
# Hanen Learning Language and Loving It (LLLI)

Evaluation report

July 2024

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# About the evaluator

The project was independently evaluated by a team from the National Centre for Social Research: Mary McKaskill, Jonah Bury, Enes Duysak, Georges Poquillon, Miranda Phillips, Sehaj Bhatti, Hannah Morgan, Natasha Phillips, Julia Ruddick-Trentmann, Charlotte Lilley, Rebecca Parker, and Molly Scott.

The lead evaluator was Jonah Bury and up until endline testing. Mary McKaskill was the principle investigator who led the evaluation through to completion of endline testing, analysis, and reporting.

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# Executive summary

## The project

Learning Language and Loving It™ – The Hanen Program® for Early Childhood Educators (Hanen LLLI) is a training programme for Early Years (EY) practitioners to promote social, language, and literacy learning in nurseries. It is a Continuing Professional Development (CPD) programme designed to provide staff with practical strategies to enhance children's communication and language skills through specialised ways of interacting and communicating with children during normal daily routines.

Hanen LLLI was co-delivered by two qualified and Hanen-certified trainers who were either speech and language therapists (SLTs) or EY consultants (EYCs), known as Program Leaders, to children aged three to four years old. The 31-week intervention consists of an initial information event for settings: one introductory workshop; eight training workshops for practitioners lasting two and a half hours each; six individual video feedback sessions lasting 30 to 40 minutes; and one baseline visit as well as one post-programme visit per setting, conducted in person. Half of the workshops and all the video feedback sessions were delivered online.

Hanen LLLI was developed by The Hanen Centre, and was coordinated and delivered by Communicate SLT CIC, a Community Interest Company (CIC), which provides SLT services and is based in the North-West of England. Communicate SLT CIC are Hanen-certified trainers for some of the Hanen programmes but are otherwise not affiliated with The Hanen Centre.

This efficacy trial, conducted by the National Centre for Social Research (NatCen), evaluated the impact of Hanen LLLI using a two-arm cluster randomised controlled trial (RCT). The randomisation was stratified by region and setting type (maintained versus private, voluntary, and independent [PVI]) to ensure settings from the same region, or with a similar type of provision, were evenly allocated to the treatment and control groups. A total of 1,104 children in 72 treatment settings and 995 children in 68 control settings agreed to take part in the study and completed baseline testing. During endline testing, primary outcome data was collected from 962 children in 70 treatment settings and 889 children in 68 control settings. The primary outcome was language development, as measured by the British Picture Vocabulary Scale, Third Edition (BPVS-3) score. A mixed method implementation and process evaluation (IPE) collected additional data through interviews with trained practitioners, non-trained practitioners, setting managers, and Program Leaders. Researchers from NatCen also observed training workshops at different stages of implementation. Randomisation took place in August 2022 and endline testing was completed in July 2023.

*Table 1: Key conclusions*

| Conclusions |
|---|
| 1. Children in Hanen LLLI settings made the equivalent of one additional months' progress in language development, as measured by the BPVS-3 scores, on average, compared to children in other settings. These results have a moderate to high security rating. As with any study, there is statistical uncertainty regarding this impact consistent with small negative impacts or higher positive impacts. As a result of this uncertainty, the evaluator was unable to conclude that this was a genuine effect. |
| 2. Children in Hanen LLLI settings made the equivalent of one additional months' progress in language development, as measured by the Renfrew Action Picture Test. Fifth Edition (RAPT) grammar or information scores. Similarly to the primary outcome, the evaluator was unable to conclude that this was a genuine effect. The evaluation also found no evidence that children in Hanen LLLI settings had any differences in socio-emotional behaviour as measured by the Strengths and Difficulties Questionnaire-Teacher version (SDQ-T) scores. |
| 3. Children in Hanen LLLI settings who were eligible for Early Years Pupil Premium (EYPP) made the equivalent of one additional months' progress in language development as measured by the BPVS-3 scores, on average, compared to EYPP eligible children in other settings. The evaluator was unable to conclude that this was a genuine effect due to the statistical uncertainty around the effect size, and the sample not being sufficiently powered to detect an effect of this size. |
| 4. Children in Hanen LLLI settings with lower initial language development made the equivalent of one additional months' progress in language development as measured by the BPVS-3 scores on average, compared to children with lower initial language development in other settings. Similar to the primary outcome, the evaluator was unable to conclude that this was a genuine effect. |
| 5. The IPE found evidence of improvement in nursery practitioners' practice, and an increase in the quantity and quality of interactions with children. It also found that Hanen LLLI was delivered with fidelity, and compliance standards were largely met by participants. Hanen LLLI was generally perceived positively by trained practitioners and Program Leaders, as well as staff in participating nurseries, even if they were not directly involved with the intervention. Cascading varied across settings, but the IPE found that it was perceived positively as a vehicle to increase the intervention's impact on children, although it required greater structure and guidance to implement it well consistently. |

## EEF security rating

These findings have a moderate to high security rating. This was an efficacy trial, which tested whether the intervention worked under developer-led conditions in a number of schools. The trial was powered to detect an effect of 0.206. This is very close to but is below the threshold for a five padlock rating. In addition to this, 17% of settings that started the trial were not included in the final analysis because their setting did not provide test data. The level of pupil-level attrition

is also difficult to determine as the number of children tested at baseline is used in calculations for attrition as opposed to the number of children randomised, which means that the pupil level of attrition could be a higher percentage. The evaluation findings also highlighted evidence of 'floor effects' for the primary outcome during baseline testing. Nevertheless, the pupils in Hanen LLLI settings were similar to those in the comparison settings in terms of prior attainment.

## Additional findings

Pupils in Hanen LLLI schools made, on average, one months' progress in language development, as measured by the BPVS-3 scores, than those in the control group equivalent. This is our best estimate of impact, which has a moderate to high security rating. As with any study, there is always some uncertainty around the result: the possible impact of this programme also includes the very small negative effects and slightly larger positive effects of up to two months of additional progress.

NatCen conducted exploratory subgroup analyses for the trial. The first subgroup analysis assessed whether Hanen LLLI had a differential impact for pupils who were eligible for EYPP, which provides settings with additional funding for all three- to four-year-olds from low-income families. The second analysis assessed whether Hanen LLLI had a differential impact for children with lower initial language development. NatCen's exploratory analysis suggests that there is no evidence that Hanen LLLI had a differential impact on pupils in the treatment group based on their eligibility for EYPP, and they did not find a differential impact on pupils in the treatment group based on pupils' initial language development level.

The findings from the IPE indicate that Hanen LLLI was effectively delivered and positively received by participants. Practitioners expressed challenges in observing cohort-level changes in outcomes or comparing intervention children with previous cohorts, but they did notice improvements in specific pupils and acknowledged when individual children responded well to the strategies. There was a view from trained practitioners that it would be too early to detect a change in outcomes in this evaluation, and that this would come with time as the strategies were cascaded to the non-trained practitioners in the setting. While some evidence of improvements in practitioners' practice was found, particularly in the quantity and quality of interactions with children, the benefits were more pronounced among less experienced staff. However, not all reported benefits to staff practice were supported by pre- and post-intervention video scores, which showed modest improvements. Results in control settings were also similar to those in the treatment settings. The combination of workshops and video feedback sessions was highlighted as particularly impactful, with practitioners describing significant growth during the video feedback sessions. Participants varied in the extent to which learning was cascaded within their settings, but there was recognition of the importance of cascading for maximising the intervention's impact. Notably, cascading was considered optional by practitioners, despite it being included in the programme's logic model. Encouraging more formalised cascading and providing additional resources and support for Program Leaders and participants could enhance the consistency and quality of applying Hanen LLLI to practice and mitigate the risk of strategies being diluted.

The EEF previously funded an efficacy evaluation of Hanen LLLI that was reported in April 2022. Results found that surveyed participants reported they would prefer a mixed delivery mode for both training sessions and video feedback sessions. The EEF wished to explore whether mixed-mode training delivery was feasible and suitable for both PVI and maintained settings before subjecting this new delivery model to an impact evaluation. NatCen was therefore commissioned to conduct a pilot evaluation between January 2022 and August 2022 ahead of this efficacy trial. The pilot, reported in March 2023, suggested that mixed-mode delivery was feasible and acceptable to practitioners, though there was a preference for the in-person workshops. The views on this issue in this efficacy trial were mixed, with approximately half of the practitioners who responded to the IPE survey stating their preference for all in-person workshops, but the video feedback sessions being delivered online was perceived positively.

## Cost

The cost per setting for delivering Hanen LLLI over a three-year period averages to £1,594.67. The per pupil per year cost for delivering Hanen LLLI is £43.50 (excluding pre-requisites) or £48.56 (including pre-requisites).

## Impact

*Table 2: Summary of impact on primary outcome*

| Outcome / group | Effect size (95% confidence interval) | Estimated months' progress | EEF security rating | No. of pupils | P-value | EEF cost rating |
|---|---|---|---|---|---|---|
| All pupils standardised to BPVS-3 score | 0.05 (-0.04, 0.14) | 1 | 🔒🔒🔒🔓🔓 | 1,830 | 0.230 | £ £ £ £ £ |
| EYPP eligible pupils | 0.08 (-0.15, 0.31) | 1 | N/A | 287 | 0.392 | £ £ £ £ £ |

# Introduction

## Background

**Policy background**

Early language skills are a crucial building block for children's development. Children naturally develop language skills at different rates, but as the Department for Education data shows (DfE, 2019a; DfE, 2022a), some children fall behind at an early age. According to the Early Years Foundation Stage (EYFS) Profile in 2019, 73% of children were found to have reached the expected level across the Communication and Language and Literacy domains (DfE, 2019a). This has fallen to 67% in 2021/2022, after a pause in data collection in the years between, due to the Covid-19 pandemic (DfE, 2022a). Children from socially disadvantaged backgrounds (indicated by free school meals eligibility) are, on average, much more likely to experience delays and difficulties in their language development (DfE, 2022a).

The importance of language skills is reflected in the revised EYFS Framework, which became statutory at the beginning of the academic year 2021/2022 (DfE, 2023). Reforms to the EYFS Early Learning Goals were implemented in response to a review of Reception year in 2017, which recommended a greater focus on spoken language and vocabulary development (Ofsted, 2017).

A key determinant of language development is the amount and quality of language to which a young child is exposed to (Weisleder and Fernald, 2013). Given that over 95% of three- to four-year-olds participate in formal early education in England (DfE, 2018), Early Years (EY) nursery staff play an important role in children's language development at this stage. The Office for Standards in Education, Children's Services and Skills (Ofsted) assessed the overall effectiveness for the majority (96%) of all EY settings[1] as good or outstanding and, of the settings that received a full inspection in 2021/2022, 83% were judged to have either good or outstanding overall effectiveness. The proportion of EY providers overall that were judged at good or outstanding in full inspections fell by six percentage points between 2019/2020 (89%) and 2021/2022 (83%). Pre-schools and nurseries saw the greatest decline with the proportion of settings being judged as good or outstanding falling from 85% in 2019/2020 to 79% in 2021/2022 (Ofsted, 2022). The majority of the EY workforce is at least Level 3 qualified staff (below degree level) (DfE, 2022b) and recent research points to a downward trend in qualifications (EPI, 2020). It is likely therefore, that the workforce would benefit from Continuing Professional Development (CPD) targeted at children's language development; indeed, practitioner training in children's communication and language development is a key component of the government's EY education recovery programme (DfE, 2022c).

**Existing evidence**

In 2017, the Education Endowment Foundation (EEF) published Law *et al.'s* (2017) review of early language interventions, which recommended further research on the effectiveness of training nursery staff to deliver programmes within EY settings, and specifically recommended trialling Learning Language and Loving It™ – The Hanen Program® for Early Childhood Educators (Hanen LLLI). The review reported on three evaluations of Hanen LLLI. An efficacy trial by Girolametto *et al*. (2003), in which 16 United States (US) teachers of three- to five-year-olds were randomly assigned to receive Hanen LLLI training, found that pupils who engaged in shared reading and playdough activities used a greater number of utterances, multiword combinations, and peer-directed utterances. However, the number of different words did not differ by group. Cabell *et al*. (2011) reported on a randomised controlled trial (RCT) of a programme that trained 49 US teachers of three- to five-year-old kindergarteners in Hanen LLLI. There was no impact on spoken language outcomes, but the treatment group outperformed the control group for expressive vocabulary. Piasta *et al*. (2012) reported on an RCT of a US programme based on Hanen LLLI in which 49 nursery staff received training. The authors found a positive difference in the total utterances, number of different words, and mean length of utterance. The review highlighted high effect sizes on staff's conversational responsiveness to children, and children's linguistic productivity and complexity. However, the findings of these studies hold low security ratings (per the EEF guidelines), were undertaken in the US, and completed with small samples of settings/practitioners. Overall, the review found that Hanen LLLI was particularly promising, and that while most language interventions focus on improving vocabulary, Hanen LLLI recognised the importance of conversation and oral narrative.

[1] EY settings for this particular statistic include childminders, childcare on non-domestic premises, childcare on domestic premises, home childcarers, and the school-based sector (maintained and private, voluntary, and independent [PVI]).

This is the first trial of Hanen LLLI in the UK. A small-scale pilot evaluation of Hanen LLLI conducted by the National Centre for Social Research (NatCen) for the EEF in 2019 explored evidence of promise, feasibility, and readiness for trial. Overall, the pilot evaluation found the intervention to be attractive to EY settings and showed evidence of promise regarding changes to nursery staff's interactions with children.

Subsequently, an RCT was planned for the 2019/2020 academic year to study the impact of Hanen LLLI on children's language outcomes. This was initially planned to take place across 31 weeks, including introductory workshops, eight training workshops (lasting two and a half hours each), six individual video feedback sessions per participant, and a pre- and post-intervention video feedback session. However, due to Covid-19 pandemic disruptions, the trial was paused in March 2020 and resumed in the academic year 2020/2021 with the remaining programme content delivered over an additional 30 weeks. Ongoing Covid-19 disruptions meant the training moved from in person to online delivery and the impact evaluation was cancelled in March 2021. The implementation and process evaluation (IPE) carried out across the two academic years (2019/2020 and 2020/2021) involved interviews with nursery staff, Program Leaders, and senior staff from nurseries in the treatment group and the control group, observations of workshops and video feedback sessions, a nursery staff survey, and analysis of attendance data. The training was received well by nursery staff, with nearly all those surveyed (98%) reporting they had a positive experience of Hanen LLLI. Nursery staff also felt that participating was beneficial for their practice, feeling more confident implementing the training over time, and reported developing a greater awareness of the children's different conversational styles, making their teaching more responsive to individual children's needs. The majority of survey respondents also agreed that children's exposure to Hanen LLLI-trained staff had increased the amount of high-quality child–staff interactions (88%), child-initiated interactions (86%), and the frequency of children's turn-taking interactions (86%).

Results from this IPE, published in April 2022, found that surveyed participants reported that they would prefer mixed-mode delivery for both training sessions and video feedback sessions. The Hanen Centre developed materials so the training could be delivered as mixed mode, with some sessions in person and others online. The EEF sought to explore whether mixed-mode training delivery was feasible through commissioning a pilot, which was formally evaluated with an IPE before the efficacy trial began in November 2022. The pilot study was carried out between January 2022 and August 2022.[2] Following recruitment in January 2022 and February 2022, the intervention was delivered from March 2022 through July 2022. The evaluation focused on the feasibility of mixed-mode delivery of Hanen LLLI and the extent to which practitioners who took part in the Hanen LLLI training programme could cascade their learning to non-trained staff in their settings. Fieldwork involved a web-based survey to all participants and in-depth qualitative fieldwork. The pilot found that mixed-mode delivery was acceptable to practitioners, gaining positive feedback, and that attrition from the intervention was low, particularly at the setting level. The key barriers to implementation mostly applied to the online sessions, and included low confidence with technology, technical issues, and external distractions. In most cases, these barriers were overcome through preparation in advance of sessions and ultimately did not lead to attrition. The findings from this pilot evaluation were used to inform improvements to the Hanen LLLI programme for the efficacy trial. Findings were also used to consider the sustainability and scalability of mixed-mode delivery of Hanen LLLI training.

**Integrated evaluation design**

*Impact evaluation*

The evaluation of Hanen LLLI was designed as a two-arm cluster RCT, with settings as the unit of randomisation and pupils as the unit of analysis. In total, 167 settings were initially recruited and randomised to either treatment or control conditions. However, 27 settings withdrew before sharing any pupil information, thus no baseline was conducted in those settings. Therefore, 140 settings went on to participate in baseline data collection. Settings were randomised within regions and by setting type (maintained versus PVI settings). This meant that within each region-setting type strata, settings had a 50:50 chance of being assigned to receive Hanen LLLI. The primary outcome of interest was receptive language ability, measured using the British Picture Vocabulary Scale, Third Edition (BPVS-3). The same outcome was also used as a measure of baseline attainment. There were two secondary outcomes for the trial: expressive language; and socio-emotional development. Expressive language was measured using the Renfrew Action Picture Test, Fifth Edition (RAPT), and socio-emotional development was measured using the Strengths and Difficulties Questionnaire-Teacher version (SDQ-T).

