFS programme against usual care. As this evaluation forms part of the DfE's Early Years Recovery Programme it will be a waitlist design. Given the current demand for the programme this is also deemed appropriate. However, due to lower than anticipated recruitment, the decision was made to undertake a split cohort design – whereby the trial is split over two years. Within the first Cohort (Cohort 1: C1), at least 50% of the settings will be recruited and randomised into the trial. Recruitment for Cohort 2 (C2) will then be undertaken

[7] 'Sentence repetition' is a subtest of the LanguageScreen. An improvement in sentence repetition skills reflects improved sentence length and sentence complexity.

(excluding those on the waitlist in C1, who will receive the intervention alongside those in the intervention in C2) to reach the target sample size. The primary outcome will be the overall assessment of language skills as measured by the Oxford LanguageScreen (https://oxedandassessment.com/language_screen). The four subtests of the LaguageScreen (receptive vocabulary, expressive vocabulary, sentence repetition and listening comprehension) will form the secondary outcome measures to assess if some aspects of language are impacted on differentially as a result of the programme. Alongside this we will administer the Renfrew Action Picture Test (RAPT) which measures children's expressive language. Whilst this means we will have two measures of expressive language in the secondary outcomes, the RAPT is felt to provide a more in-depth measure of expressive language than LanguageScreen. The expressive language subtest will be administered as part of the overall assessment of language skills as measured by the Language Screen and as such should be seen as a supplement to the RAPT (given that it will be routinely collected anyway).

Table 2: Trial design

Trial design, including number of arms		Two-arm, cluster, randomised
Unit of randomisation		Setting
Stratification variables (if applicable)		Type of setting: two level (School-based (SBS); Private, Voluntary or Independent (PVI)) Completion of baseline measures at randomisation: two level (Yes; No)
Primary outcome	**Variable**	Language skills
	Measure (instrument, scale, source)	Oxford LanguageScreen, rawscore (number of correct answers 0 - 77), https://oxedandassessment.com/language_screen
Secondary outcome(s)	**Variable(s)**	Receptive vocabulary (LanguageScreen) Expressive vocabulary (LanguageScreen) Sentence repetition (LanguageScreen) Listening Comprehension (LanguageScreen) Expressive Language (Renfrew Action Picture Test)
	Measure(s) (instrument, scale, source)	LanguageScreen subtest: Receptive vocabulary, rawscore (number of correct answers 0 - 24), https://oxedandassessment.com/language_screen

		LanguageScreen subtest: Expressive vocabulary, raw score (number of correct answers 0 - 16), https://oxedandassessment.com/language_screen LanguageScreen subtest: Sentence repetition, raw score (number of correct answers 0 - 23), https://oxedandassessment.com/language_screen LanguageScreen subtest: Listening Comprehension, raw score (number of correct answers 0 - 14), https://oxedandassessment.com/language_screen Renfrew Action Picture Test, 0-77, Routledge
Baseline for primary outcome	**Variable**	Language skills
	Measure (instrument, scale, source)	Oxford LanguageScreen, raw score (number of correct answers 0 - 77), https://oxedandassessment.com/language_screen
Baseline for secondary outcome	**Variable**	Receptive vocabulary (LanguageScreen) Expressive vocabulary (LanguageScreen) Sentence repetition (LanguageScreen) Listening Comprehension (LanguageScreen) Expressive Language (Renfrew Action Picture Test)
	Measure (instrument, scale, source)	LanguageScreen subtest: Receptive vocabulary, raw score (number of correct answers 0 - 24), https://oxedandassessment.com/language_screen LanguageScreen subtest: Expressive vocabulary, raw score (number of correct answers 0 - 16), https://oxedandassessment.com/language_screen LanguageScreen subtest: Sentence repetition, raw score (number of correct answers 0 - 23), https://oxedandassessment.com/language_screen LanguageScreen subtest: Listening Comprehension, raw score (number of correct answers 0 - 14), https://oxedandassessment.com/language_screen Renfrew Action Picture Test, 0-77, Routledge

Participant selection

Recruitment will be conducted by the Delivery Team (DT) supported by the Stronger Practice Hubs (SPH), EEF and the Evaluation Team. Recruitment for Cohort 1 will be in the following Local Authority areas:

- East Midlands (East Midlands EY SPH): Leicester; Leicestershire; North Northamptonshire; Rutland; West Northamptonshire, Lincolnshire.
- North-East (Northern Lights and Great North EY SPH): Middlesbrough, South Tyneside, Northumberland, Newcastle upon Tyne, Stockton-on-Tees, Gateshead, County Durham, Hartlepool, Darlington, Redcar and Cleveland, North Tyneside, Sunderland.
- North West (Bright Futures EY SPH): Stockport, Bolton, Oldham, Manchester, Wigan, Trafford, Salford, Rochdale, Bury, Tameside.
- Yorkshire and the Humber (St Edmund's EY SPH): Wakefield, Kirklees, Calderdale, Bradford, Leeds, Sheffield, Rotherham, Barnsley.

Recruitment for Cohort 2 will be supported by the East Midlands EY SPH, Great North EY SPH and South West EY SPH. (Local Authority areas for recruitment of second cohort will be finalised in October 2023).

Alongside dissemination about the study (via SPH events and the EEF website) recruitment will take place on-line. Settings can express interest in participating in the study via the Elklan Training Ltd website. This site also contains links to the Setting Information Sheet, Memorandum of Understanding (MOU), Data Sharing Agreement (DSA) and the associated privacy notices.

Recruitment will be of private, voluntary and independent (PVI) and school-based settings (SBS) with a focus on those in areas of disadvantage. It is anticipated that there will be an over-recruitment of SBS given expected higher rates of attrition of, and within, PVI settings. Although it is acknowledged that there are likely to be inherent differences between the types of settings (Bonetti et al., 2021; EEF, 2019), given that this is an efficacy trial this is felt to be justifiable. To counter this, it is anticipated that further exploratory analysis will be conducted based on the type of setting (see below) to inform any future effectiveness trial.

Settings will be regarded as recruited providing they sign the Memorandum of Understanding (MOU) and the Data Sharing Agreement and they meet the following eligibility criteria for Cohort 1:

- Settings obtain parent consent for at least 12 children aged 3-4 (in Foundation 1) enrolled to attend for at least 15 hours a week in the academic year 2023/2024 to participate in the study.
- Settings complete the pre-evaluation staff survey before randomisation (October 2nd 2023) and agree to facilitate child assessments by October 20th 2023.
- Settings agree to participate fully in the evaluation, including completing the programme (as outlined above) if selected to be in the intervention group.

Settings may only receive one programme funded as part of the Department for Education's Early Years Recovery Programme between 2022 – 2025.

Settings will not be eligible for Cohort 1 if any of the following apply:

- Setting participated in EYPDP1 (the Early Years Professional Development Programme)
- Setting is participating in EYPDP3 in the 2023/24 academic year
- Setting has previously gained Communication Friendly status (Early Years) through Elklan
- Setting is taking part on another SPH funded programme.

Following from this, the above criteria will also apply to recruitment for Cohort 2 (with respective dates in 2024/2025) – with the additional criteria that they were not on the waitlist for Cohort 1.

Settings that have previously participated in EYPDP2 ('Building on Success') or EYPDP3 are eligible for the programme although they will be placed on a waiting list and randomly allocated to intervention or control conditions within the trial if recruitment is below expected levels. The Early Years Practitioners (EYPs) who completed the training should not be put forward as LCPs.

Setting staff are eligible to be nominated and trained as a LCP if they meet the following criteria:[8]

- A minimum of 2 years' experience working with 3-5s;
- 'A' levels or NVQ level 3 or 4 in child development, education or other relevant area;
- GCSE Maths and English at grade A-C/grade 4;
- A high level of interest in promoting the communication skills of 3-5s, and particularly those with, or at risk of, speech, language and communication needs;
- A high level of interest in sharing knowledge and skills with others and the confidence to deliver to and mentor a whole staff team;
- A desire for Continuing Professional Development (CPD) within the field of speech, language and communication.

Setting staff will not be eligible to be nominated and trained as a LCP if the practitioner completed EYPDP2 (Building on Success) and should not be put forward as a LCP.