[2] Information about the pilot can be found on the pilot project page available at: https://educationendowmentfoundation.org.uk/projects-and-evaluation/projects/learning-language-and-loving-it-the-hanen-program-for-early-childhood-educators?utm_source=/projects-and-evaluation/projects/learning-language-and-loving-it-the-hanen-program-for-early-childhood-educators&utm_medium=search&utm_campaign=site_search&search_term=learning%20language%20and

*IPE*

The IPE was designed to be complementary to the impact evaluation, assisting in contextualising and improving our understanding of the impact (or lack thereof) of the programme. Analysis of the two strands (the IPE and the impact evaluation) was carried out independently of each other in order to avoid one set of findings influencing analysis or interpretation of the other. We sought to provide explanations for the impact evaluation research questions by collecting data on the different components of the logic model through the IPE activities, and by probing participants why and how perceived changes were observed.

The IPE design was adapted to incorporate lessons learned from Hanen LLLI 1. This included:

- **covering two additional outcomes** in the interviews and survey with practitioners (change to practice and children's social and emotional development);
- **capturing the perceived outcomes** of the programme on children with language delay via the interviews and survey with practitioners;
- **administering a survey of staff who did not attend training** to find out more about cascading of learning about the programme;
- **reviewing videos at baseline and endline** to assess changes in the practices of staff who have taken part in Hanen LLLI and those who have not taken part; and
- **conducting paired interviews** with the Program Leaders.

## Intervention

Hanen LLLI is a training programme for EY practitioners to promote social, language, and literacy learning in nurseries. It is a CPD programme designed to provide staff with practical strategies to enhance children's communication and language skills through specialised ways of interacting and communicating with children during normal daily routines. Hanen LLLI was developed by The Hanen Centre in Canada and has not been widely used in the UK.

**Intervention delivery**

In this evaluation, the intervention is coordinated and delivered by Communicate SLT CIC, a Community Interest Company (CIC), which provides speech and language therapy services based in the North-West of England. Communicate SLT CIC are Hanen-certified trainers for some of the Hanen programmes but are otherwise not affiliated in any way with The Hanen Centre.

The trial took place in three Regional School Commissioner areas: The North (covering Cumbria, the North-East and North Yorkshire), East Midlands and the Humber, and the West Midlands.

A key change from Hanen LLLI 1 is that the current trial takes place in both school-based maintained settings and settings from the PVI sector. This addition is motivated by the fact that many children from disadvantaged backgrounds receive EY education in PVI settings, but the available evidence base for this sector has typically been weaker in comparison to maintained nurseries.

**Mode of delivery**

Delivery of Hanen LLLI is scheduled across 31 weeks. This includes an initial information event for settings: one introductory workshop for practitioners to explain the intervention and evaluation; eight training workshops for practitioners lasting two and a half hours each; six individual video feedback sessions lasting 30 to 40 minutes; and one baseline visit and one post-programme visit per setting, carried out in person. Following the disruption caused by Covid-19, this intervention was adapted to include both in person and online delivery. The most recent pilot evaluation, which was completed in September 2022 informed, which activities were delivered in person and, which online. In this trial, Workshops 1, 2, 5, 6, and 8 were completed in person, while all video feedback sessions took place online.

**Hanen LLLI workshops**

The Hanen LLLI training workshops took place at venues such as hotels or conference centres across 12 geographical areas (see 'Dosage' section below) and online. Each workshop (in person and online) was co-delivered by two qualified and Hanen-certified trainers who were either speech and language therapists (SLTs) or EY consultants (EYCs). These

SLTs and EYCs, known as Program Leaders, are fully qualified in the UK and are certified LLLI trainers accredited to deliver the Hanen LLLI programme. The recommended number of nursery staff (e.g. teachers and teaching assistants) per group was 10–20 for in-person delivery and up to 25 for online delivery.

Informal cascading of learning from Hanen-trained nursery staff to non-trained staff in the nursery was devised by the delivery team at Communicate SLT CIC, in collaboration with NatCen and the EEF. Nursery staff were expected to convey the Hanen strategies to other staff members through sharing of learning in their own nursery settings.

**Video feedback sessions**
The individual video feedback sessions were also led by the Program Leaders and took place online. These sessions were conducted with Hanen-trained nursery staff. Guidance recommends that Program Leaders film a five- to eight-minute video of the participant interacting with children in their nursery and deliver feedback immediately or shortly after filming. This guidance assumed that the feedback sessions would be in person, while for this programme the feedback sessions were moved online following recommendations from the pilot evaluation. Therefore, an expected adaptation was that nursery staff recorded their own interactions and sent these to the Program Leader prior to receiving feedback via video call. The sessions focused on guided reflection, with Program Leaders providing feedback on the interactions between nursery staff and children. There were six individual video feedback sessions for each Hanen-trained nursery staff member, lasting 45 minutes each.

Workshop and video feedback session activities were prescribed by The Hanen Centre through slideshow presentations, the nursery staff handbook (which included suggested scripts), and nursery staff handouts (physical and digital). Non-specified adaptations of the course, training materials, and handouts were discouraged. Program Leaders could use some professional judgement to ensure that the content would best fit the needs of the attendees, for example, varying the type and age of children shown in examples and how to ensure good group dynamics in larger or smaller sized groups. Minor accepted deviations were detailed in the course handbook for Program Leaders. These covered, for instance, changes to workshop activities according to time constraints (see section below on ‘Adherence and adaptation').

**Mandatory and optional sessions**
Communicate SLT CIC gathered attendance data for mandatory and optional sessions, which are summarised in Table 3. Mandatory sessions for nursery staff participating from the start of delivery included:

- one introductory workshop;
- eight workshops; and
- six video feedback sessions.

Mandatory sessions for settings included:

- one pre-programme setting visit; and
- one post-programme setting visit.

Optional activities for settings were:

- initial information session for settings;
- one pre-intervention baseline video;
- one post-intervention endline video; and
- two drop-in cascading support sessions.

Workshops 1, 2, and 5 were considered ‘essential’ (i.e. if an essential workshop was missed then they would not receive the certificate even if they met the other minimum requirements). While the terms ‘mandatory’ and ‘optional’ are used to describe the workshops, if a participant missed up to two of the non-essential mandatory workshops and attended at least four video feedback sessions, they could still meet the requirements to receive an end of programme certificate.

Attendance of these sessions is discussed later (see section on 'Reach' below). Pre- and post-programme setting visits were mandatory at the setting level and have not been included in the list below. Cascading and drop-in support sessions were not included in this list or the attendance assessment for 'reach' as they were more *ad hoc* than core manualised elements of Hanen LLLI.

*Table 3: Mandatory and optional activities per participant type*

| Activity | Nursery staff who participated from the start |
|---|---|
| Introductory workshop | Mandatory |
| Pre-intervention video | Optional |
| Workshop 1 | Mandatory (essential) |
| Workshop 2 | Mandatory (essential) |
| Workshop 3 | Mandatory |
| Workshop 4 | Mandatory |
| Workshop 5 | Mandatory (essential) |
| Workshop 6 | Mandatory |
| Workshop 7 | Mandatory |
| Workshop 8 | Mandatory |
| Video feedback session 1 | Mandatory |
| Video feedback session 2 | Mandatory |
| Video feedback session 3 | Mandatory |
| Video feedback session 4 | Mandatory |
| Video feedback session 5 | Mandatory |
| Video feedback session 6 | Mandatory |
| Post-intervention video | Optional |

**Intervention content**
Program Leaders are expected to help facilitate the four broad aims of Hanen LLLI:

- **Education:** provide practitioners with information on language, social, and literacy development and on how best to promote these during everyday play activities, conversations, and daily routines.
- **Application:** provide practitioners with opportunities to practice and apply strategies and approaches, which promote children's development, with feedback from the Hanen LLLI Program Leader.
- **Collaboration:** work together with practitioners as they plan and implement individual programmes for children with specific needs.
- **Peer support:** give practitioners the opportunity to share ideas, issues, and concerns with their colleagues.

The structure of each workshop followed a '4P (Prepare, Present, Practice, Personalise)' teaching cycle. Program Leaders were instructed to follow the structure while delivering training.

1. Prepare: give practitioners a reason for learning by starting with asking them to think about what a particular topic means to them in order to tap into personal experience and interest.
2. Present: give facts and information to deepen or expand knowledge in ways that are interesting, interactive, relevant, and enjoyable.

3. Practice: create opportunities for practitioners to practice newly learned skills in a variety of hands-on ways with guidance and feedback.
4. Personalise: provide opportunities for practitioners to apply and integrate information into their own situation and to generalise into a variety of situations.

During the programme, practitioners learn practical strategies for engaging with children to enhance their language development, including, for example:

- 'OWLing': observing, waiting, and listening, rather than asking questions;
- using a variety of words and modelling extended language;
- providing opportunities for children to initiate conversation;
- engaging 'reluctant' children in small groups; and
- tailoring language and approach to match children's styles and skills.

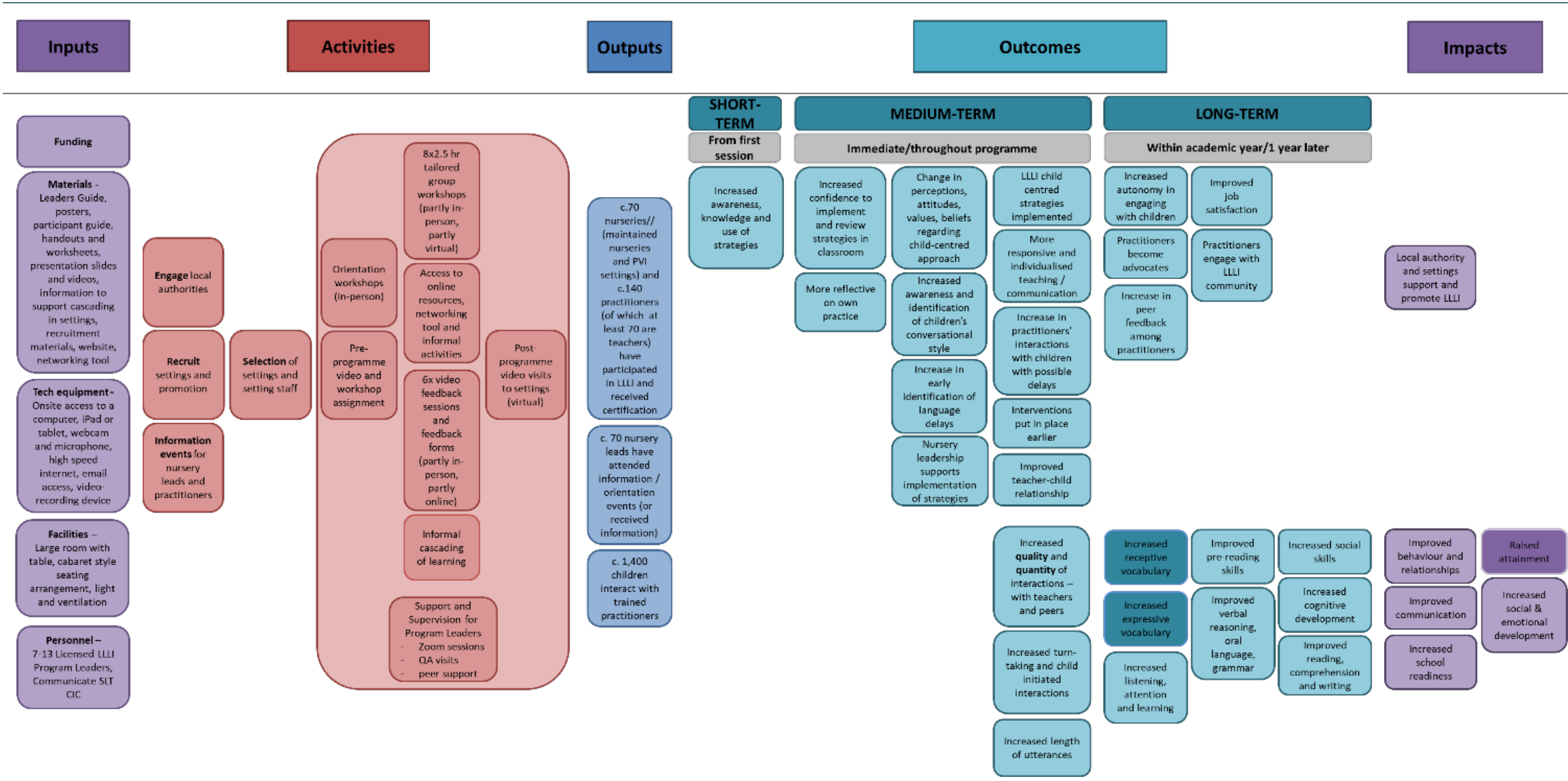
*Table 4: Overview of workshops*

| Workshop | Topics covered in session | Details of adaptation |
|---|---|---|
| 1 | **Take a closer look at communication:** roles teachers play, conversational styles, and stages of language development | – |
| 2 | **Follow the child's lead:** OWL (Observe, Wait, Listen), be face to face, comment, imitate, interpret, and join in and play | – |
| 3 | **Taking turns together:** give a reason to communicate and wait, supporting turns in conversations, make social routines part of your day, and use comments and questions to cue turns | Delivered online |
| 4 | **Encourage interaction in group situations:** interact with every child in the group and SSCAN (Small groups are best, Set up an appropriate activity, Carefully observe each child's level of participation and interaction, Adapt your response to each child's needs, Now keep it going!) | Delivered online |
| 5 | **Provide information that promotes language learning:** make your language easy to understand, add new words, and expand what the child says | – |
| 6 | **Let language lead the way to literacy:** how language and literacy are connected, make book reading a time for interaction and conversation, add information during book reading, and extend the topic during the day | – |
| 7 | **Foster peer interaction:** why peer interaction is different, observing peers at play, set up the environment to encourage peer interaction, make good use of space, plan appropriate groupings and activities, and support interaction with peers | Delivered online |
| 8 | **Wrap-up:** final video session action planning and reviewing Hanen LLLI strategies | – |

## Intervention logic model

The Hanen LLLI logic model (see Figure 1) was designed in conjunction with Communicate SLT CIC in March 2022. The logic model was adapted from the logic model used in Hanen LLLI 1 with some wording of the outcomes refined and the activities updated to reflect delivery for the trial intervention. The logic model outlines the sequence of activities implemented by Program Leaders, nursery staff, and settings. It sets out the intended impacts of the programme for local areas, settings, and children; and the short- and medium-term outcomes for nursery staff, settings, and children that are expected to lead to these impacts.

*Figure 1: Hanen LLLI logic model*



## Evaluation objectives

The impact evaluation was designed to be conducted as a two-arm cluster (setting level) RCT of the effect of Hanen LLLI on the language attainment of three- to four-year-olds in nursery settings. The evaluation protocol and statistical analysis plan are published on the EEF's website (EEF, 2023a; EEF, 2023b).[3]

The impact evaluation of Hanen LLLI aimed to answer the following five research questions:

1. To what extent did Hanen LLLI lead to changes in children's receptive language outcome as measured by the BPVS-3? (Primary outcome).
2. To what extent did Hanen LLLI lead to changes in children's expressive language outcome as measured by the RAPT? (Secondary outcome).
3. To what extent did Hanen LLLI lead to changes in children's behavioural outcome as measured by the SDQ-T? (Secondary outcome).
4. To what extent did Hanen LLLI lead to changes in receptive language as measured by the BPVS-3 for children who are entitled to EYPP? (Subgroup analysis).
5. To what extent did Hanen LLLI lead to changes in receptive language for lower and higher ability pupils based on the BPVS-3? (Subgroup analysis).

The IPE aimed to answer the following five research questions:

1. How is Hanen LLLI delivered, and what are the facilitators and barriers to delivery in maintained nurseries and PVIs?
2. What are the perceived benefits of Hanen LLLI for EY staff, nurseries, and children?
3. Is there evidence that Hanen LLLI leads to changes in staff practice? How can we better support staff, and assist towards an effective cascading of knowledge?
4. What can be learned for future delivery of Hanen LLLI?
5. What is the cost per pupil to nurseries to deliver Hanen LLLI?

The key dimensions of implementation that were assessed are: fidelity (including dosage, quality, and adaptation), reach, responsiveness, and usual practice (programme differentiation and monitoring and control).

## Ethics and trial registration

Ethical approval for this study was obtained from NatCen's Research Ethics Committee in February 2022, which reviewed the study design to confirm compliance with internal ethical standards.

The trial was registered with the International Standard Randomised Controlled Trial Number (ISRCTN) in spring 2022.

## Data protection

NatCen obtained personal data from settings and pupils at baseline and obtained pupil outcome data at endline as a data controller and data processor. Setting and pupil-level information was collected and processed on the 'legitimate interest' basis. NatCen processed the data for the legitimate purpose of conducting the evaluation of Hanen LLLI. No special category data was collected as part of the evaluation. Setting staff and pupil parents were provided with accessible information leaflets and privacy notices that explained the use, storage, and secure handling of the data. Consent was obtained on an opt-out basis, namely, participants had an option to withdraw themselves or their child from the study. Parents and staff received a hardcopy or e-version of the relevant privacy notice, and the same is available on the study website. Participants taking part in IPE activities (interviews, observations, surveys) were asked to 'opt in' and were reminded that participation was voluntary.

[3] Available at: https://educationendowmentfoundation.org.uk/projects-and-evaluation/projects/learning-language-and-loving-it-accelerator-fund?utm_source=/projects-and-evaluation/projects/learning-language-and-loving-it-accelerator-fund&utm_medium=search&utm_campaign=site_search&search_term=hanen

NatCen stored and handled all data securely and confidentially in line with the General Data Protection Regulation. Only the research team and approved third parties listed in the privacy statement (e.g. transcription agency, SLTs conducting testing) had access to the data collected as part of the evaluation. Reports and other publications arising from this research will not identify any individual setting, staff member, or pupil. Settings or individual staff who no longer wish to take part in the evaluation can request to have their data deleted at any point prior to the submission of the draft report and before data archiving takes place.

Data sharing between NatCen and Communicate SLT CIC is governed by a data sharing agreement covering the pilot and trial. The data shared between Communicate SLT CIC and NatCen includes contact details and information on nursery settings recruited for the pilot and trial, staff taking part in Hanen LLLI training, and staff attendance; as well as pre-intervention and post-intervention scores from one staff member per participating setting. Only data necessary for the evaluation is being shared.

For the purpose of research and archiving, NatCen will share data from the impact evaluation with the Department for Education, the EEF's archive manager, the Office for National Statistics (ONS), and potentially other research teams. At the end of the research project, this data will be submitted to the ONS, Secure Research Service (SRS) in the EEF data archive (this is managed by FFT Education). This will include data only identifiable to the Department for Education and no information will be archived that could be used to directly identify individual pupils. Further matching to the National Pupil Database (NPD) and other administrative data may take place during later research. All data will be securely deleted from NatCen's network one year after the end of the project.

## Project team

Hanen LLLI was delivered by Communicate SLT CIC, a licensed Hanen provider. Table 5 lists the different people involved in delivering the intervention and their roles.

*Table 5: Project team*

| Names | Project role | Role and/or institution |
|---|---|---|
| Caroline Coyne | Delivery lead | Chief Executive Officer and founder, Communicate SLT CIC |
| Helen Laycock | Project manager | Project manager, Communicate SLT CIC |
| Rhian Owen | Trial supervisor and programme lead | Hanen LLLI 2022–2023 trial supervisor, Communicate SLT CIC |
| Verity Bell | Project management support | Operations lead, Communicate SLT CIC |
| Adele Banton | Program Leader | Communicate SLT CIC |
| Vicki Maughan | Program Leader | Communicate SLT CIC |
| Kathryn Burkmar | Program Leader | Communicate SLT CIC |
| Alex Sharp | Program Leader | Communicate SLT CIC |
| Dave McDonald | Program Leader | Communicate SLT CIC |
| Bibiana Wigley | Program Leader | Communicate SLT CIC |
| Sally Wiseman | Program Leader | Communicate SLT CIC |

The evaluation was delivered by NatCen's Centre for Children and Families and Centre for Evaluation; the staff involved (including roles) are shown in Table 6.

The evaluation team also benefited from the guidance by: Dr Gayle Munro, Director of the Centre for Children and Families; Dr Andi Fugard, Co-Director of the Centre for Evaluation; and Dr Tina Haux, former Director of the Centre for Children and Families (until August 2023).

*Table 6: Evaluation team*

| Names | Project role | Role and institution |
|---|---|---|
| Mary McKaskill | Principal investigator, IPE lead | Research director, NatCen |
| Georges Poquillon | Impact evaluation lead | Research director, NatCen |
| Miranda Phillips | Senior oversight, final report | Research director, NatCen |
| Sehaj Bhatti | Project management – overall and IPE | Senior researcher, NatCen |
| Natasha Phillips | Project support - IPE | Senior researcher, NatCen |
| Julia Ruddick-Trentmann | Project support – IPE | Researcher, NatCen |
| Charlotte Lilley | Project support – IPE | Researcher, NatCen |
| Rebecca Parker | Project support – impact evaluation | Researcher, NatCen |
| Hannah Morgan | Project management – impact evaluation | Senior researcher, NatCen |
| Molly Scott | Project support – impact evaluation | Senior researcher, NatCen |
| Dr Jonah Bury | Principal investigator and IPE lead until June 2023 | Research director, NatCen until June 2023 |
| Dr Enes Duysak | Impact evaluation lead until June 2023 | Research director, NatCen |

# Methods

## Trial design

The impact evaluation was designed as a stratified, two-arm cluster RCT, with settings as the unit of randomisation and pupils as the unit of analysis. The randomisation was stratified by region and setting type (maintained versus PVI), to help ensure that settings from the same region, or with a similar type of provision, were evenly allocated to the treatment and control groups. Table 7 summarises the design of the cluster RCT.

Settings allocated to the treatment group were offered the chance to take part in Hanen LLLI activities throughout the 2022/2023 academic year. These settings received the Hanen LLLI programme for free and they did not receive any monetary incentives.[4] Settings assigned to the control condition implemented their usual approach to language teaching. As an incentive for participation in data collection activities, control settings received two payments: a payment of £100 for completion of baseline testing in November 2022; and a payment of £900 in August 2023 for completion of endline testing and for completing and sending videos to monitor changes in staff's practice. The incentive was intended to mitigate the risk that settings would engage with the baseline data collection activities when approached about the trial but would choose not to participate in further activities once assigned to the control group.

The outcome measures selected for the evaluation were age-appropriate, fit well with the Hanen LLLI logic model, and were selected in collaboration with the delivery team. The primary outcome of interest was receptive language as measured by the age-standardised BPVS-3. The first secondary outcome measure provided a further measure of expressive language, as measured by the RAPT. In addition to language, the evaluation also assessed differences in socio-emotional behaviour using the SDQ-T.

*Table 7: Trial design*

| | | |
|---|---|---|
| Trial design, including number of arms | | Two-arm cluster RCT |
| Unit of randomisation | | EY settings |
| Stratification variable (s) (if applicable) | | Geographic region |
| Primary outcome | Variable | Receptive language |
| | Measure (instrument, scale, source) | Receptive language measured with the BPVS-3, age-standardised score (85–115)[5], GL Assessment |
| Secondary outcome(s) | Variable(s) | 1. Expressive language<br>2. Socio-emotional behaviour |
| | Measure(s) (instrument, scale, source) | 1. RAPT, Routledge (RAPT) information and grammar, raw score (0–41 information; and 0–39 grammar), Routledge<br>2. SDQ-T, 0–40, Goodman (1998; 2001) |
| Baseline for primary outcome | Variable | Receptive language |
| | Measure (instrument, scale, source) | 1. BPVS-3 age-standardised score, 85–115, GL Assessment |
| Baseline for secondary outcome(s) | Variable | 1. Expressive language<br>2. Socio-emotional behaviour |
| | Measure (instrument, scale, source) | 1. BPVS-3 age-standardised score, 85–115, GL Assessment<br>2. Not applicable (post-test only) |

[4] Settings received a payment of 75% of their cover cost to provide for staff cover while practitioners attended the training.
[5] The age-expected range of standardised BPVS-3 scores is 85–115. The full possible range of scores is 69–141.

## Participant selection

Both maintained settings and settings from the PVI sector were recruited from across the three Regional School Commissioner areas according to the following eligibility criteria:

1. Settings were recommended to sign up two-thirds of staff working with three- to four-year-olds to take part in Hanen LLLI. At a minimum, at least 50% of eligible practitioners at each setting (including a teacher or senior member of staff) should be able to participate.
2. No more than 50% of practitioners in a setting should have previously participated in a similar Hanen intervention called 'Teacher Talk' and none should have previously participated in Hanen LLLI.[6]
3. Settings should have ideally had at least 15 registered three- to four-year-olds to be included in the trial sample. However, we also considered settings with a minimum of 12 three- to four-year-olds for inclusion to make sure that smaller settings (e.g. those in rural areas) were represented in the trial.

The minimum requirement on the number of three- to four-year-olds per setting was designed to ensure that the trial included enough pupils to attain the desired level of statistical power. We carried out assessments with up to 17 pupils per setting. If settings had fewer than 17 pupils, we aimed to collect assessment data from all pupils. If settings had more than 17 pupils, we randomly selected 17 pupils for baseline assessments. We also randomly selected an additional three pupils (or up to three, depending on the size of the setting), to act as replacements for any sampled pupils who were absent during the baseline testing. We carried out the endline assessments with the same pupils who completed the assessments at baseline. We asked participating settings to enumerate all three- to four-year-olds, excluding those whose parent or caregiver had withdrawn them from the evaluation. This was to serve three purposes: (1) to facilitate the random selection of 17 pupils for baseline assessment; (2) to facilitate longer term linkage of pupil assessment data with the NPD; and (3) to gather information on EYPP status for the purpose of subgroup analysis.

Communicate SLT CIC led on the recruitment of eligible nurseries between February 2022 and July 2022 resulting in 167 settings recruited and returning a signed Memorandum of Understanding (MoU). NatCen supported this process by helping confirm the eligibility criteria and developing information sheets to communicate details about what the trial participation would involve. The research team invited all participating settings to complete an MoU in Summer Term 2022. This indicated institutional consent to be involved in the study. A research information sheet and privacy notice were supplied by NatCen explaining that settings' access to the programme would be allocated at random and that participation in the evaluation would involve the collection and processing of children's personal data. At the beginning of Autumn Term 2023, participating settings were required to inform parents/carers of all eligible three- to four-year-olds about their setting's participation in the trial by letter. Parents/carers were given the opportunity to withdraw their child from the evaluation by contacting their child's setting or the NatCen evaluation team. Settings were also asked to identify, which staff would take part in the programme and to carry out the pupil enumeration described above. A total of 143 of the 167 recruited settings returned the necessary pupil information making them eligible for baseline testing. A further three settings withdrew after returning the pupil information, but did not complete baseline testing, meaning the total number of settings completing baseline testing was 140. These withdrawals from the trial took place before the actual treatment allocation was revealed.

## Outcome measures

**Primary outcome**

The primary outcome of interest was receptive language ability, measured using BPVS-3. The same outcome was also used as a measure of baseline attainment. BPVS-3 is an individually administered, norm-referenced, test of receptive vocabulary for standard English. This test is suitable for children with learning and communication difficulties. A child's receptive vocabulary is tested by asking children to identify pictures that illustrate a given word's meaning. The BPVS-3 was collected at baseline in October 2022 and at endline towards the end of Summer Term 2023. The evaluation team provided training to the SLTs carrying out the testing to ensure that data collection practice was standardised across the settings and provided information to setting staff members about what to expect on testing day and how to ensure that optimal conditions were in place. At baseline and endline, all assessments were carried out by SLTs. SLTs were not informed of the settings' treatment allocation.

[6] Some UK settings may have taken part in the previous trial that was stopped due to Covid-19. These settings were not included in the re-trial.

The primary outcome was the BPVS-3 age-standardised score, to compare children's language ability against a large nationally representative sample of children of similar age. The BPVS-3 score is standardised to a mean of 100 and a standard deviation (SD) of 15. Conversion tables used to standardise the raw BPVS-3 scores are available in the BPVS-3 manual (Dunn *et al.*, 2009).

**Secondary outcomes**
There were two secondary outcomes for this trial: expressive and receptive language; and socio-emotional development.

*Expressive and receptive language*
The RAPT was collected at endline as a secondary measure of receptive and expressive language. The RAPT comprises ten pictures depicting various scenarios. Children's expressive language is tested by asking children to describe the pictures that they are shown. Children's answers are recorded and then scored according to two separate perspectives: information; and grammar. The raw score for information ranges from 0 to 41, while the raw score for grammar ranges from 0 to 39. We used the raw RAPT scores because the test had been standardised only on children who speak English as a first language. The RAPT manual (Renfrew, 2020: p. 49) advises that the norms are not applicable for children who speak English as an Additional Language (EAL) or are English language learners and therefore, standard scores should not be quoted as these will be misleading. The RAPT was collected by SLTs at endline.

*Socio-emotional development*
The trial also administered the Teacher version of the SDQ (SDQ-T) at endline, in order to measure the SDQ Total Difficulties Score (TDS) (Goodman, 2001), as an additional secondary outcome. The SDQ-T is a brief emotional and behavioural screening measure that comprises 25 items. The questionnaire is divided into five subscales that measure: emotional symptoms; conduct problems; hyperactivity/inattention; peer relationship problems; and prosocial behaviour. Each subscale includes five questions. The TDS is the sum of all subscale scores, except the prosocial behaviour subscale, and ranges from 0 to 40. In order to obtain accurate measures, the assessment was collected by setting staff that knew the children well.

## Sample size

**Minimum detectable effect size (MDES) calculations and estimation of intra-cluster correlations (ICCs)**
At protocol stage, after accounting for expected attrition at both the setting and pupil level, we assumed a high pupil-level correlation between baseline and follow-up (0.60) and moderate setting-level correlation (0.36).[7] Our power calculations were informed by Hanen LLLI 1. We used a Type I error rate of 0.05 and a Type II error rate of 0.20 (power of 0.80). We conducted these power calculations using the *PowerUp!* tool (Dong and Maynard, 2013).

At protocol stage, we aimed to recruit 165 settings to the trial, with half randomly allocated to the treatment condition (in which nurseries receive the Hanen LLLI intervention) and the other half randomly allocated to the 'business as usual' control condition. We agreed with Communicate SLT CIC that most of the recruited settings would be maintained nurseries (between 60% and 70%). We expected the remaining recruited settings to be PVIs (i.e. 30% to 40%).

Within each setting we also aimed to sample up to 17 pupils to complete assessments. However, given that pupil-level attrition was likely to arise, combined with the fact that there may be fewer than 17 eligible pupils in some settings (a minimum of 12 eligible pupils was required for a setting to take part), we anticipated the average number of pupils across settings to be lower than 17 at endline. Given our expectations about attrition, the MDES presented in Table 8 are based on the assumption that 132 settings would remain in the trial at endline (representing roughly 20% attrition across the same recruited settings), with an average of 15 pupils per setting (accounting for 12% attrition at the pupil level). Under these assumptions an MDES of 0.217 would be achieved.

There is limited information available about likely ICC in EY settings. However, at the protocol stage we based our assumption of 0.185 on what we found in the baseline data collected for Hanen LLLI 1.

[7] Power calculations use variance explained by covariates ($R^2$) as opposed to pre-test/post-test correlations. We approximate the pre-test/post-correlations by taking the square root of $R^2$.

In total, 167 settings were recruited to the trial by returning a signed MoU by August 2022; 66% of these were maintained settings and 34% were PVI settings. Of these 167 recruited settings, 140 settings completed the pupil enumeration and baseline assessments. The randomisation outcome was communicated to settings after baseline assessment had been completed. Therefore, the 27 settings, which did not complete the pupil enumeration at baseline, withdrew without knowing which group they were assigned to. Since no baseline was conducted in those 27 settings, they are considered as having withdrawn before the beginning of the study and are excluded from the sample from which attrition is computed (note that pupil-level attrition cannot be measured in those settings because of the lack of pupil enumeration). Although we planned to carry out assessments with up to 17 pupils per setting (with up to three replacement pupils also identified in case of absence), in 15 settings we found that more than 17 pupils were assessed. In such cases, the full sample of pupils assessed was retained, to avoid discarding data already collected.

*Table 8: MDES at different stages*

| | | Protocol | | Randomisation | | Analysis | |
|---|---|---|---|---|---|---|---|
| | | Overall | EYPP | Overall | EYPP | Overall | EYPP |
| MDES | | 0.217 | 0.322 | 0.206 | 0.307 | 0.210 | 0.287 |
| Pre-test/ post-test correlations | Level 1 (pupil) | 0.60 | 0.60 | 0.60 | 0.60 | 0.76 | 0.76 |
| | Level 2 (setting) | 0.36 | 0.36 | 0.36 | 0.36 | -0.04 | -0.15 |
| ICCs | Level 2 (setting) | 0.185 | 0.185 | 0.171 | 0.171 | 0.165 | 0.101 |
| Alpha | | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
| Power | | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| One-sided or two-sided? | | 2 | 2 | 2 | 2 | 2 | 2 |
| Average cluster size | | 15 | 2 | 14 | 2 | 13 | 4 |
| Number of schools | Treatment | 66 | 66 | 72 | 72 | 70 | 42 |
| | Control | 66 | 66 | 68 | 68 | 68 | 38 |
| | Total | 132 | 132 | 140 | 140 | 138 | 80[8] |
| Number of pupils | Treatment | 990 | 132 | 1,104 | 144 | 944 | 136 |
| | Control | 990 | 132 | 995 | 138 | 886 | 151 |
| | Total | 1,980 | 264 | 2,099 | 282 | 1,830 | 287 |

[8] In 80 settings out of the 140 settings, at least one pupil was eligible for EYPP. In 60 settings out of the 140 settings, no pupils were eligible for EYPP.

The calculations used the same assumptions as those conducted in the evaluation protocol: we assumed a high pupil-level correlation between baseline and follow-up (0.60) and moderate setting-level correlation (0.36). We used a Type I error rate of 0.05 and a Type II error rate of 0.20 (i.e. power of 0.80).