Settings will be requested to recruit parents to the study via parental consent in September 2023/2024 (for C1 and C2, respectively). They will be provided with an initial payment to contribute towards them doing so (see incentives section below). We will work with settings to assess whether they would prefer to recruit parents via paper copies of parental information and consent forms or e-consent. Children will be eligible to be recruited for the impact study (i.e. to have their data collected for the evaluation) if:

- They are aged 3-4 (i.e. in Foundation 1 and due to start Reception classes in the academic year 2024/2025 for C1, or 2025/2026 in C2)
- They are registered to attend the setting for a minimum of 15 hours per week
- They have signed parental consent.

Children will not be eligible for recruitment if they have a severe auditory or visual impairment, or severe social communication / autism-related needs. This is because these needs would prevent them from accessing the assessments.

[8] These are the entry-level criteria for the CFS programme.

Where there are more than 12 eligible children within a setting with parental agreement to participate in the assessments, children will be randomised to be included within the evaluation by a statistician independent of the assessments.

Prior to the efficacy trial there will be a pre-delivery phase of the CFS programme taking place. This will provide some subsidised CFS training places to some local authorities in the North West (via the Bright Futures North West Early Years SPH), the East Midlands (via Pen Green SPH) and the North East (via Northern Lights Early Years SPH). These settings will undertake the CFS training between July 2023-February 2024 for C1, and July 2024-February 2025 for C2. As detailed in the IPE (see below), a small number of these settings (5-10 settings, to include both PVIs and SBS) will be asked to take part in some pre-evaluation activities to assist the evaluation team in preparation for the main trial in July 2023. These activities are:

1) completion by setting staff of the proposed knowledge, skills and confidence questionnaire (see below) to enable the evaluation team to assess its usability and to make any required changes prior to the main trial; and
2) facilitate a setting visit by 1-2 researchers in order to practice using the assessments with children aged 3-4 (i.e., in Foundation 1 and due to start Reception classes in the academic year 2023/2024). Prior to the visit settings with obtain signed parental consent for the assessments to take place. This activity is designed to assist the researchers in planning data collector training. Only 1-2 settings will be asked to take part in this activity and between 5-10 children will be assessed. Children will not be eligible to take part if they have a severe auditory or visual impairment, or severe social communication / autism-related needs (as above).

Settings will be recruited to the pre-evaluation phase after they have been recruited to receive the subsidised places via the Elklan website. There will be no recruitment criteria for these settings except that they agree to take part in the pre-evaluation activities. They will not participate in the main trial. .

Incentives

Training and support will be fully funded (usual cost £1,559 plus VAT per setting) for the Early Years Practitioners acting as LCPs as part of the intervention group in the academic year 2023/2024 or 2024/2025 for C1 and C2, respectively. Control settings will receive the same fully funded training and support in the academic year 2024/2025, or 2025/2026 for C1 and C2, respectively. In recognition that there are costs associated with undertaking and implementing professional development, settings will also receive a contribution of £468.80 per LCP to cover for staff time for all EYPs who complete the programme.[9] In addition, settings will receive £400 in the evaluation year (2023/2024 or 2024/2025) to assist in parental recruitment and completion of evaluation measures (surveys, setting visits, child language assessments). This will be divided into £150 for baseline (i.e. Sept/October 2023 or Sept/October 2024) and £250 on completion of endline (June/July 2024 or June/July 2025).

Settings taking part in the pre–delivery activities will receive £150 paid via Elklan Training Ltd on completion of these activities as a thank you for their participation.

Outcome measures

[9] It is estimated that each LCP will undertake approximately 62.5 hours to complete the programme requirements.

The baseline and outcome measures are designed to assess children's language development as encapsulated in the programme Theory of Change (see Figure 1).

Baseline measures

The baseline measures will be the LanguageScreen Assessment (https://oxedandassessment.com/language_screen), including its subscales, and the Renfrew Action Picture Test (RAPT) (Renfrew, 2010). These will be administered consecutively (LanguageScreen followed by RAPT) one-to-one with children by assessment administrators trained and employed by the University of York. These measures will also form the outcome measures (for further details see below) in order to ensure high levels of correlation at baseline and endline. The aim is to have all baseline assessments completed by October 2023 to enable training to start prior to the half term break. Some settings may have to be randomised prior to assessment and we have taken steps to minimise the impact of this on attrition (see randomisation section below).

Primary outcome

The primary outcome measure will be the LanguageScreen Assessment (https://oxedandassessment.com/language_screen). The LanguageScreen is a standardised app-based assessment. It is composed of four subtests measuring receptive vocabulary, expressive vocabulary, sentence repetition (language processing skills; Klem et. al., 2014) and listening comprehension. Overall, they assess children's language skills. The LanguageScreen is administered one-to-one per child and is conducted on a handheld tablet. It takes approximately 20 minutes to administer. Children will be assessed by an independent assessor, blind to condition, trained and overseen by the University of York. Full instructions are included on the app and verbal instructions for the child are built in. Results (standardised and raw scores) are generated automatically. This means that variability across administrators should be minimised. Whilst not on the current EEF Early Years measures database LanguageScreen has been used (successfully) in other EEF studies (PACT, NELI) and the developers of the test report high reliability of r=.87 (West, et al, 2021). The outcome assessments will take place in June/July 2024, or June/July 2025 for C1 and C2, respectively.

Secondary outcomes

The secondary outcome measures will be each of the individual subtests of the LanguageScreen: receptive vocabulary, expressive vocabulary, sentence repetition and listening comprehension. This will enable the evaluation to assess whether the programme impacts on any particular aspect of language development more (or less) than others. The sub-tests are as follows:

- Receptive Vocabulary (23 items): the child chooses which of 4 pictures matches a spoken word (raw score range 0-23);
- Expressive Vocabulary (24 items): the child names pictures shown (raw score range 0-24);
- Listening Comprehension (16 items): the child listens to 3 stories each followed by a series of questions about the story to assess understanding (raw score range 0-16); and
- Sentence Repetition (14 items): the child is asked to repeat verbatim a series of spoken sentences (raw score range 0-14).

(Menzies et al., 2022)

In addition, the Renfrew Action Picture Test (RAPT) (Renfrew, 2010) will also be administered to assess children's expressive language.[10] This is in addition to the expressive vocabulary subtest of the LanguageScreen as it is felt it will provide a more thorough assessment of one of the key predicted outcomes of the CFS programme as evidenced in the Theory of Change. The RAPT also takes approximately ten minutes to administer and involves asking children to respond to questions relating to ten picture cards they are shown consecutively. Two scores are recorded, one for the level of information they provide (for example nouns and verbs) and one for the grammar they use (such as use of tenses). The RAPT will be administered immediately after the LanguageScreen by a University of York-trained assessment administrator. To aid scoring, and ensure consistency in administration, children's responses will be audio recorded. These audio recordings will then be used by the evaluation team to ensure consistency of scoring and quality control.

Children's eligibility for EYPP will be collected directly from settings after the appropriate data sharing agreements have been put in place. Attendance data will be collected directly from settings. Children's English as an Additional Language (EAL) status will be obtained directly from parents alongside their consent for their child to participate in evaluation activities (i.e. to complete the child outcome measures at baseline and endline). Personal data about participating children (i.e. full name, date of birth, gender and postcode) will also be collected by the evaluation team (from settings, with parental consent) to allow for future data linkage to the National Pupil Database (NPD).

Sample size

All sample size calculations were undertaken using PowerUp (causalevaluation.org/power-analysis.html). Randomisation will be undertaken at a setting level, but the analysis will be undertaken at child-level.

In previous early year trials, the setting-level intra-cluster correlation coefficient (ICC) ranged between 0.19 and 0.11 (Every Child Counts, Torgerson et al, 2022; Maths Champions, Robinson-Smith et al., 2018), so to be conservative an ICC of 0.17 will be used. As there is a lack of evidence to inform a pre-post correlation, the MDES was calculated using a range of values (between 0.5 and 0.7); and similarly, as there can be high levels of pupil attrition in EY trials, a variety of these were explored (10% to 20%), to find the most suitable sample size.

Minimal difference was seen in the MDES when the level of values of pre-post correlation and child attrition were varied, so conservative estimates of a pre-post correlation of 0.6 and 15% attrition were used. To account for any post-randomisation withdrawals, we will anticipate a reduction in the number of settings by 15% at analysis.