Using these updated assumptions, we find that the number of settings and pupils that had completed baseline assessment would yield an MDES of 0.206 for the primary analysis, and an MDES of 0.307 for the subgroup analysis by EYPP status. The MDES of 0.206 is marginally better than our initial expectation and is closer to the threshold required for the trial to receive a '5-padlocks' security rating. This indicates that the trial met the MDES assumptions outlined in the protocol, even if there was further attrition by the time of the endline data collection.

At the randomisation stage, an ICC of 0.171 was used, based on the baseline assessment data. This was slightly more favourable than the ICC of 0.185 used in the protocol calculations (which were themselves based on the 2019 baseline data collected), so improved the expected MDES.

At the analysis stage, the power calculations were updated using the final number of pupils included in the endline primary analysis (n=1,830) to allow comparison between the number of pupils included in the study at randomisation (n=2,099). We also used the updated Level 1 and 2 pre-test/post-test correlations ($R^2$ value was used to input into the *PowerUp!* Tool; Dong and Maynard, 2013). We also updated the ICC based on the endline analysis. The overall MDES at endline is 0.210.

## Randomisation

Randomisation of settings was carried out by a member of the NatCen evaluation team in August 2022, in Stata version 17 (StataCorp LLC, College Station, TX, USA). The researcher carrying out randomisation was blinded to the setting identity at the time of carrying out the randomisation. This means that identifiers such as setting names and Unique Reference Numbers (URNs) were removed at the time of randomisation, and later linked back to cases. The randomisation was stratified by region and setting type (maintained versus PVI), to help ensure that settings from the same region, or with a similar type of provision, were evenly allocated to the treatment and control groups. The *randtreat* command was used in Stata to perform randomisation, using the *misfits(global)* option. Altogether, 167 settings were randomised: 84 were assigned to the treatment group; and 83 to the control group (Table 9). The number of settings varied across strata, from nine PVI settings in the North of England, to 56 school-maintained settings in the West Midlands. The randomisation produced an equal allocation to the treatment and control groups within each stratum, with the exception of PVIs in the North of England where there was an odd number of settings within the stratum. Table 9 shows the distribution of settings randomised to the treatment and control groups across the three regions.

*Table 9: Number of settings allocated to treatment and control groups across the region*

| | Number of settings | | |
|---|---|---|---|
| Region | Treatment | Control | Total |
| East Midlands (and The Humber) | 27 | 27 | 54 |
| North of England | 18 | 19 | 37 |
| West Midlands | 38 | 28 | 76 |
| Total | 84 | 83 | 167 |

## Statistical analysis

The outcome analysis was undertaken on an intention-to-treat (ITT) basis; that is, all settings were analysed as per their original random allocation to either Hanen LLLI (treatment group) or 'business as usual' (control group).

**Primary analysis**
The primary outcome analysis aims to address research question 1: *To what extent did Hanen LLLI lead to changes in children's receptive language outcome as measured by the BPVS-3?*

The model is a two-level linear regression, with pupils at level one and settings at level two. We used a multilevel model to account for the fact that the trial is designed as a cluster RCT, with pupils clustered within settings. The BPVS-3 standardised score at follow-up is the dependent variable, with a binary indicator of treatment allocation, baseline BPVS-3 score, and geographic region-setting type (the randomisation strata) fixed-effects included as independent variables. Setting-level random effects are included in the model by allowing the intercept to vary by setting. This consists of the following model:

$$(1)\ BPVS_{ij} = \beta_0 + \beta_1 Intervention_j + \beta_2 Stratum + \beta_3 Baseline\_BPVS_{ij} + u_j + e_{ij}$$

Where pupils ($i$) are nested within settings ($j$). The treatment effect is estimated by $\beta_1$, while $u_j$ represents the setting random effect and $e_{ij}$ represents the individual error term. In line with the EEF guidance (EEF, 2022) no other covariates than stratification blocks ($Stratum$) and baseline outcome ($Baseline\_BPVS$) are included. The target parameter that indicates the average effect of Hanen LLLI on children in treatment settings compared to those in control settings is $\beta_1$. The model was estimated in Stata 17 using the *mixed* command.

**Secondary analysis**

The secondary outcome analysis aimed to address research questions 2 and 3: *To what extent did Hanen LLLI lead to changes in children's expressive language outcome as measured by the RAPT?* and *To what extent did Hanen LLLI lead to changes in children's behavioural outcome as measured by the SDQ TDS?*

The model is a multilevel linear regression model with pupils nested within settings. Each secondary outcome was measured at endline and is regressed on a binary indicator of intervention allocation and stratum fixed-effects. Setting-level random effects are included to account for the variance at setting level. In the case of the RAPT analysis, we include baseline BPVS-3 scores as an additional covariate. This is because we do not have a baseline measure for the RAPT; however, it is expected that baseline BPVS-3 scores would have a predictive power for the RAPT at endline. Using a different baseline measure of attainment may have lowered the pre-test/post-test correlations, reducing the power of the secondary analysis. We omit this covariate from the SDQ TDS outcome model, as although BPVS-3 explains a small proportion of variance (around 5%) in SDQ TDS,[9] it is a conceptually different measure. This consisted of the following models:

$$(2)\ RAPT_{ij} = \beta_0 + \beta_1 Intervention_j + \beta_2 Stratum + \beta_3 Baseline\_BPVS_{ij} + u_j + e_{ij}$$

$$(3)\ SDQ\ TDS_{ij} = \beta_0 + \beta_1 Intervention_j + \beta_3 Stratum + u_j + e_{ij}$$

**Analysis in the presence of non-compliance**

A binary measure was constructed at the setting level to show whether the setting was compliant or not. This variable was constructed based on settings who fulfilled all criteria (item 1 through 5) in Table 10.

*Table 10: Compliance criteria*

| Number | Compliance criterion | Data source | Compliance indicator |
|---|---|---|---|
| 1 | Attendance at information event | MoU summary template recording attendance | At least one member of staff attends |
| 2 | Attendance at introductory workshop | Attendance register | At least one member of staff per setting attends |
| 3 | Attendance of training workshops | Attendance register | At least one teacher or room lead attends six or more workshops. Workshops 1, 2, and 5 are essential (i.e. if an essential workshop is missed then a setting will not be deemed compliant) |
| 4 | Attendance of video feedback sessions | Attendance register | At least one teacher or room lead attends four or more video feedback sessions |

Based on this compliance measure, five treatment settings were deemed to be non-compliers. In total, 77 pupils took part in data collection at these non-compliant settings.

[9] The correlation between the baseline BPVS-3 score and the endline SDQ TDS in the control group is -0.22.

More details on practitioner attendance at training sessions can be found in the section 'Reach' (in the section on 'IPE results' below).

To recover the treatment effect for those who complied with assignment, we undertook a complier average causal effect (CACE) analysis by drawing on an instrumental variable (IV) approach and using a random effect two-stage least squares (2SLS) estimation using the *xtivreg* command in Stata 17.

The first stage assesses whether the assignment to Hanen LLLI encourages settings to take up the intervention (the first stage regresses compliance on treatment assignment and all other covariates included in equation 1). This provides an estimate of the compliance rate. Results for the first stage will report the correlation between the instrument and the endogenous variable and an F test. The second stage of the IV estimation regresses the primary outcome on the covariates used in the main model and the compliance rate estimated at the first stage in substitution of the intervention allocation indicator ($Intervention$).

**Missing data analysis**
Missing data can arise from attrition of participants at school and/or pupil levels or item non-response. To deal with missing data, the following steps were carried out:

First, we explored the extent of missing data on the outcome and pre-treatment covariates descriptively, with cross-tabulations, including counts and percentages in each category. To better understand the pattern of missing data, we explored the extent of missingness, and whether there was a pattern in missingness. A 'drop-out' model was estimated using a logistic regression to assess if there were any patterns to missing data. The outcome was binary, reflecting whether the primary outcome data and any covariates from the primary analysis were missing for each individual at follow-up. This model included setting-level covariates (setting type, region, and number of pupils enumerated), pupil-level covariates (EYPP eligibility, age in months, and baseline BPVS-3 score), and a random effect for settings. Missing data for these covariates were coded up as separate binary variables for categorical outcomes or were imputed with the variable mean for continuous variables. The 'drop-out' model was estimated using the *melogit* command in Stata 17. We followed the protocol for missing data suggested by the EEF (see EEF, 2022).

For less than 5% missingness overall, from randomisation to final analysis, a complete case analysis was employed. For more than 5% missing data overall, from baseline assessment to final analysis, our approach depended on the pattern of missingness. If the pattern of missingness was unrelated to the treatment effect (e.g. absence due to child illness, staff changes, or other factors that affected testing but are not related to Hanen LLLI), then missing data was assumed to be missing completely at random and we continued with a complete case analysis.

For all outcomes of interest (endline BPVS-3 score, RAPT information and grammar scores, and SDQ TDS), the drop-out model estimation revealed some levels of correlation between data missingness and the baseline BPVS-3 score, suggesting that data may not be missing at random (see details in Appendix D). For those four outcomes, the analysis was re-estimated through multiple imputation by chained equations (MICE). MICE was conducted using the *mi suite* of commands in Stata 17.

**Subgroup analyses**
We conducted two subgroup analyses for this trial. The subgroup analysis was exploratory, as the study was not powered for meaningful subgroup analysis.[10] The analyses address research questions 4 and 5:

*To what extent did Hanen LLLI lead to changes in receptive language as measured by the BPVS-3 for children who are entitled to EYPP?*

The first subgroup analysis assesses whether Hanen LLLI had a differential impact for pupils who were eligible for EYPP in the treatment group compared to pupils eligible for EYPP in the control group. This addresses research question 4. EYPP provides settings with additional funding for all three- to four-year-olds from low-income families. In order to carry out this analysis, we asked settings to provide information about the EYPP status of all participating children as part of the pupil enumeration exercise carried out in September 2022.

[10] We estimated an MDES of 0.307 for the subgroup analysis according to pupils' EYPP eligibility status.

*To what extent did Hanen LLLI lead to changes in receptive language for lower and higher ability pupils based on the BPVS-3?*

The second subgroup analysis examines differential impacts for children with poorer initial language development who were in Hanen LLLI settings and those with poorer language development in control settings. This addresses research question 5, which aims to explore whether Hanen LLLI helps pupils starting from a lower base to 'catch-up' with their peers. We constructed the subgroups for this analysis by identifying pupils scoring in the bottom quartile of the age-standardised BPVS-3 assessment at baseline. We constructed a binary indicator to define low language achievers as those who scored below the threshold.

We carried out both subgroup analyses using a similar approach to the primary analysis. We fit a multilevel linear regression model, with the BPVS-3 standardised score as the dependent variable. This is regressed on a binary indicator of intervention allocation, the subgroup indicator, an interaction term for intervention allocation and the subgroup indicator, stratum, baseline BPVS-3 attainment and a random effect for settings. The subgroup analyses consist of the following models:

$$(4)\ BPVS_{ij} = \beta_0 + \beta_1 Intervention_j + \beta_2 EYPP_{ij} + \beta_3 Intervention_i \times EYPP_{ij} + \beta_4 Stratum + \beta_5 Baseline\_BPVS_{ij} + u_j + e_{ij}$$

$$(5)\ BPVS_{ij} = \beta_0 + \beta_1 Intervention_j + \beta_2 Low\_ability_{ij} + \beta_3 Intervention_j \times Low\_ability_{ij} + \beta_4 Stratum + \beta_5 Baseline\_BPVS_{ij} + u_j + e_{ij}$$

In each model, the interaction term ($\beta_3$) describes the differential impact of Hanen LLLI for each subgroup. For example, in equation 4, $\beta_3$ indicates whether there is a differential impact of Hanen LLLI for pupils eligible for EYPP, and in equation 5, $\beta_3$ shows whether there is a differential impact of Hanen LLLI for pupils with lower initial language development.

An additional model will be estimated taking the same form as the primary analysis model (equation 1), using solely the sample of pupils who are part of each subgroup. That is, the model will be re-estimated for only the sample of pupils eligible for EYPP, or only the sample who were designed as having poorer initial language development at baseline.

**Additional analyses and robustness checks**

While performing the primary analysis, it was observed that the distribution of the age-standardised version of the BPVS-3 score had a high density at the floor value. The BPVS-3 manual recommends assigning a standardised score of 69 for very low scores and 140 for very high scores. Standardised scores outside this range cannot be given with any greater degree of accuracy because too few children in the standardisation sample had very high or very low scores (Dunn *et al.,* 2009). This is particularly the case for the baseline BPVS-3, with a substantive number of pupils scoring below the floor value. In response to this, equation 1 was re-estimated using raw BPVS-3 scores.

**Estimation of effect sizes**

We used the effect sizes ($ES$) for cluster-randomised trials, as adapted from Hedges (2007):

$$ES = \frac{(\overline{Y}_I - \overline{Y}_C)_{adjusted}}{\sqrt{\sigma_S^2 + \sigma_{error}^2}}$$

Where $(\overline{Y}_I - \overline{Y}_C)_{adjusted}$ is the mean difference between the treatment and control groups adjusted for baseline characteristics, while $\sigma_S^2 - \sigma_{error}^2$ is an estimate of the population SD. From the primary outcome model, we took each group's adjusted mean and variance to calculate the effect size. This variance was the total variance (across both child and setting levels, without any covariates, as emerging from a 'null' or 'empty' multilevel model with no predictors). A 95% confidence interval (CI) for the $ES$, that considers the clustering of children in settings, is reported. Effect sizes were calculated for each of the models estimated.

**Estimation of ICC**

The ICC at analysis stage was based on the primary outcome measure (i.e. receptive language measured using the BPVS-3) and calculated using: (i) the same model as equation 1; and (ii) a model similar to that documented in equation 1 but with no covariates accounting for the clustering of pupils in settings (the so-called 'empty' model). ICCs were estimated using Stata's *estat icc* command.

# IPE

**Research methods**

The IPE integrated the data collected by using the following research methods: observations; interviews; surveys; and collection of attendance data. Most IPE research activities were carried out as initially planned, but the site visit interviews were conducted online rather than in person to reduce the burden on nursery settings.

Table 11, gives an overview of IPE data collection methods and how these related to the research questions.

*Table 11: IPE methods overview*

| Research methods | Data collection methods | Participants / data sources | Number of participants | Data analysis methods | Research questions addressed | Implementation/ logic model relevance |
|---|---|---|---|---|---|---|
| Qualitative | Observations (in person and online training workshops) | Staff and Program Leaders/training workshops | 8 | Thematic analysis | 1 | Fidelity, quality, responsiveness, adaptation |
| Qualitative | Interviews (early implementation) | Senior staff in treatment settings | 11 | Thematic analysis | 1 | Usual practice, fidelity, adaptation, responsiveness, setting conditions |
| Qualitative | Interviews (ongoing delivery) | Senior staff in treatment settings | 9 | Thematic analysis | 1, 2, 3, 4 | Fidelity, quality, adaptation, responsiveness, perceived outcomes, setting conditions |
| Qualitative | Interviews ('business as usual') | Senior staff in control settings | 9 | Thematic analysis | 3 | Usual practice |
| Qualitative | Interviews as a part of online site visits (senior staff) | Senior staff in treatment settings | 8 | Thematic analysis | 1, 2, 3, 4 | Fidelity, quality, adaptation, responsiveness, perceived outcomes |
| Qualitative | Interviews as a part of online site visits (trained staff) | Hanen-trained setting staff | 12 | Thematic analysis | 1, 2, 3, 4 | Fidelity, quality, adaptation, responsiveness, perceived outcomes |
| Qualitative | Paired interviews (Program Leaders) | Program Leaders | 6 | Thematic analysis | 1, 2, 4 | Fidelity, adaptation, responsiveness, perceived outcomes |
| Qualitative | Paired interview (Communicate SLT CIC) | Communicate SLT CIC trial supervisor/programme lead and business lead | 2 | Thematic analysis | 1, 2, 4 | Fidelity, adaptation, responsiveness, perceived outcomes |
| Quantitative | Survey (post-intervention) | Hanen-trained setting staff | 57 | Descriptive statistics | 1, 2, 3, 4 | Usual practice, fidelity, responsiveness, perceived outcomes |
| Quantitative | Survey (post-intervention) | Non-Hanen trained staff in treatment settings | 35 | Descriptive statistics | 1, 2, 3 | Usual practice, fidelity, responsiveness, perceived outcomes |
| Quantitative | Scoring of pre- and post-intervention videos | Staff in treatment and control settings | 97 | Descriptive statistics | 3 | Changes in staff practice |
| Quantitative | Cost survey (post-intervention) | Project leads at treatment settings, Communicate SLT CIC | 24<br>1 | Descriptive statistics | 5[11] | Cost per pupil |
| Quantitative | Attendance registers | Setting staff, Communicate SLT CIC | – | Frequency counts, compliance analysis | 1 | Compliance, dosage, reach |

[11] IPE research question 5 was mistakenly omitted from the protocol but was assessed as part of the evaluation and is included in this report. The cost evaluation is described in more detail in the section 'Costs', later discussed in the 'Methods' section.

The rest of this section gives an overview of the achieved sample (in terms of settings) and then describes each IPE activity in turn.