High levels of attrition are often seen in EY trials (11% Maths Champions to 36% Success for All; Robinson-Smith et al., 2018 and Miller et al., 2017, respectively). Both Maths Champions and EasyPeasy (Robinson-Smith et al., 2018 and Robinson-Smith et al., 2019, respectively) had high levels of pre-randomisation drop out from settings. Following the EEF guidance, we suggest over-recruiting settings by 10% (n=166), to allow for 150 settings to be included in the baseline data collection.

Given the nature of EY trials, we have stated that a setting must have 12 consenting children to be included in the evaluation but anticipate that not all those children will have baseline

[10] This norm-referenced assessment is highly correlated with the Carrow Elicited Language Inventory for children aged 5 and 6 with moderate learning disabilities. See EEF Early Years measures database.

assessments (due to illness and varying days at the setting), so conservatively assume we will have 10 children per setting at baseline. Thus, this leads to a conservative estimate of a possible MDES of 0.24 (at analysis: 128 settings, 8.5 children per setting, ICC 0.17, and pre-post correlation of 0.6).

It is anticipated that 10% of the children within early years settings are eligible for EYPP, which is the early years equivalent to FSM.[11] This would only equate to around 200 children in our evaluation. As such, to boost power for a subgroup of EYPP children, in any setting where there are more than 12 consented children, we will randomly select a maximum of three EYPP eligible children to be included, and randomly select from the remaining children to reach 12. If there are three or less EYPP eligible children, they will all be included. If we then assume an average of 2 included children per setting (as some may have no eligible children), we would anticipate a MDES of 0.35, using the same assumptions as above This trial is not powered to detect an effect on the FSM-subgroup.

As the trial has moved to a split cohort design, the first year will recruit at least 50% of the required settings (to demonstrate feasibility), and the remainder will be recruited into Cohort 2 – no adjustments to the sample size calculations are required for this, as the assumptions above still hold.

Table 3: Sample size calculations

		Overall (pre-attrition)	**Overall (anticipated attrition)**	**EYPP (after anticipated attrition)**
Minimum Detectable Effect Size (MDES)		**0.20**	0.24	0.35
Pre-test/ post-test correlations	level 1 (pupil)	**0.6**	0.6	0.6
	level 2 (class)	-	-	-
	level 3 (setting)	-	-	-
	level 2 (class)	-	-	-

[11] In 2022, of the 3 and 4-year-olds registered for the 15-hour entitlement, 116,500 (10%) were also in receipt of the early years pupil premium (EYPP): https://explore-education-statistics.service.gov.uk/find-statistics/education-provision-children-under-5

Intracluster correlations (ICCs)	level 3 (setting)	0.17	0.17	0.17
Alpha		0.05	0.05t	0.05
Power		0.8	0.8	0.8
One-sided or two-sided?		two	two	two
Average cluster size		12	8.5	1.7
Number of schools	Intervention	83	64	64
	Control	83	64	64
	Total	166	128	128
Number of pupils	Intervention	996	544	109
	Control	996	544	109
	Total	1992	1088	218

Randomisation

As this is a whole-setting intervention, settings will be randomly allocated 1:1 to receive either the intervention or business as usual. Minimisation (via MinimPy) will be used with the type of setting (SBS or PVI), and whether all baseline assessments have been completed (yes or no) as factors. Due to timeline constraints, it may not be possible to have completed all baseline assessments by the proposed randomisation date (2nd October 2023 for C1), so this variable will be included in the randomisation. All remaining settings will have to have their baseline assessments scheduled to be eligible for randomisation. An independent trial statistician at the York Trials Unit will be responsible for randomisation, with another statistician second checking. If appropriate, the same minimisation scheme will be used to randomise Cohort 2 – otherwise, another minimisation scheme will be used for the second Cohort, using the same variables (type of setting and whether or not all baseline assessments have been done). Randomisation for Cohort 2 is anticipated to be undertaken in October 2024.

Statistical analysis

The statistical analysis will follow the most recent EEF guidance and be described in detail in a statistical analysis plan which will be prepared within three months of randomisation. The proposed analysis is provided in brief below. All analysis will be conducted using an intention

to treat basis, where pupils are analysed as randomised. The analysing statistician will not be blinded to group allocation.

Primary analysis

The primary analysis will compare the results of the primary outcome (LanguageScreen) between the two arms. The raw scores will be obtained for the outcome measure. A mixed-effects linear regression model will be used to compare the results, with the analysis undertaken at the pupil-level. Setting will be included as a random effect to account for clustering, and randomisation variables (type of setting and completion of baseline assessments prior to randomisation), group and baseline score included as fixed effects. Additionally, cohort (1 or 2) will be included within the model to allow for any differences in the outcome between the two cohorts to be accounted for. The predicted adjusted mean difference in scores will be presented with an associated 95% confidence interval and p-value.

If possible, the primary analysis will be re-run separately for each type of setting, as an exploratory analysis only.

Secondary analysis

The secondary outcomes, subscales of the primary outcome and the RAPT will be analysed using mixed-effects linear models and adjusted in a similar way to the primary analysis.

Estimation of effect sizes

The effect size, Hedges' g, will be calculated for the primary and secondary analyses, by dividing the adjusted difference in mean from the model, by the pooled unconditional variance of the two groups. Confidence intervals will be calculated for the coefficients using the Normal approximation.

Subgroup analyses

There are four subgroup analyses planned to explore the impact of CFS for:

- whether the child is eligible for EYPP (collected from settings)
- whether the child has English as an additional language (collected from settings)
- baseline attainment (those with a 'red' or 'amber' LanguageScreen at baseline will be classed as lower attainers)
- child's attendance (collected from settings)

In each case the primary analysis will be repeated on the prespecified subgroup, and by including the relevant variable with an interaction term with allocation within the model. As these analyses are not powered, they will be considered exploratory only.

Analysis in the presence of non-compliance

Compliance will be defined at the setting level, as whether Communication Friendly Setting status was achieved. To achieve this the following needs to have occurred:

- LCPs completed all e-learning and webinar sessions;
- LCPs successfully completed all 10 Level 3 learning logs, and their Level 4 learning log; LCPs cascaded Communication Counts to 80% of setting staff;
- 80% of setting staff completed each Challenge questionnaire;
- LCPs achieved Level 3 and Level 4 externally accredited awards;

- Setting successfully completed peer CFS-audit visit.

Within the timelines of the evaluation, we would assess this in April 2024 and collect this from the developer. The impact of compliance will be assessed using a compiler average causal effect analysis. A two stage least square instrumental variable approach will be used with group allocation as the instrumental variable.

In the event of compliance being low, a second measure of compliance will be used which regards as compliance as being achieved providing the LCP has successfully completed all e-learning and webinar sessions, successfully completed their Level 3 learning log and has cascaded all five Communication Counts sessions within their setting (as evidenced by completion of at least one of each of the seven challenge questionnaires by a member of staff within their setting).

Missing data analysis

If there are large amounts of missing data for the primary outcome, multiple imputation will be used to generate a complete dataset, and the primary analysis will be rerun to assess the impact. Missing data will be explored using a mixed-effects logistic regression model, including all baseline variables to explore the potential predictors of missingness.

Implementation and process evaluation (IPE) design

Research questions

The research questions for the IPE have been designed to understand how implementation of the programme occurs throughout the trial and how this may influence impact, as addressed in the IE. The research questions are:

IPERQ1 How far does the CFS-training improve the knowledge, skills and confidence of LCPs with regard to children's speech, language and communication needs?

IPERQ2 To what extent is the CPD cascaded within settings?

IPERQ3 To what extent does the CFS programme result in a whole setting approach to the speech, language and communication needs of children in terms of the Language Learning Environment, providing Language Learning Opportunities, and providing Language Learning Interactions[12]?

IPERQ4 What are the key observable features of a CFS setting (in terms of layout, interactions with children, programme strategies adopted by EYPs (and other staff) etc.)? How does this differ from usual practice?

IPERQ5 What are the barriers and facilitators for settings in undertaking and implementing the CFS programme (including training, cascading, whole setting change and achieving CFS-status)? Are there any particular factors affecting implementation with children, including particular characteristics of subgroups of children?

IPERQ6 What are the perceived outcomes of the CFS training and CFS-status for early years settings, practitioners and children including impact on referral rates for

[12] These are the components of a communication friendly identified by Dockrell et al. (2012).

specialist support? To what extent do child-level outcomes differ by socio-economic status? Are there any unintended consequences of the programme, at the setting, practitioner and child-level?

Research methods

Pre-delivery phase

Prior to the main trial there is anticipated to be a pre-delivery phase (July 2023-February 2024) where the CFS programme will be delivered to a small number of settings. For the pre-delivery phase we will recruit around 5-10 of these settings to take part in the pre-delivery evaluation activities. The pre-delivery evaluation activities will be:

- **Outcomes measures** will be trialled through administration in settings (*n*=1-2 settings). A total of 5-10 children will be anonymously tested (with parental consent) to check how long delivery of the measures takes. The data from the anonymised tests will be entered into a spreadsheet to check for any floor or ceiling effects. Outcome measures will be trialled during July 2023.

- **Trialling of the practitioner knowledge, skills and confidence questionnaire** (baseline) will take place during the pre-delivery phase in order for the evaluation team to gain feedback from practitioners. We aim to recruit two practitioners per setting (*n*=12 approx). The feedback will help to ensure that the questionnaires are written in a suitable and understandable manner for the target audience. The evaluation team will also use the data collected to ensure the measure is suitable for analysis. Baseline surveys will be trialled during July 2023.

- **Pre-audit checklists** will be trialled during the pre-delivery phase to ensure they are capturing the data needed to answer the relevant research questions and can be coded for appropriate analysis. The checklist will be trialled in all settings (*n*=10 max). Feedback will also be gained from the Elklan tutors on the usability of the measure to see if any changes need to be made prior to the efficacy trial. Trialling of pre-audit checklists will be done during July 2023.

Following pre-delivery the ET will give feedback to the EEF and Elklan Training Ltd relating to any changes that need to be made to the data collection tools during August 2023.

Efficacy Trial

During the main trial the following activities will be included within the implementation and process evaluation:

- **Attendance at training and interviews with Elklan tutors.** To understand the programme more fully (in terms of how the training should impact on practitioner knowledge, skills and confidence and also understand how the cascade training model should work) researchers will attend three sessions over the training period from October 2023 to January 2024 during the C1 trial phase. At least one session will be attended by two researchers to ensure inter-observer reliability and tutors will be reassured that their responses will remain anonymous. Researchers will also conduct interviews with Elklan tutors (*n*=2), sampled based on availability in order to assess how the delivery occurred, any changes in delivery, barriers and facilitators (post-delivery) and also monitor practitioner engagement. Interviews with tutors will take place during C1 between February 2024 to March 2024.

- **Routinely collected programme data.** The CFS programme already collects a substantial amount of routinely collected data. We will work with the developers, during the pre-delivery phase, to ensure that routinely collected data is suitable for the evaluation. We will use the following routinely collected programme data:

    - completion of training sessions - attendance at asynchronous e-learning sessions, live virtual seminars and virtual seminars (for cascading) to assess compliance, facilitators/challenges to training including the speed at which training is undertaken.
    - learning logs - to measure changes in knowledge and in practice;
    - challenge questionnaires - to assess the extent and nature of wider cascading within the setting;
    - CFS audit visit checklists (baseline and endline) - to assess the changes in settings and the key features of a Communication Friendly Setting;
    - completion of externally accredited awards (LCPs receiving level 3 and level 4 qualifications) - to assess LCP development.

Routinely collected programme data will be collected by Elklan during the programme delivery period (C1, October 2023-April 2024: C2, October 2024-April 2025) The evaluation team will collect this data from Elklan during June 2024 (C1) and June 2025 (C2) after all training-related activities have been completed (April 2024 and April 2025, respectively). Although EY practitioners will be aware that the evaluation team will have access to this data, given that it is being collected for another purpose (completion of course requirements) we do not anticipate taking any additional steps to minimise bias.

- **Bespoke setting questionnaires** will be completed by at least one LCP (ideally two) and one other staff member in intervention settings and by the designated LCPs (designated prior to randomisation, as above) in the control settings in both cohorts (1 and 2) (n=332 approximately). Setting questionnaires will explore:

    - at baseline - setting context (type of setting, population served, extent of early years provision i.e. age range, intake numbers), practitioner experience (including years of experience, qualifications, training undertaken), current practice, in particular in relation to knowledge, skills and confidence (captured through a combination of multiple choice questions and situational judgement tasks) relating to children's SLC needs, particularly for those children who are not at the expected development level (and referral routes), including participation in any recent initiatives relating to SLC e.g. DfE SENDCo training. Questions about knowledge, skills and confidence will be devised based around the content of the modules completed by practitioners and the EYFSP framework.
    - at post-evaluation - changes during the evaluation year for intervention and control settings (outside of the programme); referral rates and routes; changes in knowledge, skills and confidence of SLC needs (all); changes made as a result of the programme, including confidence and skills in providing differentiated support; experiences, facilitators and barriers to participating in the CFS programme and acquiring CFS-status (intervention-only), intentions

relating to the future (continue to maintain CFS, work towards acquiring CFS, additional training needs etc.).

- Additionally, at the post-evaluation stage we will also ask a member of the setting leadership team (SLT; n=166) to provide further setting context, including change within the setting during the evaluation period (e.g., unexpected change in staff turnover or improved retention of staff). SLT staff will also be asked about any additional costs of the programme, including practitioner time and any associated resources.

Survey responses will be predominately pre-coded to allow for ease of completion and to minimise burden on participants, with a limited number of open-response questions to allow for any clarification and added depth. Although these surveys will not be anonymous, participants will be reassured that their individual responses will not be linked back to them or their setting in any way and they will be encouraged to respond to the questions as openly as possible.

- **Visits to settings.** We will conduct 18 intervention setting visits in total. All visits will take place during C1. Six intervention settings will be visited at two timepoints. At the early intervention stages we will visit six settings (three SBS and three PVIs) to observe setting environment, activities relating to children's language, speech and communication needs and levels of differentiated support. The **observation schedule** will be based around a remodelled CFS audit-checklist in order to understand how CFS settings differ from business-as-usual. This will be followed by a short **interview** with one of the LCPs to explore the changes made in the setting more thoroughly and to discuss the topics covered in the questionnaires within the context of the individual setting. These settings will be revisited nearer the end of the C1 phase of the evaluation, around June to July 2024 (preferably just before or after an audit visit), to examine the overall experience of the training and programme implementation and explore further the development of knowledge and skills gained from the programme and the confidence of practitioners to provide differentiated support.

  A further six visits (three SBS and three PVIs) will be conducted midpoint during the C1 delivery period (March/April 2024) in order to cover the same topics, to provide a snapshot of delivery at one time point and provide greater breadth and depth to our understanding programme implementation and practice-change. In addition to setting type, all 12 settings will be purposively selected on other, selected variables primarily based on context gained from the baseline survey (e.g. size of setting, population served, practitioner training and prior experience). Given the expected heterogeneity of control settings we will not visit these settings, rather we will use the evidence of change presented in the learning logs, supplemented by questionnaire responses to assess 'business as usual'.

  While we recognise that researchers visiting settings, observing practice and conducting one-to-one interviews can influence behaviour the research team will be trying to determine whether or not their observations appear to be embedded within practice and part of normal routine. In addition, participants will be reassured that the reason for the visits is for the evaluation team to understand more about implementing the programme in practice and understanding practitioner views and experiences. Two researchers will visit at least one (ideally the first) setting visit together to ensure inter-observer reliability and a shared understanding of the observation instrument. Setting

staff will be given the opportunity to request to see a copy of their transcript if they wish to do so (see ethics section below).

The IPE is designed to be responsive and flexible, hence data collection will take place over different timepoints, allowing one phase to inform the next (e.g. baseline survey responses impacting on first setting visits and interviews which will subsequently influence second wave of setting visits and interviews, feeding into the post-evaluation surveys).

Analysis

The IPE has been designed to test the workings of the logic model (Figure 1), to check whether the intervention is operating as hypothesised. Table 4 summarises the range of methods that will be used to collect data in line with the implementation dimensions[13], how it relates to the IPE research questions and the analysis being undertaken to answer the research questions. The narrative for analysis follows the table and is presented by research question to show how the data will be triangulated with impact data, where relevant, and how it will test the ToC and causal mechanisms/assumptions using a synthesised approach. Where data is input into a spreadsheet this will be checked for errors. For any statistical analysis conducted within the IPE a spot check will be conducted of a sample of the analysis for quality assurance purposes. In addition, where qualitative data is coded in NVivo this will be conducted by two researchers to check for inter-coder reliability.