*IPE sample overview*
Recruitment for the IPE activities was carried out to ensure that a range of views were collected based on setting type (e.g. maintained versus PVI settings) and setting size. We also sought to cover a range of geographical areas and, where possible, a range of setting profiles in terms of children eligible for EYPP and EAL.

IPE interviews were conducted with staff members from a variety of setting types, ranging from three-form-entry maintained schools to smaller, one-room pre-schools based in community centres. Some settings had separate rooms for babies and toddlers and a main nursery room for three- to four-year-olds, while others only admitted children from the age of three. Settings offered both morning and afternoon sessions and had a mix of pupils attending the nursery either part-time or full-time. Setting managers highlighted that this choice was usually dependent on the parents' needs and the funding allocations that they received; children with 15-hour allocations would attend only morning or afternoon sessions while those parents who could qualify for 30-hour allocations sent their children for both sessions.

In interviews, setting managers reported varying proportions of pupils that were eligible for EYPP at their nurseries, ranging from 40% pupils with EYPP to no pupils with EYPP status. Similarly, the proportion of EAL pupils varied, with some settings having more than 50% EAL pupils while others had no pupils with EAL. Setting managers stated that the process of identifying pupils with special educational needs and disabilities (SEND) and applying for appropriate Education and Health Care Plans (EHCPs) took a long time. This meant that we were not able to collect exact numbers of SEND and EHCP pupils at the settings.

Staff members across the settings differed in their level of qualifications, ranging from Level 3 (equivalent to an A-level qualification, e.g. teaching assistants) to Level 7 (equivalent to a master's degree, e.g. EYFS leads). Nursery staff members also differed in whether they were full-time (e.g. nursery leads working 36-hour weeks) or part-time (e.g. agency staff working three days per week).

Overall, the qualitative IPE interviews (early implementation, ongoing delivery, 'business as usual') and online site visits were conducted with staff from 37 settings. Table 12 shows the spread of these settings across the three regions involved in the evaluation, split by type of setting (maintained or PVI).

*Table 12: IPE interview settings – setting type and region*

| Region | Number of maintained settings | Number of PVI settings | Total |
|---|---|---|---|
| East Midlands | 7 | 7 | 14 |
| North of England | 5 | 5 | 10 |
| West Midlands | 10 | 3 | 13 |
| Total | 22 | 15 | 37 |

Table 13 shows the variation in setting size, in terms of number of staff, split by setting type.

*Table 13: IPE interview settings – setting type and size (based on pre-school children on the register)*

| Setting size (number of staff) | Number of maintained settings | Number of PVI settings | Total |
|---|---|---|---|
| <25 | 8 | 9 | 17 |
| 25–50 | 7 | 5 | 12 |
| 50+ | 7 | 1 | 8 |
| Total | 22 | 15 | 37 |

Responses to the Hanen LLLI-trained practitioner and non-trained-practitioner surveys that were conducted with treatment settings also show variation in terms of setting type (maintained versus PVI) and size (in terms of number of staff).

In total, 70% of the Hanen LLLI-trained practitioner responses came from maintained settings, while 28% were from PVI settings.[12] For non-trained-practitioner responses, 74% came from maintained settings, while 20% came from PVI settings. This was representative of the settings that were recruited for the trial, which followed a split of 70:30 for maintained and PVI settings. Setting size was captured in terms of the number of staff members at the setting. The largest proportion of responses for the trained-practitioner survey and non-trained-practitioner survey came from nurseries with ten or more staff members. Table 14 shows the variation in nursery size for survey respondents.

*Table 14: Survey respondents' setting size*

| Setting size | Completed surveys | |
|---|---|---|
| (number of staff) | Hanen LLLI-trained practitioner | Non-trained practitioner |
| 1–3 | 16 | 4 |
| 4–6 | 16 | 11 |
| 7–9 | 6 | 5 |
| 10 or more | 19 | 15 |
| Total | 57 | 35 |

*Observations of Hanen LLLI workshops*

We conducted observations of the Hanen LLLI training workshops to gather information on delivery, any adaptations made to the programme, and practitioners' engagement with the training. We observed eight training workshops between November 2022 and May 2023. We observed two in-person workshops and two online workshops at different time-points of programme delivery. For each workshop, we observed two different groups of Program Leaders and staff in order to capture variation and adaptation. The workshops were selected so that observations could cover a range of geographical areas and types of settings (maintained and PVI). We also selected workshops that had not been observed in Hanen LLLI 1.

*Table 15: Workshops by mode and whether observations were conducted*

| Workshop | Mode of delivery | Observed (yes/no) | Sessions observed per workshop |
|---|---|---|---|
| Introductory | Online | No | – |
| Workshop 1 | In person | No | – |
| Workshop 2 | In person | Yes | 2 |
| Workshop 3 | Online | Yes | 2 |
| Workshop 4 | Online | No | – |
| Workshop 5 | In person | No | – |
| Workshop 6 | In person | Yes | 2 |
| Workshop 7 | Online | Yes | 2 |
| Workshop 8 | In person | No | – |
| **Total** | **–** | **–** | **8** |

*Interviews with setting staff*

We conducted interviews with senior staff at treatment settings[13] to understand how nurseries participated in Hanen LLLI, in terms of contextual information, barriers and facilitators to delivery, and perceived outcomes. We also conducted interviews with senior staff in control settings[14] to understand usual practice approaches to language and communication development and how these compared with the strategies encouraged by the programme. In all cases, participants were

[12] In total, 2% of respondents selected 'don't know' when asked about their setting type.
[13] Some interviews were carried out with nursery practitioners or teaching staff where they were the lead contact for the evaluation.
[14] As above.

recruited via an invitation email, and in some cases, follow-up phone calls. Settings were sampled to achieve diversity in characteristics expected to affect experiences of Hanen LLLI, e.g. type (maintained versus PVI settings), size, geography, and the number of children eligible for EYPP and with EAL.

- **Early implementation interviews** (n=11) were conducted with treatment nurseries in November 2022 and December 2022 to gather contextual information on the setting and their usual practice to support children's language development. The interviews also explored how settings planned to support staff to attend workshops (including planning staff cover), and any intervention challenges anticipated. Interviews were conducted with senior members of staff (e.g. nursery managers or EYFS leads) via telephone or online and lasted approximately 30 minutes. We sampled settings to ensure a spread across the three main geographical regions, nursery type and size, and number of children eligible for EYPP and with EAL.

- **'Business as usual' interviews** (n=9) with control nurseries took place between January 2023 and March 2023. These gathered data on usual practice in settings, including engagement with any other communication and language development interventions.[15] Interviews were conducted with senior members of staff (e.g. nursery managers or EYFS leads) via telephone or online and lasted approximately 30 minutes. We included settings from across the three geographical areas and ensured variation in nursery type and size.

- **Ongoing delivery interviews** (n=9) with treatment nurseries were conducted between March 2023 and May 2023. The interviews explored how programme delivery had progressed, any facilitators and barriers to delivery, cascading of Hanen LLLI principles to non-trained staff, and perceived outcomes for staff practice, the nursery environment, and children. They also covered practitioners' and nurseries' intention to continue implementing Hanen LLLI principles beyond the end of the trial. Interviews were conducted with senior members of staff (e.g. nursery managers or EYFS leads) via telephone or online and lasted approximately 45 minutes. We sampled settings using the same criteria as the early implementation interviews. Four of these interviews were carried out with settings that participated in the early implementation interviews to facilitate a holistic and longitudinal understanding of programme delivery.

*IPE online site visits*

We conducted eight online site visits to treatment nurseries between January 2023 and April 2023. These visits provided an in-depth understanding of how practitioners and nurseries experienced and delivered the intervention. As a learning from Hanen LLLI 1, the site visit interviews were conducted online rather than in person to reduce the burden on treatment nurseries. We sampled settings for the online site visits based on setting type, size, and area. The sample included a mix of maintained and PVI settings. It also included settings with a less formal literacy curriculum and/or inexperienced EY staff. These settings were added to the sample because the Hanen LLLI 1 IPE suggested that Hanen LLLI was of particular benefit in those settings. The online site visits included:

- **Interview with senior staff member** (nursery manager or EYFS lead; one per nursery, n=8) to understand motivations, barriers and facilitators to engagement with Hanen LLLI. The interviews also explored any adaptations and support required, cascading of knowledge from Hanen-trained staff to non-trained staff members, and how Hanen LLLI interacts with existing practice and perceived outcomes for staff and children.

- **Interview(s) with trained practitioner(s)** (one to two per nursery, n=12) to understand views on training, barriers and facilitators to delivery, adequacy of support, cascading of learning, and any perceived outcomes for staff and children.

*Paired interviews with Program Leaders*

A total of 12 Program Leaders delivered Hanen LLLI in 2022–2023. We conducted three paired interviews with Program Leaders, covering a total of six Program Leaders. The interviews provided evidence on training and video feedback delivery, including any variations and perceived acceptability of the programme, perceived outcomes, and recommendations for improvements. These interviews lasted approximately one hour and were conducted via telephone or online between May 2023 and June 2023.

[15] 'Business as usual' settings were expected to continue with their usual approach to language and communication development and not to engage in other language development interventions.

We sent invitation emails to all 12 Program Leaders and arranged interviews on a 'first come first served' basis. We selected paired interviews as this allowed Program Leaders to pair up with one of their co-deliverers. This allowed us to maximise the people we could speak to during the fieldwork period, gaining a broad range of perspectives to holistically capture delivery of the programme training. We ensured that we interviewed at least one Program Leader from each of the three main geographical areas.

*Paired interview with Communicate SLT CIC*

We conducted one paired interview with Communicate SLT CIC's trial supervisor and programme lead, and business lead to explore key activities, including introductory workshops, pre- and post-programme visits, and training and provision of support for Program Leaders. The interview provided evidence of any adaptations to the prescribed Hanen LLLI guidance, barriers and facilitators to delivery, levels of engagement, and recommendations for improvement. The interview lasted approximately one hour and was conducted online in June 2023. Gathering these data as a paired interview allowed us to efficiently obtain a rich picture of programme delivery and minimise the data collection burden on Communicate SLT CIC.

*Survey of staff taking part in Hanen LLLI*

We conducted a 15-minute post-intervention web survey in June 2023 and July 2023 of all staff who had taken part in Hanen LLLI in 2022–2023. Practitioners were invited to take part in the post-intervention survey via an email sent by NatCen. The survey gathered practitioner feedback on the intervention, including engagement, barriers and facilitators, and perceived outcomes for staff and children. We also asked participants about their views on the training delivery mode and their potential future engagement with Hanen LLLI.

All lead contacts at the treatment settings (n=65) received a link to the survey. The lead contacts were asked to fill in the survey themselves and circulate the link to all the Hanen-trained staff at their settings. We received 57 completed responses from nursery staff across a variety of roles, including teaching assistants, teachers, 'key persons' (which covers any member of staff who works with children in smaller groups), room leaders, nursery managers, EYFS leads, and special educational needs co-ordinators.[16] The largest proportion of responses came from teachers (24 responses), followed by teaching assistants (17 responses) (there were fewer than 10 responses for each of the other roles). The respondents were from 45 nurseries (representing 69% of our sample of 65 treatment settings).

*Survey of non-Hanen trained staff in treatment nurseries*

We conducted a post-intervention web survey in June 2023 and July 2023 of all nursery staff in treatment settings who did not take part in Hanen LLLI, to get a better understanding of the cascading of learning from the programme. This took approximately ten minutes to complete. All lead contacts at the treatment settings (n=65) received a link to the survey and were asked to share this link with non-Hanen trained staff at their nursery setting. We received 35 successfully completed responses from nursery staff across a variety of roles. The largest proportion of responses came from teaching assistants (20 responses), compared with fewer than 10 responses each for all other roles. Staff came from 19 settings (representing 29% of all treatment settings).

*Scoring of pre- and post-intervention videos*

In both treatment and control settings, two videos were produced by the same member of staff: one prior to settings being notified about their treatment allocation status; and one after the end of the programme, with the aim of capturing changes in staff practice. The videos were then reviewed by qualified SLTs and Hanen LLLI licensees. The video reviewers were not involved in programme delivery, they underwent specific training from a Hanen LLLI licensed trainer in the completion of the Hanen video analysis tool. When reviewing videos, they were blind to whether the practitioner in the video was in the treatment or control group. Pre-intervention videos were collected in November 2022 and post-intervention videos were collected in May 2023 and June 2023.

Reviewers scored the staff interactions with children according to the extent to which they implemented Hanen LLLI strategies. Videos were scored using a simplified version of the Teacher Interaction and Language Rating Scale[17], a validated measure used by The Hanen Centre to evaluate how practitioners integrate strategies into their interactions

[16] Practitioners were able to select all roles that applied. Seventeen respondents had at least two roles in the setting.
[17] Teacher Interaction and Language Rating Scale (hanen.org).

with children. Pre- and post-intervention scores were then compared to assess changes in the practices of staff who have taken part in Hanen LLLI and those who have not taken part and have continued with usual practice.

**Analysis**

All qualitative interviews were digitally recorded (with permission from participants) and transcribed by an external professional transcription agency. Details of the observations were recorded by the observers using detailed field notes.

We managed and analysed qualitative data using the Framework approach—a systematic approach to qualitative data management, developed by NatCen, to chart (collate and summarise) transcribed data by theme and case (Ritchie *et al*., 2014). The Framework approach allows analysis within and across cases and themes. Using themes covered in topic guides and any other themes, which emerged from the data, were assembled a matrix in which each row represents an individual interview or focus group discussion, and each column a theme and any related sub-themes. We then summarised the qualitative data in the matrix, including illustrative verbatim quotes where appropriate.

Analysis of workshop observation sessions adopted a similar approach. Observers recorded details of workshop sessions using pre-prepared observation proformas. We created different analytical frameworks and a series of matrices in Microsoft Excel, each relating to a different thematic issue. The columns in each matrix represented the key sub-themes or topics and the rows represented individual workshop or video feedback sessions. We then 'transferred' the observation notes to the matrix.

Once all data was managed in this matrix, we moved to formal analysis. This involved a phase of 'detection', including studying the elements participants say about a particular phenomenon, listing these, and sorting them thematically in relation to the research questions. Once we identified different themes in the data, we created higher level categories that work as meaningful conceptual groupings for participants' views and experiences.

Survey data was analysed descriptively in terms of frequencies and percentages using SPSS Statistics (SPSS Inc., Chicago, IL, USA). Subgroup analysis was carried out for key break variables, where numbers permitted it.

Attendance data was collected by Communicate SLT CIC and we analysed it by categorising the data provided into the IPE domains around reach, dosage, and fidelity.

The logic model provided a framework for interpreting the results. Data on delivery and engagement were used to understand the extent to which the inputs, activities, and outputs as presented on the logic model accurately described Hanen LLLI implementation. Data on outcomes for children, practitioners, and nursery settings were gathered in the IPE through exploring perceived benefits of the intervention. We triangulated and synthesised IPE data according to the research questions and implementation domains. This enabled us to provide a comprehensive assessment of implementation, report against the finalised logic model, and explain the impact evaluation findings. Our analysis also draws out key learnings for future delivery, including any potential changes required for a future scale-up of the intervention. While the logic model did not include change mechanisms, they were considered in the IPE analysis, particularly in the domains of quality and responsiveness, to better understand how and why activities can cause the described outcomes and impacts.

## Costs

We collected and analysed cost data from both Communicate SLT CIC and settings that received the Hanen LLLI intervention, in line with the EEF guidelines (EEF, 2023c).

At the end of the academic year (June 2023), NatCen circulated a short web form to lead contacts at treatment settings to gather information on the costs of taking part in Hanen LLLI. We asked lead contacts to contact the settings' finance department or bursar for more details if they needed more information to answer the questions.

The following cost categories were included in the web form, which made it clear that respondents should report *additional* costs, namely, those above normal spending in terms of time and money:

- cost of cover for setting staff to attend various Hanen training activities, including the information event, introductory workshop, baseline visit, post-programme visit, workshops, video feedback sessions, and informal cascading support drop-in sessions;
- time setting staff spent attending various Hanen LLLI activities listed above, plus additional hours spent sharing Hanen LLLI learning with non-Hanen LLLI trained colleagues and accessing resources and tools; and
- travel costs.

The cost survey was sent to all 65 treatment settings, and a total of 24 settings (37%) completed it. Within the cost survey there was some item level missing data. Where respondents did not answer specific questions (e.g. by giving the answer 'don't know') the average cost for the specific item was computed from the settings who did provide an answer using a mean cost.

In addition to the costs collected from settings, a form was sent to Communicate SLT CIC in July 2023 to collect information on the costs incurred by the delivery partner. The form covered the following cost categories:

- materials for Program Leaders;
- technical equipment;
- room hire and facilities;
- cost and time spent training Program Leaders; and
- cost and time Program Leaders spent carrying out Hanen LLLI training in settings.

Data from the Hanen LLLI settings and Communicate SLT CIC were used to calculate a per pupil cost of implementing the programme over three years in line with the EEF guidance (EEF, 2023c). To do this, costs were categorised into three groups: 'pre-requisites'; 'start-up'; and 'recurring' costs. The per pupil calculation was based on the number of settings who received the Hanen LLLI intervention (n=70), and the average number of pupils enumerated per Hanen LLLI setting (n=29). The average time settings spent implementing the programme was also calculated from the data collected from settings.