Table 4: IPE methods overview

IPE dimension[14]	RQ addressed	Research methods	Data collection methods	Sample size and sampling criteria	Data analysis methods
Fidelity/Adherence	IPERQ3, 4, 5	Surveys (baseline/endline)	Online questionnaires	At least one LCP and one other staff member in all (control and intervention) settings (min 332) (C1 & C2)	Descriptive statistics; thematic analysis
		Interviews	Semi-structured interviews	6 LCP's at two timepoints (C1 only) Purposely sampled based on setting size, population served, practitioner training and prior experience	Deductive coding; thematic analysis
		Observations	Structured observations	6 settings at two time points (C1 only) 6 settings at one time point (C1 only) Purposely sampled based on setting size, population served, practitioner training and prior experience	Deductive coding; thematic analysis
		Routine data	Training attendance, learning logs, challenge questionnaires, audit visit	From all intervention settings for all trained staff (C1 & C2)	Descriptive statistics; thematic analysis

[14] For definitions of the Implementation Dimensions see Humphries et al. (2016: p.6)

			check lists and accredited awards		
Dosage	IPERQ2	Attendance data	Attendance at training data	All trained LCP's and staff at asynchronous e-learning sessions, live virtual seminars and virtual seminars (C1 & C2)	Descriptive statistics
		Interviews	Semi-structured interviews	6 LCP's at endline (C1 only) Purposely sampled based on setting size, population served, practitioner training and prior experience	Deductive coding; thematic analysis
Quality	IPERQ1, 3, 4, 6	Surveys (baseline/endline)	Online questionnaires	At least one LCP and one other staff member in all (control and intervention) settings (min 332) (C1 & C2)	Descriptive statistics; thematic analysis
		Routine data	Training attendance, learning logs, challenge questionnaires, audit visit check lists and accredited awards	From all intervention settings for all trained staff (C1 & C2)	Descriptive statistics; thematic analysis
		Observations	Structured observations	6 settings at two timepoints (C1 only) 6 settings at one time point (C1 only)	Deductive coding; thematic analysis

				Purposely sampled based on setting size, population served, practitioner training and prior experience	
Reach	IPERQ2	Attendance data	Attendance at training data	All trained LPC's and staff at asynchronous e-learning sessions, live virtual seminars and virtual seminars (C1 & C2)	Descriptive statistics
		Interviews	Semi-structured interviews	6 LCP's at endline (C1 only) Purposely sampled based on setting size, population served, practitioner training and prior experience	Deductive coding; thematic analysis
		Surveys (baseline/endline)	Online questionnaires	At least one LCP and one other staff member in all (control and intervention) settings (min 332) (C1 & C2)	Descriptive statistics; thematic analysis
Responsiveness	IPERQ1, 2, 5, 6	Interviews	Semi-structured interviews	6 LCP's at endline (C1 only) Purposely sampled based on setting size, population served, practitioner training and prior experience	Deductive coding; thematic analysis
		Surveys (baseline/endline)	Online questionnaires	At least one LCP and one other staff member in all (control and intervention) settings (min 332) (C1 & C2)	Descriptive statistics; thematic analysis

		Observations	Structured observations	6 settings at two timepoints (C1 only) 6 settings at one time point (C1 only) Purposely sampled based on setting size, population served, practitioner training and prior experience	Deductive coding; thematic analysis
Programme differentiation	IPERQ4	Observations	Structured observations	6 settings at two timepoints (C1 only) 6 settings at one time point (C1 only) Purposely sampled based on setting size, population served, practitioner training and prior experience	Deductive coding; thematic analysis
		Surveys (baseline/endline)	Online questionnaires	At least one LCP and one other staff member in all (control and intervention) settings (min 332) (C1 & C2)	Descriptive statistics; thematic analysis
Monitoring of control condition	IPERQ4	Surveys (baseline/endline)	Online questionnaires	At least one LCP and one other staff member in all (control and intervention) settings (min 332) (C1 & C2)	Descriptive statistics; thematic analysis
Adaptation	IPERQ5, 6	Observations	Structured observations	6 settings at two timepoints (C1 only) 6 settings at one time point (C1 only)	Deductive coding; thematic analysis

				Purposely sampled based on setting size, population served, practitioner training and prior experience	
		Surveys (baseline/endline)	Online questionnaires	At least one LCP and one other staff member in all (control and intervention) settings (min 332) (C1 & C2)	Descriptive statistics; thematic analysis
		Interviews	Semi-structured interviews	6 LCP's at endline (C1 only) Purposely sampled based on setting size, population served, practitioner training and prior experience	Deductive coding; thematic analysis

IPERQ1 How far does the CFS-training impact on the knowledge, skills and confidence of LCPs with regard to children's speech, language and communication needs?

Methods and relation to the ToC and causal mechanisms

To test the assumption that training inputs will lead to enhanced confidence, knowledge and skills of LPC's, with regard to children's speech language and communication, we will bring together data captured within baseline and endline setting questionnaires (particularly questions around skills, confidence and knowledge of practitioners) and challenge questionnaires and learning logs collected as part of routinely collected data. Baseline and endline questionnaires will measure both change across time within the intervention and compare knowledge skills and confidence between intervention and control groups at baseline and endline.

Synthesis of the data and analysis

Setting questionnaires (baseline and endline) will be analysed descriptively and qualitative data will be analysed thematically using a deductive approach. Challenge questionnaires and learning logs (captured as part of routine data) will be analysed descriptively. Analysing the data captured in the intervention group and control group will allow the ET to understand how much CFS training has contributed to changes in skills, knowledge and confidence against those who have not received CFS training (but, who may have received other types of training). We will also use compliance data collected as part of the IE to understand how far programme compliance (for intervention-only) leads to better outcomes (as measured by the questionnaires). Any qualitative data gained from the setting will be coded deductively in NVivo and analysed thematically to give more depth of understanding to the quantitative data.

IPERQ2 To what extent is the CPD cascaded within settings?

Methods and relation to the ToC and causal mechanisms

To measure the extent to which the training has been cascaded in the setting we will bring together data from routinely collected data (attendance data, challenge questionnaires and learning logs), endline setting questionnaire data and endline interview data. Attendance data will be gathered as a measure of compliance. Challenge questionnaires and learning logs will be coded into quantifiable data and used to understand the nature and extent of cascading in the setting. Questionnaires and interview schedules will be developed to gather data on the level of cascading and to gain a deeper insight into how the cascading model works for this programme e.g. were LCPs able to deliver the one hour training to all staff over two terms. This research question will seek to understand if the cascading model works as intended to ensure EYPs have increased skills and knowledge.

Synthesis of the data and analysis

Training data will be used descriptively as a measure of compliance to ensure the programme was implemented as intended. Questionnaire data will be analysed descriptively to give an overall picture of the level of cascading within settings. Challenge questionnaires will be coded and analysed thematically to draw out key themes around the nature and

extent of cascading within the setting. Challenge questionnaire data will be linked to qualitative data derived from interviews which will be coded deductively in NVivo and analysed thematically to give a deeper understanding of how the cascading model works for the programme.

IPERQ3 To what extent does the CFS programme result in a whole settings approach to the speech, language and communication needs of children in terms of the Language Learning Environment, providing Language Learning Opportunities, and providing Language Learning Interactions?

Methods and relation to the ToC and causal mechanisms

To measure the extent to which the CFS programme results in a whole setting approach we will collate data from CFS audit checklists and completion of accredited awards (both collected as part of routine data), endline setting questionnaires and observations and interviews. CFS audit checklists will be used to assess which aims have been achieved within the settings. Questionnaires will be developed to probe into the changes made in settings from the start to the end of the programme. Observations and interviews will assess more directly the changes made within the settings particularly focusing on Dockerill et al.'s (2012) components of a communication friendly setting (i.e. the language learning environment, language learning opportunities and language learning interactions).

Synthesis of the data and analysis

CFS audit data will be quantified to give a score for each setting and we will descriptively look at similarities/differences between setting type (school based/PVI). Accredited awards gained within each setting will be averaged to allow for comparison across settings and across setting types. Qualitative data from questionnaires, observations and interviews will be coded deductively in NVivo and analysed thematically to give a broader understanding of what a whole settings approach looks like and how this may vary across setting type.

IPERQ4 What are the key observable features of a CFS setting (in terms of layout, interactions with children, programme strategies adopted by EYPs (and other staff) etc.)? How does this differ from usual practice?

Methods and relation to the ToC and causal mechanisms

Key observable features of a CFS setting will be input into a quality framework following pre-delivery observations of training and interviews with LCPs. This quality framework will be used to develop an observation schedule to monitor change over time in intervention settings. We will also gather data from the CFS audit checklists (collected as part of routine data) to assess change in usual practice over time (intervention group only). Setting questionnaires (at endline) will be designed to monitor change over time (intervention settings) and compare with the control condition (control settings). Interviews with LCPs will be designed to understand what change over time looks like within settings.

Synthesis of the data and analysis

Data gathered from the observations will be analysed within the context of the quality framework via a scoring system matching the scoring system used within the CFS audit checklists. Observation data will be linked with data gathered from the CFS audit checklists to evaluate if what was observed, at both time points, in the selected settings can be safely assumed to expand to other intervention settings. Qualitative data obtained from interviews

will be analysed thematically using a deductive approach and this data will be triangulated with observation and audit checklist data to understand what change overtime looks like. Setting questionnaires at baseline will be analysed descriptively and thematically using a deductive approach and this data will be used to understand differences between intervention and usual practice. Setting questionnaires at endline will also provide a comparison between intervention and the control condition.

IPERQ5 What are the barriers and facilitators for settings in undertaking and implementing the CFS programme (including training, cascading, whole setting change and achieving CFS-status)? Are there any particular factors affecting implementation with children, including particular characteristics of subgroups of children?

Methods and relation to the ToC and causal mechanisms

Endpoint surveys will be designed to probe into specific barriers and enablers in undertaking and implementing the CFS programme and implementation overall with children and with subgroups of children. Interview schedules for interviews with Elklan tutors and interviews with practitioners will also be designed to probe into these areas and ask more specifically how these barriers and enablers effect implementation and what knock-on effects there may be. Observation schedules will be designed to determine any particular factors affecting implementation of the programme with children and any other factors affecting the quality of implementation. This research question is designed to understand any factors affecting child-level outputs and thus, how this may impact (either positively or negatively) on child-level impact data.

Synthesis of the data and analysis

Endpoint surveys will be analysed descriptively to give an overall picture of the key facilitators and barriers to implementation. Data gathered from the observations will be analysed within the context of the quality framework and will be subjected to a thematic analysis to draw out key themes surrounding facilitators and barriers to implementing the programme to the expected level of quality. Qualitative data obtained from interviews will be analysed thematically using a deductive approach and this data will be triangulated with observation data and survey data to ensure that what was observed in the selected settings is a true representation of the main facilitators and barriers and how this may impact on child-level impact data.

IPERQ6 What are the perceived outcomes of the CFS training and CFS-status for early years settings, practitioners and children including impact on referral rates for specialist support? To what extent do child-level outcomes differ by socio-economic status? Are there any unintended consequences of the programme, at the setting, practitioner and child-level?

Methods and relation to the ToC and causal mechanisms

To test the assumption that the CFS programme outputs will impact on the setting environment, improve practitioner strategies to differentially support children's speech language and communication, perceived child outcomes and referral rates for specialist support we will bring together data from interviews with tutors, interviews with practitioners and endpoint surveys. Interviews with tutors will be designed to probe into practitioner engagement with the training as well as the perceived level of understanding of the main

elements of the training. Interviews with practitioners and endline surveys will be designed to understand impact at the setting, practitioner and child level and will also ask directly about referral rates for specialist support and unintended consequences of the programme.

Synthesis of the data and analysis

Quantitative data from the survey will be analysed descriptively to give an overall picture of perceived outcomes. All qualitative data will be coded using a deductive approach and analysed thematically to draw out key themes in perceived outcomes in each of the areas outlined above and specifically, we will look at referral rates and any reasoning for lower or higher referral rates compared to referral rates before the trial. Qualitative and quantitative data around perceived child-level outcomes will be triangulated with impact child-level outcome data to understand how, if at all, child-level outcomes may differ by socio-economic status.

Cost evaluation design

The cost evaluation will follow the most recent guidance from the EEF. All cost analyses will be conducted from the perspective of the settings. The costs will be broadly classified into three main categories as follows:

1. Prerequisites – this will include cost items already accessible to setting staff such as IT equipment needed to access the training.

2. Start-up costs – this will include the necessary components required to start the programme such as training costs.

3. Recurring costs – this will include resources required for each year of the programme. For example, whilst the programme is designed around resources which are routinely already available within settings, settings may choose to purchase additional equipment to assist with implementation or print and laminate posters for use around the setting. It may also include costs of cascading training for new members of staff and for all staff members for renewal of CFS-status after three years.

Cost data will be collected from relevant staff members by the evaluation team at different time-points throughout the trial. The collection of this data will be integrated into the IPE data collection methods. All LCPs and SLT staff will be advised beforehand that this data is required. They will be asked about specific cost-related data within the endline survey (summer 2024 and summer 2025 for C1 and C2, respectively) which will capture the amount of time (staff working hours) spent completing the relevant training components of the programme, including cascading, mentoring and embedding the CFS programme and the cost of any cover staff (if incurred; alternatively if no monetary costs were incurred, how this was organised within settings); any start-up and prerequisite costs; any recurring implementation costs; and any unexpected or hidden costs associated with training or implementation.

In addition to collecting data via surveys, in-depth cost data will be collected during setting visit interviews. Staff will be made aware in advance of questions relating to costs prior to interview(s) so they can prepare if necessary.

The total cost per setting for a programme as implemented over three consecutive years, and the cost per-child-per-year will be presented[15]. Costs will be estimated for the programme as it was implemented during the trial. Costs will be estimated using market values (i.e., not including any subsidies provided by the EEF for the purposes of the trial). Published unit costs will be utilised where possible, for example salary costs. Costs will be valued as per the year of analysis (expected 2024 and 2025). Sensitivity analyses will be conducted to account for any uncertainty in the costing estimates. Sensitivity analyses will also be conducted to estimate the cost impact of variations to implementation delivery.

Ethics and registration

Ethical approval for this study has been obtained from the Education Ethics Committee, University of York (Ref: 23/8).

All participating settings will sign a Memorandum of Understanding that covers information about the study, the respective responsibilities of setting, evaluation team and programme delivery team and the ways in which the data will be handled under GDPR regulations (see below). The MOU also covers future data archiving in the EEF archive.

Setting staff will give informed consent to be observed and to take part in interviews. Setting staff will be given the opportunity, if they request it, to view a copy of the transcript of their interview and will have up to ten days after data collection or viewing their transcript (if they should wish to do so) to withdraw this data from the evaluation. After this point it will be anonymised.

Parental consent will be obtained for those children taking the assessments. Parents will be able to withdraw that consent at any time before August 2024 for C1 or August 2025 for C2 by contacting the evaluation team directly.

Associated privacy notices will also be issued where appropriate. All consent forms and privacy notices are available via the Elklan Training Ltd website.

The trial will be registered with the ISRCTN on agreement of the protocol.

Data protection

All child data and any other personal data used for the project will be treated with the strictest confidence and will be used and stored in accordance with the General Data Protection Regulation (GDPR) (2018) and the Data Protection Act (2018). Personal data will be processed under Article 6 Section (e) of the GDPR ('Tasks carried out in the public interest') as the research is being conducted to support early years provision in the UK. This is in line with the University's charter which states learning and knowledge will be advanced through teaching and research. The University of York will be deemed a Data Controller (as defined by the data protection legislation) with regard to personal data collected for the evaluation including child-level data, setting-level data, and data provided by individual setting staff (i.e. through surveys or interviews). Elklan will be the Data Controller for data collected as part of the programme (e.g. learning logs, audit checklists and online questionnaires) and childminder personal data, for the purposes of recruitment and training. Where programme data is shared

[15] Within this it is recognised that PVI settings may be open for a longer period of time than the more traditional 'academic year' favoured by school-based settings, and this will be taken into account when describing the costs incurred for this evaluation.

with the University of York, the University of York shall be the Data Controller for the purposes of the evaluation.

Information sheets and consent forms will be provided to potential participants as appropriate with associated privacy notices, where applicable. These participant information sheets will be compliant with the requirements of the GDPR including a clear statement of the University's legal basis for processing personal data.