## Timeline

*Table 16: Hanen LLLI evaluation timeline*

| Dates | Activity | Staff responsible / leading |
|---|---|---|
| December 2021 – January 2022 | Set up meetings | NatCen |
| January 2022 | IDEA (Intervention Delivery and Evaluation Analysis) workshop | NatCen |
| January 2022 – February 2022 | Recruiting settings for the pilot | Communicate SLT CIC |
| February 2022 | Ethical review | NatCen |
| February 2022 – March 2022 | Logic model review | NatCen |
| February 2022 – July 2022 | Pilot programme delivery | Communicate SLT CIC |
| March 2022 | Completion of data sharing agreement | NatCen, Communicate SLT CIC |
| March 2022 | Developing recruitment materials | NatCen |
| March 2022 – July 2022 | Recruiting nursery settings | Communicate SLT CIC |
| April 2022 | Completion of trial protocol | NatCen |
| May 2022 | Contract agreement finalised | NatCen |
| May 2022 | Completion of trial registration | NatCen |

| Dates | Activity | Staff responsible / leading |
|---|---|---|
| June 2022 | Presentation of pilot interim findings | NatCen |
| August 2022 | Randomisation | NatCen |
| August 2022 | Submission of draft pilot report | NatCen |
| September 2022 | Presentation of pilot findings | NatCen |
| September 2022 | Pupil information collected | NatCen |
| September 2022 | Pupils selected for testing | NatCen |
| October 2022 | Baseline assessments in nurseries<br>Nursery settings informed of randomisation (after testing) | NatCen |
| November 2022 | Submission of the statistical analysis plan | NatCen |
| November 2022 – June 2023 | Intervention delivery | Communicate SLT CIC |
| November 2022 | Pre-intervention staff videos | Communicate SLT CIC |
| November 2022 – June 2023 | Compilation of training attendance records | Communicate SLT CIC |
| November 2022 – May 2023 | Workshop observations | NatCen |
| November 2022 – December 2022 | Early implementation interviews | NatCen |
| January 2023 – March 2023 | 'Business as usual' interviews | NatCen |
| January 2023 – April 2023 | Online site visits | NatCen |
| March 2023 – May 2023 | Ongoing delivery interviews | NatCen |
| May 2023 – June 2023 | Program Leader interviews | NatCen |
| June 2023 | Interview with Communicate SLT CIC | NatCen |
| May 2023 – June 2023 | Post-intervention staff videos and scoring | Communicate SLT CIC |
| June 2023 – July 2023 | IPE surveys and cost forms | NatCen |
| June 2023 – July 2023 | Endline assessments in nurseries | NatCen |
| July 2023 – November 2023 | Analysis and reporting | NatCen |
| November 2023 | Submission of the EEF draft report | NatCen |
| April 2024 | Final version of the EEF report | NatCen |

# Impact evaluation results

## Participant flow including losses and exclusions

The participant flow diagram is presented in Figure 2. The diagram shows that 167 schools were recruited and randomised. A total of 27 settings (11 treatment settings and 16 control settings) withdrew before baseline assessment for various reasons. The reasons for withdrawal were: staffing issues (n=14), timescales of the evaluation activities (n=6), or settings being unable to upload pupil data in time (n=6). There was one further setting that withdrew during the baseline assessment, prior to being notified of their allocation status after some pupils had already been assessed. This setting was removed from the trial, and the assessment data that had already been collected for some pupils was deleted.

After baseline assessment, 140 settings remained in the trial, of which 72 settings were assigned to receive Hanen LLLI and 68 settings were assigned to 'business as usual'. Settings were notified of their allocation status shortly after the baseline assessment had been completed. Baseline data was collected for 2,099 children. At the follow-up stage, data was collected from 962 pupils in 70 treatment settings and 889 pupils in 68 control settings (1,851 pupils in total). At the analysis stage, a small number of pupils (n=21) were excluded from analysis due to being under the age of 36 months at baseline data collection, or missing a date of birth. More details can be found in the 'Attrition' section below. A total of 1,830 pupils were analysed.

## Attrition

Two treatment settings stopped implementing Hanen LLLI and did not participate in the outcome testing at endline. This has been listed under the 'lost to follow-up' category in the participant flow diagram (see Figure 2) and is not included in the final analysis. No control schools dropped out from the trial.

Baseline data was available for 1,104 children in 72 treatment settings and 995 children in 68 control schools. However, a further 21 pupils in total were excluded from the analysis as they were under the age of three (36 months) when tested at baseline or did not have a date of birth recorded. These 21 pupils (18 treatment; 3 control) are listed under the 'Not analysed' boxes in Figure 2.

At the follow-up stage, primary outcome data was collected from 962 pupils in 70 treatment settings and 889 pupils in 68 control settings.

The main reasons children did not participate at outcome testing were the following:

- the setting did not take part in follow-up testing (11.3% of children not tested);
- pupils had a long-term illness or were absent for a long period (28.6% of children not tested);
- pupils had moved nurseries (42% of children not tested);
- pupils had SEND and staff advised they should not take part (2.5% of children not tested);
- pupils refused to take part (3.4% of children not tested); and
- pupils did not take part for an unknown reason (12.2% of children not tested).

For the primary analysis, data was available for 944 children in 70 treatment settings and 886 children in 68 control settings. Four pupils did not complete the BPVS-3 assessment but did complete the RAPT assessment at endline.

For the secondary analysis, data was available for 934 pupils in 70 treatment settings and 878 pupils in 68 control settings. Twenty-two pupils did not complete the RAPT assessment but did complete the BPVS-3 assessment at endline.

In total, 29 settings withdrew from the trial post-randomisation, including 27 settings that withdrew before baseline pupil enumeration and two settings that withdrew after baseline assessment. Table 17 shows that between 82.6% and 98.6% of settings analysed remained in the study until analysis depending on whether settings withdrew before or after pupil

enumeration. In the treatment group, the retention rate is 84.3% (an attrition rate of 15.7%) with 70 settings in the analysis from 83 at randomisation. In the control group, the retention rate is 81% (an attrition rate of 19%) with 68 settings in the analysis from 84 at randomisation. Focusing on after pupil enumeration setting attrition, the retention rate amounts to 97.2% in the treatment group and 100% in the control group.

*Figure 2: Participant flow diagram*

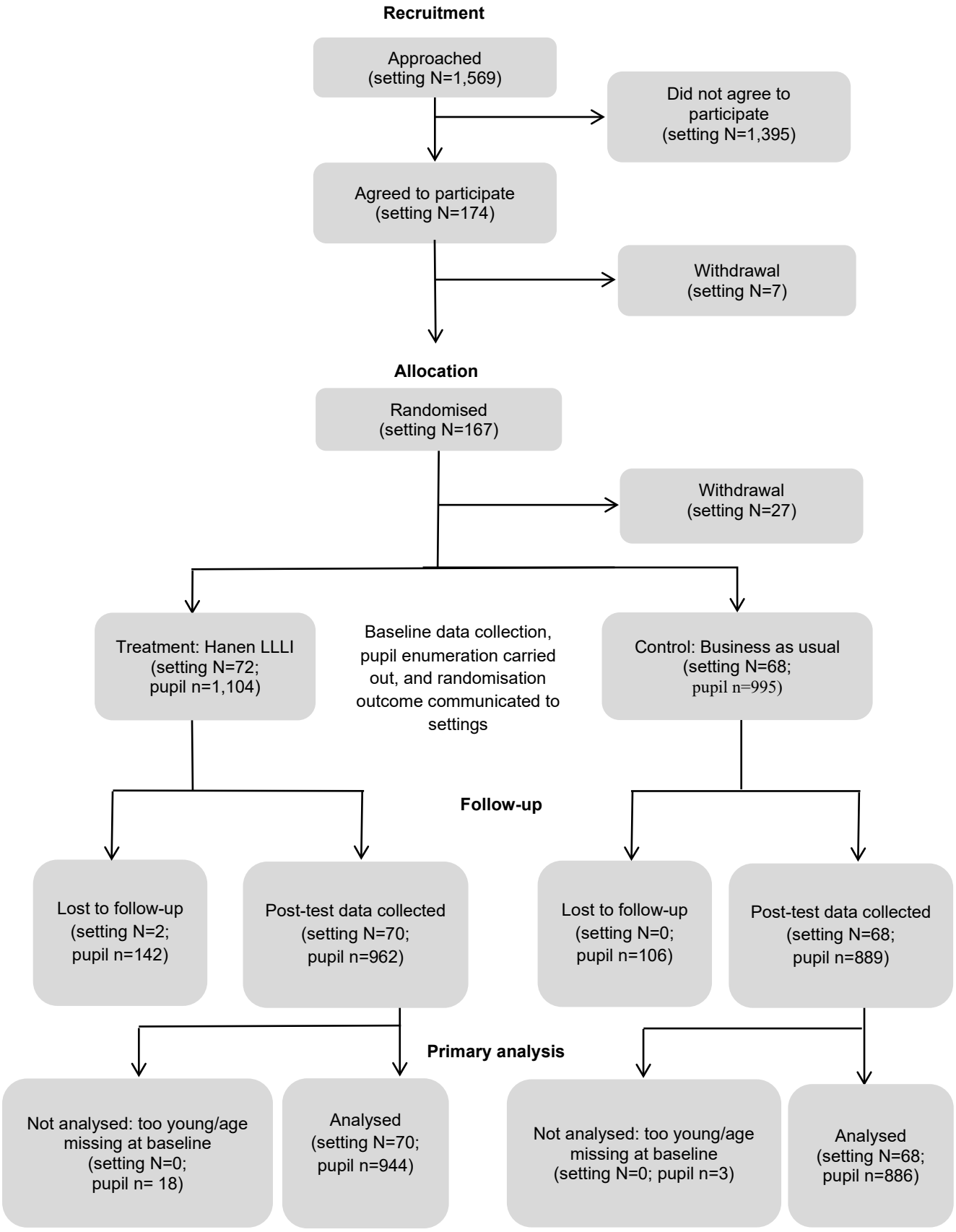


*Table 17: Setting-level attrition from the trial (primary outcome)*

| | | Before pupil enumeration | | | After pupil enumeration | | |
|---|---|---|---|---|---|---|---|
| | | Treatment | Control | Total | Treatment | Control | Total |
| Number of settings | Randomised | 83 | 84 | 167 | 72 | 68 | 140 |
| | Analysed | 70 | 68 | 138 | 70 | 68 | 138 |
| Setting attrition (from randomisation to analysis) | Number | 13 | 16 | 29 | 2 | 0 | 2 |
| | Percentage | 15.7% | 19.0% | 17.4% | 2.8% | 0.0% | 1.4% |

*Table 18: Pupil-level attrition from the trial (primary outcome)*[18]

| | | Treatment | Control | Total |
|---|---|---|---|---|
| Number of pupils | Randomised | 1,104 | 995 | 2,099 |
| | Analysed | 944 | 886 | 1,830 |
| Pupil attrition (from randomisation to analysis) | Number | 160 | 109 | 269 |
| | Percentage | 14.5% | 11.0% | 12.8% |

## Pupil and nursery characteristics

Table 19 shows the baseline distribution of school and pupil characteristics across the control and treatment settings using all pre-randomisation data available on each respective variable. To assess the balance of pupil characteristics we have presented a descriptive table of pupils' characteristics in the treatment and control settings.

Settings were fairly evenly distributed across the three Regional School Commissioner areas, with the highest proportion of settings in the West Midlands, and the lowest in the North of England. In total, 16% of children in the treatment group were eligible for EYPP, compared to 19% in the control group. At baseline there remained some missing values for EYPP status. Children were an average of 43 months old at the time of the baseline assessment across treatment and control settings.

Children in both groups had an average BPVS-3 score of 91. The BPVS-3 instrument has been standardised such that the national average score for each age group is 100. Standardised scores of below 100 indicate that children are attaining a lower level of receptive language development, on average, than the national average for their age. This is consistent with the aims of Hanen LLLI to support settings that have a relatively higher need for the treatment.

*Table 19: Baseline characteristics of groups as randomised*

| School level (categorical) | Treatment group | | Control group | |
|---|---|---|---|---|
| | n/N (missing) | Count (%) | n/N (missing) | Count (%) |
| PVIs | 24/72 (0) | 33.33 | 24/68 (0) | 35.29 |
| East Midlands | 23/72 (0) | 31.94 | 22/68 (0) | 32.35 |

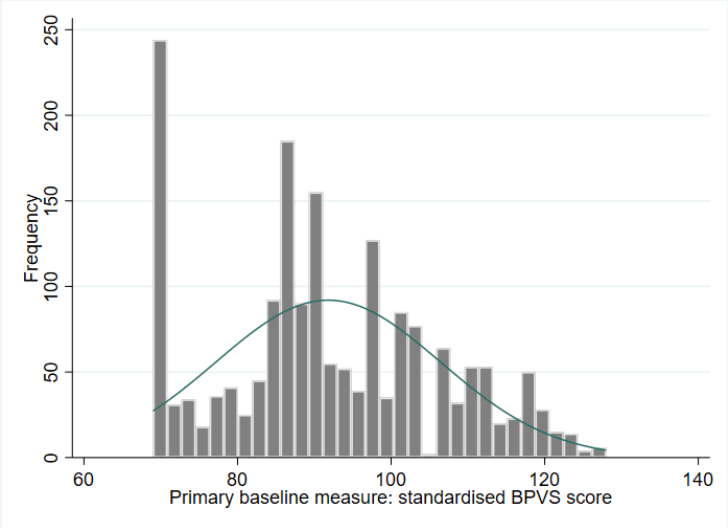
[18] Given that the number of pupils is only known for schools that completed pupil enumeration at baseline, this table presents pupil-level attrition in post-pupil enumeration settings only. Assuming that the average number of pupils in the 27 settings that withdrew before pupil enumeration was the same as in the rest of the sample, the total number of pupils in those 27 settings would amount to $\frac{1,104}{72} \times 11 + \frac{995}{68} \times 16 = 402.8$. In such case, the pupil-level attrition would be equal to 26.9% (27.9% in the control group and 25.8% in the treatment group).

| | | | | | |
|---|---|---|---|---|---|
| North of England | 17/72 (0) | 23.61 | 17/68 (0) | 25 | |
| West Midlands | 32/72 (0) | 44.44 | 29/68 (0) | 42.65 | |
| School level (continuous) | n/N (missing) | Mean (SD) | n/N (missing) | Mean (SD) | |
| Number of pupils enumerated | 72/72 (0) | 29.01 (15.06) | 68/68 (0) | 27.54 (14.45) | |
| Pupil level (categorical) | n/N (missing) | Count (%) | n/N (missing) | Count (%) | |
| EYPP status | 161/1,104 (106) | 16.13 | 174/995 (67) | 18.75 | |
| Pupil level (continuous) | n/N (missing) | Mean (SD) | n/N (missing) | Mean (SD) | Effect size |
| Pupil age in months | 1,104/1,104 (0) | 43.01 (3.93) | 994/995 (1) | 43.28 (3.96) | – |
| Standardised BPVS-3 score | 1,082/1,104 (22) | 91.64 (14.71) | 990/995 (5) | 90.81 (14.69) | 0.01 |

## Outcomes and analysis

### Primary analysis

*Figure 3: Primary baseline measure – distribution of BPVS-3 at baseline*

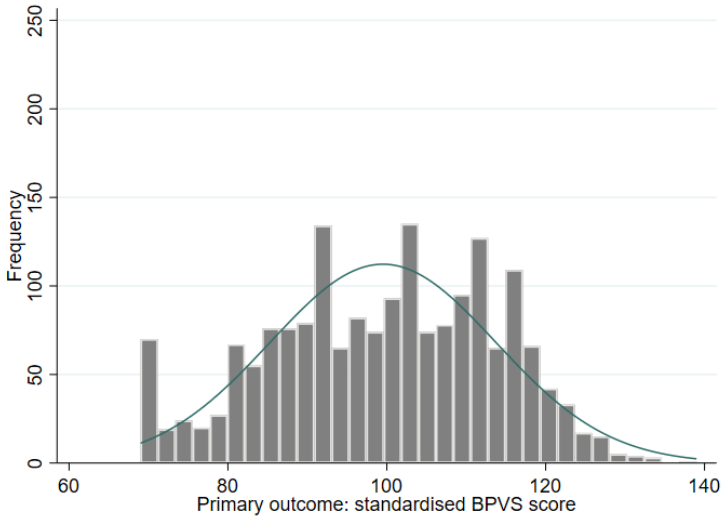



The evaluation uses BPVS-3, age-standardised score as the primary outcome, constructed using conversion tables available in the BPVS-3 scoring manual. For children in the final analysis (1,830 children with observable data on all variables) the BPVS-3 outcome has an overall mean of 99.5 and SD of 14.2 at endline. The range for the analytic sample is from 69 to 139.

The primary outcome measure is correlated to the BPVS-3 baseline measure with r=0.76. The BPVS-3 baseline measure distribution is illustrated in Figure 3. The distribution of baseline BPVS-3 scores has a notable peak at 69, the lowest score, with 12.9% (n=267) of pupils obtaining this score. The floor effect for this measure was expected given the age of the pupils and the nature of the test. Indeed, following the BPVS-3 age-standardisation guideline (Dunn *et. al.,* 2009), scores below the floor value (69) should be recoded at the floor value level.

The distribution of the primary outcome measure (BPVS-3 scores measured at endline) is shown in Figure 4 and is skewed towards lower scores. Thus, the observations are not normally distributed. However, the peak of children who were given the floor score of 69 has reduced to 2.7% (n=50). Due to the non-normal distribution of the dependent variable, residuals were plotted against fitted values to assess the risk of heteroskedasticity (unequal variance of residuals across the variables values) (Figure 14 in Appendix G). We checked for this situation as it would have implications for the model and the tests used in the analysis. The variance of the residuals looks constant over the different fitted values; hence the baseline scores were used in the analysis, and the parametric tests employed in the analysis are assumed to be valid.

*Figure 4: Primary outcome measure – distribution of BPVS-3 outcomes at endline*




In the multilevel model that accounts for the standardised BPVS-3 pre-test, the stratification region-setting type variable and the clustering of pupils in settings, the adjusted difference in means is equal to 0.72, with a p-value of 0.230 (Table 20 and Table 21). The effect size associated with the adjusted difference in mean is 0.05 (95% CI: -0.04, 0.14), which indicates weak evidence of a very small positive effect of Hanen LLLI on the BPVS-3 scores of children; however, the CI includes negative values.

*Table 20: Primary outcome analysis results*

| | | | | Treatment group | | Control group | | |
|---|---|---|---|---|---|---|---|---|
| Outcome | Unadjusted differences in means | Adjusted differences in means | n (missing) | Variance of outcome | n (missing) | Variance of outcome | Pooled variance | Population variance (if applicable) |
| Standardised BPVS-3 score | 1.49 | 0.72 | 944(160) | 198.6 | 886(109) | 205.4 | 201.89 | N/A |

*N/A, not applicable.*

*Table 21: Primary outcome analysis – effect size estimation*

| | Unadjusted means | | | | Effect size | | |
|---|---|---|---|---|---|---|---|
| | Treatment group | | Control group | | | | |
| Outcome | n (missing) | Mean (95% CI) | n (missing) | Mean (95% CI) | Total n (treatment; control) | Hedges' g (95% CI) | P-value |
| Standardised BPVS-3 score | 944 (160) | 100.24 (99.34, 101.14) | 886 (109) | 98.75 (97.81, 99.7) | 1,830 (944; 886) | 0.05 (-0.04, 0.14) | 0.230 |

The post-intervention ICCs were estimated from endline BPVS-3 data from both control and treatment settings. The ICC for within settings is 0.165 when calculated with no adjustments (the empty model). When controlling for covariates accounting for the clustering of pupils in settings using the same model as equation 1, the within setting ICC for the primary outcome is 0.074.

**Secondary analysis**

*RAPT*

RAPT scores were collected at endline as a secondary measure of expressive language. The distribution of RAPT information and grammar scores measured at endline is shown in Figure 5 and Figure 6. Here again, the observations are not normally distributed for both the information and grammar scores, as they are slightly skewed in one direction rather than being symmetrical around the mean. However, plotting the residuals against the fitted values shows no sign of heteroskedasticity (Figure 15 and Figure 16 in Appendix G). For children in the final analysis (1,812 children with observable data on all variables) the RAPT information variable has an overall mean of 23.2 and SD of 7.2. The RAPT grammar variable has an overall mean of 16.9 and SD of 7.4. The range for the analytical sample of the RAPT information variable is from 0 to 39. The range for the analytical sample of the RAPT grammar variable is from 0 to 36. There appeared to be a mild ceiling effect for both RAPT scores, with few pupils obtaining a score above 35 in either measure. This may be because pupils included in the sample were in the target age range for the test, but they were at the lower end of the age range for whom the test is deemed suitable.

*Figure 5: Secondary outcome measure – distribution of RAPT information scores at baseline*

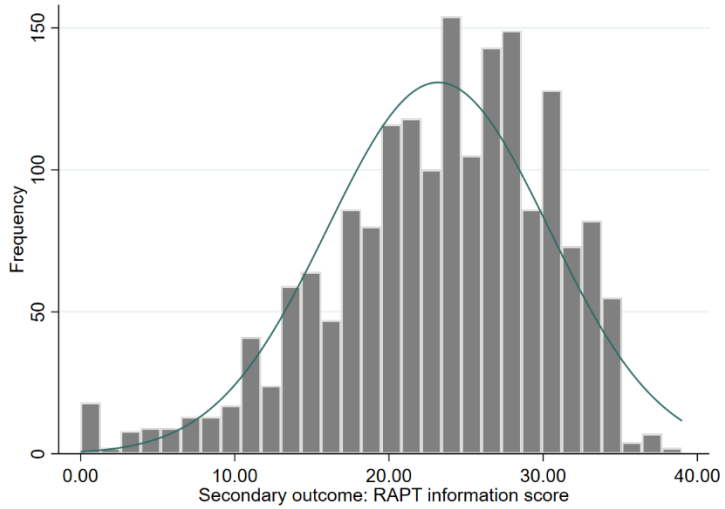
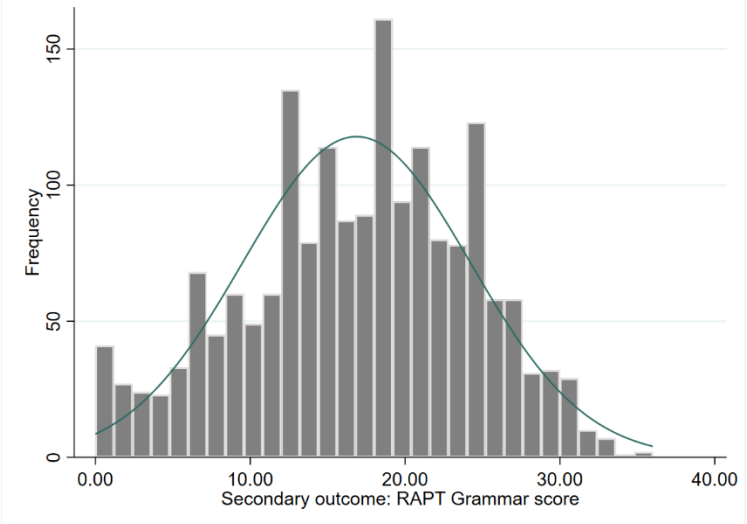



*Figure 6: Secondary outcome measure – distribution of RAPT grammar scores at endline*



The RAPT information and grammar variables are correlated with the BPVS-3 baseline measure. The RAPT information (grammar) variable is moderately correlated to the BPVS-3 baseline measure with r=0.56 (r=0.55). The BPVS-3 baseline measure distribution is illustrated in Figure 3.

For both the RAPT information and grammar variables (see Table 22 and Table 23), the raw mean for the Hanen LLLI treatment group is larger than the raw mean for the 'business as usual' control group. The RAPT information score raw mean is 23.5 for the treatment group in comparison to 22.86 for the control group (Table 23). Moreover, the RAPT grammar score raw mean is 17.19 for the treatment group compared with 16.52 for the control group (Table 23). In the model, the unadjusted differences in means for the RAPT information (grammar) outcome is equal to 0.65 (0.67) (Table 22).

Similar to the primary analysis, the secondary analysis takes an ITT approach and used a multilevel model (see equation 2). In the model, the adjusted difference in mean for the RAPT information outcome is equal to 0.38, with a p-value of 0.47 (Table 22 and Table 23). For the RAPT grammar outcome, the adjusted difference in mean is equal to 0.40, with a p-value of 0.38 (Table 22 and Table 23). The effect size associated with the adjusted difference in mean for both the RAPT information and grammar scores is 0.05 (CI: -0.04, 0.15) and is shown in Table 23. This indicates weak evidence of a positive effect of Hanen LLLI on the RAPT scores of children, although the CIs include a range of negative values.

*Table 22: Secondary outcome analysis results (RAPT scores)*

| | | | Treatment group | | Control group | | | |
|---|---|---|---|---|---|---|---|---|
| Outcome | Unadjusted differences in means | Adjusted differences in means | n (missing) | Variance of outcome | n (missing) | Variance of outcome | Pooled variance | Population variance (if applicable) |
| RAPT information score | 0.65 | 0.38 | 934 (170) | 50.45 | 878 (117) | 52.7 | 51.54 | N/A |
| RAPT grammar score | 0.67 | 0.40 | 934 (170) | 52.85 | 878 (117) | 55.5 | 54.13 | N/A |

*N/A, not applicable.*

*Table 23: Secondary outcome analysis – effect size estimations (RAPT scores)*

| | Unadjusted means | | | | Effect size | | |
|---|---|---|---|---|---|---|---|
| | Treatment group | | Control group | | | | |
| Outcome | n (missing) | Mean (95% CI) | n (missing) | Mean (95% CI) | Total n (treatment; control) | Hedges' g (95% CI) | P-value |
| RAPT information score | 934 (170) | 23.5 (23.05, 23.96) | 878 (117) | 22.86 (22.38, 23.34) | 1,812 (934; 878) | 0.05 (-0.04, 0.15) | 0.47 |
| RAPT grammar score | 934 (170) | 17.19 (16.72, 17.65) | 878 (117) | 16.52 (16.02, 17.01) | 1,812 (934; 878) | 0.05 (-0.04, 0.15) | 0.38 |

*SDQ-T*

The SDQ TDS was collected at endline through SDQ-T. The distribution of the TDS is shown in Figure 7, and clearly exhibits a non-normal distribution, with many pupils with a score of zero (lowest possible score). However, plotting the residuals of this linear model against the fitted values (Figure 17 in Appendix G) does not show any strong sign of heteroskedasticity. As a result, no additional analysis was carried out.

In the sample of pupils for whom we have SDQ responses (1,518 pupils), the SDQ TDS overall mean is equal to 7.27 and the SD to 6.52. The analysis of the SDQ TDS follows a similar ITT approach to that of the RAPT scores, except that the baseline BPVS-3 score is no longer included as a covariate, as it does not capture pupil's behaviour. The unadjusted difference in means between the treatment and control group is equal to 0.05, and the adjusted difference in means to 0.06 (p = 0.921), as illustrated in Table 24 and Table 25. The effect size associated with the intervention is equal to 0 (CI: -0.1, 0.1) indicating that Hanen LLLI had no effect on the SDQ scores of children (Table 25).

*Figure 7: Secondary outcome measure – distribution of the SDQ TDS at endline*

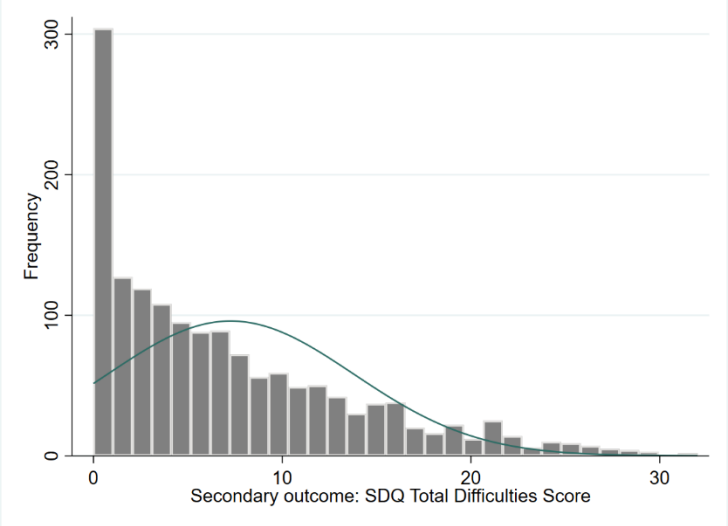



*Table 24: Secondary outcome analysis results – SDQ TDS*

| | | | Treatment group | | Control group | | | |
|---|---|---|---|---|---|---|---|---|
| Outcome | Unadjusted differences in means | Adjusted differences in means | n (missing) | Variance of outcome | n (missing) | Variance of outcome | Pooled variance | Population variance (if applicable) |
| SDQ TDS | 0.05 | 0.06 | 671 (433) | 40.54 | 847 (148) | 44.07 | 42.51 | N/A |

*N/A, not applicable.*

*Table 25: Secondary outcome analysis – effect size estimations (SDQ TDS)*

| | Unadjusted means | | | | Effect size | | |
|---|---|---|---|---|---|---|---|
| | Treatment group | | Control group | | | | |
| Outcome | n (missing) | Mean (95% CI) | n (missing) | Mean (95% CI) | Total n (intervention; control) | Hedges' g (95% CI) | P-value |
| SDQ TDS | 671 (433) | 7.3 (6.81, 7.78) | 847 (148) | 7.25 (6.8, 7.7) | 1,518 (671; 847) | 0 (-0.1, 0.1) | 0.921 |

**Analysis in the presence of non-compliance**

In total, out of the 72 settings that received the intervention, five settings were deemed non-compliant, which corresponds to 67 pupils at endline (7%). A CACE analysis for the primary outcome was performed on complete cases only. Results are presented in Table 26. The first stage of the analysis regressing the compliance indicator on the intervention status shows a coefficient on the latter of 0.93 with a p-value inferior to 0.001. The F test statistic associated with the first stage amounts to 336.5. The second stage of the analysis finds an adjusted difference in means equal to

0.77, slightly above that found under the ITT analysis (0.72, see Table 20). The associated effect size (Hedges' g) is equal to 0.05 (CI: -0.04, 0.15), very close to that observed in the ITT analysis. The fact that the CI of the effect size includes zero, coupled with a p-value of 0.22, suggests that one cannot reject the null hypothesis that the intervention had no effect on the BPVS-3 outcome, thus no evidence is found that increased compliance with Hanen LLLI leads to better language outcomes for pupils.

*Table 26: CACE analysis for the primary outcome*

| | Total n | Predictor | Adjusted difference in means | Effect size (95% CI) | P-value |
|---|---|---|---|---|---|
| IV model: stage 1 – compliance indicator regressed on intervention status | 1,830 | Intervention status | 0.93 | N/A | <0.001 |
| IV model: stage 2 – BPVS-3 regressed on compliance indicator from stage 1 | 1,830 | Compliance indicator | 0.77 | 0.05 (-0.04, 0.15) | 0.22 |

*N/A, not applicable.*

**Missing data analysis**

There was some pupil-level attrition between settings being notified of their randomisation outcome at baseline testing and endline analysis of the primary and secondary outcomes. The level of attrition of the different outcomes is shown in Table 27. All levels of attrition are higher than 5%, which is the accepted level below which patterns of missingness can be ignored. A drop-out model was run to explore the pattern of missingness. This involved using a logistic regression of a binary variable, whether an outcome data is missing or not, and the following covariates: treatment allocation; strata (setting type-region); number of pupils enumerated; eligibility for EYPP; imputed BPVS-3 score at baseline;[19] imputed age; whether BPVS-3 score was missing at baseline; and whether age was missing. The coefficients of the drop-out model regressions are presented in Table 45 in Appendix D.

Across the four regressions, the BPVS-3 score at baseline is systematically associated with a higher probability for the outcome to be missing, suggesting that attrition may not be random. Indeed, if pupils with more important learning difficulties are less likely to be included in the final analysis, the estimation of equations 1, 2, and 3 could be biased.[20] The estimations of logistic regression model show that none of the covariates apart from baseline BPVS-3 predicted that the primary outcome data would be missing at endline.

*Table 27: Pupil-level attrition between baseline and endline data collection*

| | | Treatment | Control | Total |
|---|---|---|---|---|
| Number of pupils | Randomised | 995 | 1,104 | 2,099 |
| BPVS-3 (endline) | Analysed | 962 | 889 | 1,851 |
| | Attrition | 12.9% | 10.6% | 11.8% |
| RAPT grammar | Analysed | 952 | 882 | 1,834 |
| | Attrition | 13.8 | 11.4% | 12.6% |
| RAPT information | Analysed | 934 | 878 | 1,812 |
| | Attrition | 15.4% | 11.8% | 13.7% |
| SDQ | Analysed | 655 | 843 | 1,498 |
| | Attrition | 40.7% | 15.3% | 28.6% |

**Imputation analysis**

A multiple imputation analysis was carried out using the *mi* Stata command, which applies a chained equation approach (MICE). The imputation model imputed the four outcomes of interest from the following variables: imputed baseline BPVS-3 score; imputed age; whether baseline BPVS-3 score was missing; whether age was missing; number of enumerated pupils; and strata dummies. In total, 100 imputed datasets were generated. Convergence of the resulting

[19] BPVS-3 score at baseline was replaced with the sample mean for missing observations.
[20] The direction of the bias is difficult to assess. Under the assumption that the programme should have a larger effect on pupils with more difficulties, higher level of attrition among such pupils would introduce a downward bias in the estimate of the programme impact. The opposite would hold true if we anticipate a larger effect on pupils with stronger skills at baseline.

parameters was interrogated graphically (see Figures 10 to 13 in Appendix E). All parameters exhibit full levels of convergence.

Endline BPVS-3, RAPT information and grammar scores, and SDQ TDS models where then fitted across all imputed datasets following equations 1, 2, and 3, respectively, and resulting posterior distributions were pooled. Corresponding adjusted differences in means and Hedges' g, together with the associated 95% CIs and p-values, are reported in Table 28.