A Data Protection Impact Assessment has been put in place under the oversight of the Data Protection Officer at the University of York (DPIA_331; approved 20/01/2023) with regular review periods. All data collected will be subject to quality assurance procedures, to assess reliability, accuracy and consistency. Confidentiality will be maintained and no-one outside of the Evaluation Team will have access to the database which will be held securely on University of York servers. All outputs (including the statistical database, reports and publications) will be anonymised. The University of Sheffield will only have access to anonymised data. No participant or setting will be identifiable in the report or dissemination of results.

A data sharing agreement will be put in place between the University of York, Elklan Training Ltd and each setting which will include the details of the types of personal data being shared, the purpose and duration of that sharing and the responsibilities each party has in relation to that information. All data transferred between external parties (i.e. Elklan, settings, transcription service) and internal data collectors will be done so via the University of York's secure DropOff Service. A professional transcription service will be used to transcribe the interviews but participant personal information will not be shared with them. To further reduce any risk of data sharing by the transcription service, the University's approved service will be used with whom there is an existing data-sharing agreement.

All personal data held by the Evaluation Team will be retained for five years after publication of the final report and then securely destroyed. Anonymised data will be kept indefinitely. All results will be anonymised so that no setting or individual student will be identifiable in the report or dissemination of any results.

For the purpose of research and archiving, the child data will be shared with the Department for Education (DfE), the EEF, the EEF's archive manager, the Office for National Statistics (ONS) and potentially other research teams. At the point of archiving, the EEF will be the data controller for the dataset, once internal quality checks have been successfully completed by the archive manager. Data in the EEF's archive in the Office for National Statistics (ONS) Secure Research Service will include data only individually identifiable to the DfE, the government department responsible for children's services and education, and is kept indefinitely for the purposes of future research. Matching to the National Pupil Database and other administrative data may take place during subsequent research, and it may possibly be linked with other datasets after archiving.

Personnel

The Delivery Team is responsible for liaising with the Stronger Practice Hubs, recruiting participants, delivering the programme and liaising with the Evaluation Team in order to ensure the smooth-running of the evaluation and associated data collection activities.

The Delivery Team comprises:

Henrietta McLachlan (Director, Elklan Training Ltd). Henrietta will lead on programme materials, initial tutor briefing and training, course delivery and quality assurance.

Alex Hall (Project Manager, Elklan Training Ltd.) Alex will lead on liaison with the Stronger Practice Hubs, setting recruitment, budgeting and reporting to project partners and funders.

The Evaluation Team is responsible for the conduct of the evaluation, including writing the protocol and SAP, registering the trial, writing evaluation-related consents, data sharing agreements and privacy notices and gaining ethical approval, data collection, analysis and writing the final report.

The Evaluation Team comprises:

Dr Louise Tracey (Principal Investigator, University of York). Louise will be responsible for the overall conduct of the efficacy, including the design, analysis and report writing. She will manage the project research assistant.

Professor Claudine Bowyer-Crane (Co-Investigator, The University of Sheffield). Claudine will be jointly responsible for the overall conduct of the pilot study, including the design, analysis and report writing.

Elizabeth Colman (Co-Investigator, University of York). Elizabeth will contribute to the design of the study, undertake the randomisation, write the statistical analysis plan, conduct the analysis for the impact evaluation and contribute to writing the final report.

Dr Erin Dysart (Co-Investigator, University of York). Erin will assist with instrument design, data collection, analysis and report writing.

Professor Carole Torgerson (Co-Investigator, University of York). Carole will advise on design, contribute to the report writing and oversee the quality assurance aspects of the evaluation.

Research Assistant (Project Co-ordinator, University of York). The Research Assistant for the study will be responsible for the day-to-day running of the project, including managing data collection, processing data in line with data protection regulations and study protocols, analysis and reporting.

Risks

Table 6 outlines the main risks to the efficacy trial and the measures to be taken to mitigate them.

Table 6: Risks and mitigating steps

Risk	Likelihood/Impact	Preventative measures	Revised Impact
Insufficient settings recruited/retained.	Moderate/High	● Work closely with the DT and SPHs to ensure effective recruitment ● Follow advice as far as possible from EEF in terms of clear communication re: recruitment, expectations, minimising burden	Medium

		• Oversample SBS • Ensure more than one contact point per setting to mitigate again staff turnover • Accounted for 10% pre-randomisation attrition, and 15% post-randomisation attrition in sample size	
Insufficient numbers of children recruited/retained	Moderate/High	• Oversample school-based settings • Settings paid incentive at point of randomisation • We have accounted for 10% pre-randomisation attrition, and 15% post-randomisation attrition in sample size • Clear information will be given to parents with a named point of contact. • Recruitment of parents to begin once the new academic year starts (September 2023) to avoid sampling bias with clear timeline in place for settings to recruit parents prior to assessments taking place (2 week window 5th-15th September 2023). • Processes in place e.g. sharing of parent sign-ups via QR codes to ensure parent recruitment is transparent to both the evaluation team and individual settings.	Medium
Implementation/ crossover effects	Low/High	• Waitlist design • IPE to assess extent of programme strategies or other language interventions occurring in settings	Low
Low completion of measures/IPE surveys	Moderate/High	• Child outcome measures completed by trained data collectors • Assessment visits arrange to suit settings with return visits included • Reminders and follow-ups • Incentive paid on completion of baseline and at completion of endline • Reminders and follow-ups	Low

Project Management and Capacity	Low	Louise Tracey (PI) has extensive experience of managing large-scale RCTs and evaluations in similar areas and of working with all team members (ParentChild+, Starting Schools, 5Rs). Sufficient team members that, in the event of staff absence, others would be able to take on the additional tasks as needed. We work in a transparent way in order to facilitate this.	Low

Timeline

Table 7: Timeline

Dates	Activity	Staff responsible/ leading
March – August 2023	Setting recruitment (C1)	Elklan/SPHs
Jul 2023 – Mar 2024	Pre-delivery training and working towards CFS-status	Elklan
July 2023	Pre-delivery evaluation activities	University of York
Sept 2023 – June 2024	Setting recruitment (C2)	Elklan/SPHs
5th-15th Sept 2023[16]	Parent consent for child participation in the study (C1)	Settings
September 2023	Baseline staff surveys (C1)	Settings
18th Sept-20th Oct 2023	Baseline child assessments (C1)	University of York

[16] It is recognised that for some settings parental recruitment may take a little longer given the tight timescales and requests for extensions will be dealt with on a case by case basis.

2nd October 2023	Randomisation (C1)	University of York
Oct 2023-Mar 2024	SLS 3-5s and CCs training (intervention settings) (C1)	Settings
Nov – Dec 2023	Visits by evaluators to 6 selected settings (C1)	University of York
Jan – Feb 2024	Midpoint visits to 6 selected settings (C1)	University of York
April 2024	All training activities to be completed (intervention settings) (C1)	Elklan/Settings
April-May 2024	Return visit to first 6 selected settings (C1)	University of York
June-July 2024	Endline staff surveys (C1)	Settings
June-July 2024	Endline child assessments (C1)	University of York
Sept 2024	Parent consent for child participation in the study (C2)	Settings
September 2024	Baseline staff surveys (C2)	Settings
Sept/Oct 2024	Baseline child assessments (C2)	University of York
October 2024	Randomisation (C2)	University of York
Oct 2024-Mar 2025	SLS 3-5s and CCs training (intervention settings) (C2)	Settings
April 2025	All training activities to be completed (intervention settings) (C2)	Elklan/Settings

June-July 2025	Endline staff surveys (C2)	Settings
June-July 2025	Endline child assessments (C2)	University of York
December 2026	Draft report submitted	University of York
July 2026	Evaluation report published	University of York/EEF

References

Beard, A. (2018). 'Speech, language and communication: a public health issue across the lifecourse', *Paediatrics and Child Health*, 28*(3)*, pp.126-131,

Beck I, McKeown M and Kucan L (2013) *Bringing Words to Life: Robust Vocabulary Instruction*. 2nd ed. New York: Guildford Press.

Bloom, B.S. (1956) Taxonomy of Educational Objectives Handbook 1 New York: Longman.

Bonetti, S. (2020) *Early years workforce development in England: Key ingredients and missed opportunities*. Education Policy Institute.

Bonetti, S. Ziolkowski, S. & Broadbery, J. (2021) The Covid-19 pandemic and the early years workforce: February-May findings. National Day Nurseries Association and Education Policy Institute.

Clegg, J., Rohde, C., McLachlan, H., Elks, L., & Hall, A. (2020). Evaluating the Elklan Talking Matters Programme: Exploring the impact of a training programme for early years professionals on pre-school children's language development. *Child Language Teaching and Therapy*, *36*(2), 108–125. https://doi.org/10.1177/0265659020929547

Conti-Ramsden, G., Durkin, K., Toseeb, U., Botting, N. & Pickles, A. (2018). Education and employment outcomes of young adults with a history of developmental language disorder. *International Journal of Language and Communication Disorders*, 53(2), 237-255.

Department for Education (2019). *'National curriculum assessments: key stage 2, 2019 (revised)'* (Table N4a).

Department for Education (2022). The early years workforce: recruitment, retention and business planning.

Dockrell, E. J., Bakopoulou, I., Law, J., Spencer, S., & & Lindsay, G. (2012). *Developing a communication supporting classrooms tool*. London: Department for Education.

Education Endowment Foundation (2022) Communication and Language approaches.

Fey., M.E. (1986). *Language intervention with young children*. San Diego: College-Hill.

Goswami, U., 2003. Early Phonological Development and the Acquisition of Literacy. In: S.B. Neuman and D.K. Dickinson, ed. 2003. *Handbook of Early Literacy Research, Volume 1*. New York: The Guilford Press, pp.111-125.

Hay, I., Fielding-Barnsley, R., & Taylor, T. (2010). Facilitating young children's language and vocabulary development using a cognitive framework. *He Kupu e-journal*, *2*(3), 37-46.

Humphrey, N., Lendrum, A., Ashworth, E., Frearson, K., Buck, R. & Kerr, K. (2019). Implementation and process evaluation (IPE) for interventions ineducation settings: An introductory handbook. Education Endowment Foundation.

Joffe, V.L., Rixon, L. & Hulme, C. Improving storytelling and vocabulary in secondary school students with language disorder: a randomized controlled trial. *International Journal of Language and Communication Disorders*, 54(4), 656-672.

Klem, M., Melby-Lervåg, M., Hagtvet, B., Lyster, SA., Gustafsson, J.E., Hulme, C. (2015). Sentence repetition is a measure of children's language skills rather than working memory limitations. *Dev Sci.* 18(1): 146-54. doi: 10.1111/desc.12202.

Kolb, D. (1984). Experiential Learning. Englewood Cliffs, NJ: Prentice Hall.

Law, J., Charlton, J., Dockerell, J., Gascoigne, M., McKean, C., & Theakston, A. (2017). Early Language Development: Needs, provision and intervention for preschool children from socio-economically disadvantaged backgrounds. A report for the Education Endowment Foundation. Education Endowment Foundation.

Lees, J. & Unwin, S. (1997) Children with Language Disorders Whurr Publications.

Menzies, V., Eerola, P., Cramman, H., Ashraf, B., Einbeck, J. & Gray, H. (2022) Evaluating the impact of the Parents and Children Together (PACT) programme on the language skills of 3- to 4-year-old nursery children, a two-armed randomised controlled trial [PACT-3]. Evaluation Protocol. Education Endowment Foundation.

Miller, S., Biggart, A., Sloan, S. & O'Hare, L. (2017) Success for All. Evaluation report and executive summary. Education Endowment Foundation.

Ofsted (2022). Education recovery in early years providers: spring 2022.

Ota, C. & Auston, A. (2013). Training and mentoring: Family childcare providers' use of linguistic inputs in conversations with children. *Early Childhood Research Quarterly*, 28. 972-983.

Renfrew, C. (2010) Action Picture Test Revised Edition. Buckingham: Hinton House Publishers Ltd.

Robinson-Smith, L., Fairhurst, C., Stone, G., Bell, K., Elliott, L., Gascoine, L., Hallett, S., Hewitt, C., Hugill, J., Torgerson, C., Torgerson, D., Menzies, V. & Ainsworth, H. (2018). Maths Champions. Evaluation report and executive summary. Education Endowment Foundation.

Robinson-Smith, L., Menzies, V., Cramman, H., Wang, Y., Fairhurst, C., Hallett, S., Beckmann, N., Merrell, C., Torgerson, C., Stothard, S. and Siddiqui, N. (2019). EasyPeasy: Learning through play. Evaluation report. Education Endowment Foundation.

Roulstone, S., Law, J., Rush, R., Clegg, J. and Peters, T., 2011. Investigating the role of language in children's early educational outcomes Research Report. DFE-RR134. Department of Education.

Salas, E., DiazGranados, D., Klein, C., Burke, C.S., Stagl, K.C., Goodwin, G.F. & Halpin, S.M. (2008). Does team training improve team performance? A meta-analysis. *Hum Factors*, 50 (6), 903-33.

Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I. and Taggart, B. 2004. *The Effective Provision of Pre-School Education EPPE) Project: Technical Paper 12 - The Final Report: Effective Pre-School Education*. London: DfES/Institute of Education, University of London.

Torgerson, C.J., Wiggins, A., Torgerson, D.J., Ainsworth, H., Barmby, P., Hewitt, C., Jones, K., Hendry, V., Askew, M., Bland, M., Coe, R., Higgins, S., Hodgen, J., Hulme, C., Tymms, P. (2011) Every Child Counts: the independent evaluation. Technical report. Research Report DFE-RR091a Department for Education.

Tracey, L., Bowyer-Crane, C., Bonetti, S., Nielsen, D., D'Apice, K. & Compton, S. (2022) The impact of the Covid-19 pandemic on children's socio-emotional wellbeing and attainment during the Reception Year. Research Report. Education Endowment Foundation.

Vygotsky, L.S. (1978). *Mind in society: The development of higher psychological processes*. Massachusetts: Harvard University Press.

West, G., Snowling, M. J., LervAag, A., Buchanan-Worster, E., Duta, M., Hall, A., McLachlan, H., & Hulme, C. (2021). Early language screening and intervention can be delivered successfully at scale: evidence from a cluster randomized controlled trial. Journal of Child Psychology and Psychiatry, 62(12), 1425-1434.

Yoder, P.J., Molfese, D. and Gardner, E., 2011. Initial mean length of utterance predicts the relative efficacy of two grammatical treatments in preschoolers with specific language impairment. *Journal of Speech, Language and Hearing Research*, 54(4), 1170-1181.

Appendix

Figure 2. Assumed causal mechanisms. Evidence strength assessed by the delivery team.

Note: (i) green- the evidence base is very strong, (ii) green/amber-the evidence base is strong, (iii) red/amber-the evidence base is developing (iv) red- the evidence base is limited.

#	Assumption / Causal Mechanism	Where in the ToC does the assumption apply?		Evidence	Evidence Strength
1	New knowledge is necessary to change behaviour	Output	Short-term outcome	Bloom, 1956; Krathwohi, 2002	Green
2	Implementing and reflecting on changes in practice/strategies increases the liklehood of embedding them	Output	Short-term outcome	Kolb, 1984; Anderson 2008	Green
3	Whole setting staff CPD increases liklehood of changed practice	Output	Short-term outcome	Salas, DiazGranados, Klein, 2008	Green
4	Awards (accreditations) increase engagement with CPD	Output		Atkinson, J. and J.O. Raynor, Motivation and Achievement. 1974, New York: W	Amber/Green
5	Provision of a communication friendly environment promotes children's communication development	Short-term outcome	Long-term outcome	Clegg, 2020; Dockrell, Bakopoulou, Law, Spencer, Lindsay, 2012	Green
6	Quality adult-child interaction, including adults: •Reducing numbers of questions and giving extended time for responses •Providing a breadth of vocabulary at appropriate level for child •Modelling language to increase sentence length/complexity •Narrating children's activity accelerates development of speech, language and communication	Output	Short-term outcome	EEF, 2022 • Questioning: Hay et al., 2010 • Vocabulary: Senechal, 2006; Carroill, 2011; Beck and McKeown, 2013 • Modelling: Yoder, 2011 • Narrative: Joffe et al (2019)	Green
7	Differentiating support for children's language so it is tailored to each child's needs (in the zone of proximal development) increases its effectiveness	Output	Short-term outcome	Vygotsky,1978	Green
8	Accelerated development of speech, language and communication improves academic attainment	Short-term outcome	Long-term outcome	DfE, 2019	Green
9	Accelerated development of speech, language and communication improves life chances	Short-term outcome	Long-term outcome	Conti-Ramsden, Durkin, Toseeb, Botting, Pickles, 2018	Green