The results for BPVS-3 and the two RAPT scores remain consistent with the complete case analysis. The adjusted difference in means for BPVS-3 between treatment and control pupils amounts to 0.52, against 0.72 for the complete case (cf. Table 28). An opposite trend is observed for effect size, with the Hedges' g equal to 0.07 (CI: -0.02, 0.15), slightly above that of the complete case analysis (0.05 [CI: -0.04, 0.14]). P-values are of similar magnitude, though slightly higher under the MICE estimate (0.36 against 0.23). In the case of the RAPT information (grammar) score, the MICE adjusted difference in means is equal to 0.38 (0.40), against 0.30 (0.31) for the complete case analysis. Corresponding Hedges' g are almost identical: 0.04 (-0.05; 0.12) and 0.04 (-0.04; 0.13) against 0.04 (-0.06 -0.13).

When it comes to the SDQ TDS, the adjusted difference in means increases from 0.06 to 0.16 when moving from the complete case to the MICE analysis, suggesting that the intervention led to an increase in pupil's difficulties. However, the size of the p-values (0.76), together with the width of the Hedges' g CI (-0.06, 0.11) suggest that one cannot reject the null hypothesis that Hanen LLLI has no impact on the pupils' socio-emotional development.

*Table 28: Analysis of imputed datasets*

| | Adjusted difference in mean (95% CI) | Hedges' g (95% CI) | P-value |
|---|---|---|---|
| BPVS-3 | 0.52 (-0.60, 1,64) | 0.07 (-0.02, 0.15) | 0.36 |
| RAPT information score | 0.30 (-0.63, 1.22) | 0.04 (-0.05, 0.12) | 0.53 |
| RAPT grammar score | 0.31 (-0.50, 1.12) | 0.04 (-0.04, 0.13) | 0.45 |
| SDQ TDS | 0.16 (-0.86, 1,18) | 0.02 (-0.06, 0.11) | 0.76 |

**Subgroup analyses**

Two subgroup analyses were carried out, first for pupils eligible for EYPP and second for pupils with lower initial language development.

The first subgroup analysis aimed to address research question 4 and assess whether Hanen LLLI has a differential impact for pupils who are eligible for EYPP in the treatment group compared to pupils eligible for EYPP in the control group. A multilevel linear regression model was fit with BPVS-3 as the dependent variable. The regression output for this model can be found in Table 46 in Appendix F. The interaction term coefficient for EYPP and the treatment group is 0.122, with a p-value of 0.923. This suggests that there is no evidence that Hanen LLLI had a differential impact on pupils in the treatment group based on their eligibility for EYPP. An additional model was then run only including the subsample of pupils who were eligible for EYPP (n=287). The effect size for this model was 0.08 (with CIs of -0.15 and 0.31) indicating that there was no difference in the effect of the intervention for children eligible for EYPP. The full findings are presented in Table 47 and Table 48 in Appendix F.

The second subgroup analysis aimed to address research question 5 and assess whether Hanen LLLI has a differential impact for children with lower initial language development in the treatment group compared to pupils with lower initial language development in the control group. Lower initial language development was constructed by identifying pupils scoring in the bottom quartile of the age-standardised BPVS-3 assessment at baseline. A binary indicator was constructed to define low language achievers as those who scored below the threshold—a score of 81 or below.

The regression output for this model can be found in Table 47 in Appendix F. The interaction term coefficient for lower initial language development and the treatment group is -0.145, with a p-value of 0.888. This suggests that Hanen LLLI did not have a differential impact on pupils in the treatment group based on pupils' initial language development level. An additional model was then run only including the subsample of pupils in the lower quartile of the age-standardised

BPVS-3 score at baseline (n=429). This model showed an effect size very similar to the primary analysis for the whole sample (0.05 with CIs of -0.14 and 0.24) indicating that there was no difference in the effect of the intervention for children with lower initial language development. The full findings are presented in Table 50 and Table 51 in Appendix F.

**Additional analyses and robustness checks**

The analysis of the BPVS-3 score was re-run using the BPVS-3 raw scores. The purpose of this additional analysis is to act as a robustness check. The distribution of the standardised scores at baseline and endline show a large proportion of children coded as the floor value of 69. This could have an effect on the impact that was found in Table 19 and Table 20 if there were any movement within this lower group. To address this, the primary analysis was repeated using the raw scores instead of the standardised scores.

Figure 8 shows the distribution of the BPVS-3 raw score at baseline and Figure 9 shows the raw score distribution at endline. There is not a floor effect with these distributions in the same way as there is with the standardised scores (see Figure 3 and Figure 4). The baseline raw score is fairly normally distributed, and the endline score has a slight positive skew. This may be due to the young age of the children taking part, meaning that there is a ceiling effect for some of the higher scores. The range of possible raw BPVS-3 scores is between 0 and 168.

*Figure 8: Distribution of raw BPVS-3 score at baseline*

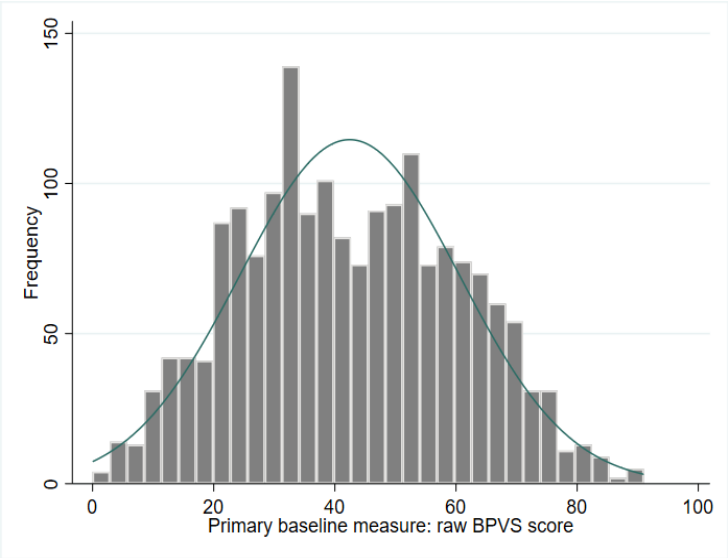



*Figure 9: Distribution of raw BPVS-3 score at endline*

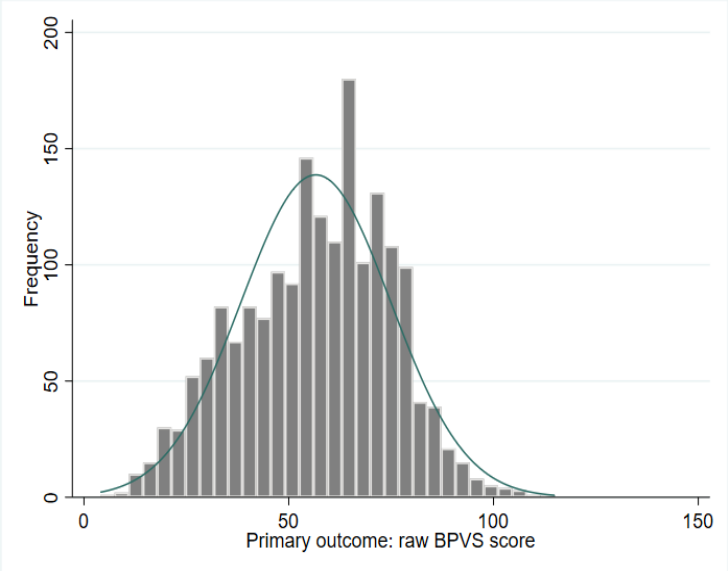


*Table 29: Primary analysis results using BPVS-3 raw scores*

| | | | Treatment group | | Control group | | | |
|---|---|---|---|---|---|---|---|---|
| Outcome | Unadjusted differences in means | Adjusted differences in means | n (missing) | Variance of outcome | n (missing) | Variance of outcome | Pooled variance | Population variance (if applicable) |
| Raw BPVS-3 score | 1.76 | 0.58 | 944 (160) | 324.36 | 886 (109) | 341.62 | 332.71 | N/A |

*N/A, not applicable.*

In the multilevel model that accounted for the raw BPVS-3 pre-test, the stratification region-setting type variable and the clustering of pupils in settings, the adjusted difference in means is equal to 0.58, with a p-value of 0.403 (Table 29 and Table 30). The effect size for the adjusted difference in raw BPVS-3 scores is 0.03, similar to the effect size for the adjusted difference in standardised BPVS-3 scores of 0.05. This suggests that the process of standardising the scores resulting in a large floor value among this population was not covering a possible effect in the lower ends of the distribution.

*Table 30: Effect sizes using BPVS-3 raw scores*

| | Unadjusted means | | | | Effect size | | |
|---|---|---|---|---|---|---|---|
| | Treatment group | | Control group | | | | |
| Outcome | n (missing) | Mean (95% CI) | n (missing) | Mean (95% CI) | Total n (intervention; control) | Hedges' g (95% CI) | p-value |
| Raw BPVS-3 score | 944 (160) | 57.48 (56.33, 58.63) | 886 (109) | 55.72 (54.5, 56.94) | 1,830 (944; 886) | 0.03 (-0.06, 0.12) | 0.403 |

**Estimation of ICC**

ICC was estimated using a two-level multilevel model of BPVS-3 scores without any covariates (the empty model) and a model containing strata and baseline BPVS-3 score as per equation 1. The post-intervention ICCs were estimated from endline BPVS-3 data from both control and treatment settings. The ICC for within settings is 0.165 when calculated with no adjustments (the empty model) (Table 31). When controlling for covariates accounting for the clustering of pupils in settings using the same model as equation 1 (primary analysis model), the within setting ICC for the primary outcome is 0.074.

*Table 31: ICC of outcomes of interest*

| Measure | ICC (empty model) |
|---|---|
| BPVS-3 | 0.165 |
| RAPT: Information | 0.238 |
| RAPT: Grammar | 0.171 |
| SDQ-T | 0.211 |

# IPE results

This chapter describes the results from the IPE, discussing each dimension in turn. The findings draw on the wide range of IPE data collection approaches, including observations, interviews, and surveys (see Methods section). The IPE findings address the following process evaluation research questions, in addition to seeking to provide explanations for the results of the impact evaluation:

1. How is Hanen LLLI delivered, and what are the facilitators and barriers to delivery in maintained nurseries and PVIs?
2. What are the perceived benefits of Hanen LLLI for EY staff, nurseries, and children?
3. Is there evidence that Hanen LLLI leads to changes in staff practice? How can we better support staff, and assist towards an effective cascading of knowledge?
4. What can be learned for future delivery of Hanen LLLI?
5. What is the cost per pupil to deliver the Hanen LLLI?

## Fidelity

This section explores implementation fidelity or the extent to which Hanen LLLI was delivered as intended. It includes how much of the intervention was delivered (dosage), the extent to which delivery adhered to the intended model (adherence), and adaptations made to delivery (adaptation). The core activities for the programme were pre- and post-programme visits, workshops, and video feedback sessions. Optional activities included introductory workshops, cascading of learning, use of resources, and informal networking. The section starts by describing the dosage for each element, and then describes adherence and adaptation for each programme activity in turn. Changes to programme delivery are discussed in the context of Hanen LLLI guidance.

In general, the dosage of programme activities delivered by Program Leaders was in line with the delivery plan. Program Leaders closely adhered to the delivery plan for Hanen LLLI workshops and video feedback sessions, with most adaptations being made in response to timing constraints. There was also evidence that practitioners had engaged with all planned intervention activities to some extent, although most of these were optional and therefore did not impact fidelity.

**Dosage**

*Pre- and post-programme visits*
Visits were conducted by Program Leaders to all 65 treatment settings before and after the Hanen LLLI programme. These visits were intended to be carried out in person, however two visits were completed online due to Program Leader illness.

*Introductory workshop*
Program Leaders delivered virtual introductory workshops to Hanen LLLI-trained practitioners in all 17 programme areas.

*Workshops*
Program Leaders delivered all eight workshops in all programme areas, in line with expectations. In total, 136 workshops were delivered for the 17 groups of practitioners. Workshops were intended to last two and a half hours. Data from workshop observations and practitioner interviews indicated that workshops generally finished on time. Due to the large amount of content each workshop covered (see ‘Quality’ section below), some sections of workshops were shortened or skipped (see ‘Adherence’ section below). Workshops 1, 2, 5, 6, and 8 were delivered in person, while Workshops 3, 4, and 7 were conducted online, as intended.

*Video feedback sessions*
Program Leaders delivered all six video feedback sessions to practitioners, as intended. One video feedback session was not delivered to one group of practitioners, due to practitioner availability. We do not have any further information on why practitioners in this group were unable to take part in this session. Video feedback sessions were intended to last between 30 and 40 minutes. Practitioners reported that sessions varied from 30 to 45 minutes.

*Cascading support sessions*

The delivery plan included virtual cascading drop-in sessions where practitioners had the opportunity to ask questions about their plans to cascade learning to non-trained staff. Program Leaders delivered a total of six sessions.

**Adherence and adaptation**

This section describes the extent to which Hanen LLLI was delivered as intended and the adaptations made to delivery. It covers both Program Leaders' adherence to the intended delivery of the programme (workshops, video feedback sessions, and pre- and post-programme visits), and Hanen LLLI-trained practitioners' adherence to participant-level activities (preparation for video feedback sessions, cascading learning, engagement with resources, and informal networking).

*Pre- and post-programme visits*

Program Leaders conducted pre- and post-programme visits to treatment settings, as intended. Pre-programme visits involved meeting staff at the setting to discuss upcoming activities, share the programme timetable, and answer questions. They also met with managers or senior leadership staff members to discuss expectations of how they would support practitioners and the plans for cascading. Post-programme visits involved reminding staff about the resources that were available and discussing plans to continue cascading learning and implementing the strategies with the cohort of children starting in the next academic year.

Program Leaders received a pre-delivery setting checklist with the aims of the session and a list of discussion points to cover in each visit. Program Leaders made notes about their discussions with nursery staff. Representatives from Communicate SLT CIC reported that these notes demonstrated that Program Leaders had followed the guidance and delivered the sessions as intended (this was not discussed in interviews with Program Leaders or practitioners).

*Introductory workshops*[21]

Program Leaders delivered an introductory workshop in all programme areas to outline the logistics of the intervention (e.g. the location of venues), the rationale for the video feedback sessions, and the research underpinning the programme. The Hanen Centre does not require introductory workshops to take place, and they only provided broad topics to cover. A representative from Communicate SLT CIC reported that Program Leaders followed this guidance. The only adaptation made was to change the logistical details based on the particular programme area.

> *There's no expectation from Hanen itself that you have to run these. It is suggested because it does help with buy-in of practitioners and problem solving and you can answer any concerns about how things are going to work as well. (Representative from Communicate SLT* CIC*)*

*Workshops*

Adherence to workshop delivery was assessed through interviews with Program Leaders and observation data. These were compared with written guidance from The Hanen Centre about intended delivery. In interviews, Program Leaders explained that they were trained to follow Hanen guidance around workshop delivery closely. This guidance was in the form of a checklist, which covered planning and organisation, familiarity with session content, application of the 4P teaching-learning cycle, strategies to engage participants, delivery of group activities, clarity of instructions, and time management. Program Leaders were also provided with a script to follow for each workshop.

Overall, Program Leaders demonstrated efforts to follow guidance closely and only made adaptations to content, format, and timings where necessary. A number of these adaptations were explicitly permitted in The Hanen Centre guidance.

<u>Planning and organisation of workshops</u>

Observation data revealed that Program Leaders were well-prepared for workshops. Seating was set up in advance of practitioners arriving for in-person workshops, in the arrangement specified. For online workshops, the presentations began on time and Program Leaders were prepared.

<u>Delivery format and script</u>

Observations showed that Program Leaders followed their script closely, covering all of the recommended information. In interviews, Program Leaders said they were very conscious of following the script faithfully, and would only deviate from it in terms of minor changes to the language used. One Program Leader said that they were particularly intentional

[21] The Hanen Centre guidance refers to orientation workshops. These were renamed to fit the British context.

about following the script because they were delivering the workshops as part of a research trial, and that this would not be their normal style of delivery. In line with the guidance, Program Leaders also shared some personal anecdotes and examples from their own work to help illustrate points, although the number of examples given varied between Program Leaders.

Program Leaders were encouraged to adjust the content of workshops to meet the learning needs of participants, or the language level of the children they work with. Program Leaders reported that they were able to select The Hanen Centre videos that were relevant to the group of participants, for example, showing a video of a teacher interacting with children with SEND if that is a group that a lot of the practitioners work with. However, we did not observe this content being used and one view among practitioners was that children with SEND had not been covered in the programme training—discussed in 'Perceived benefits' section below).

> *You can cherry-pick those optional videos depending on your cohort that you're delivering to.*
> (Program Leader 1, Paired interviews with Program Leaders)

Guidance also recommended that Program Leaders adapt the content of the session to the different skill levels of participants, although there was no clear evidence of this from workshop observations. In interviews, practitioners did indicate that there were differing skill levels and experience within groups. Therefore, the absence of tailoring may have been a result of conflict with the requirement to follow the script very closely, which appeared to be a key objective for Program Leaders. Program Leaders may therefore, benefit from more guidance around how, and when, to effectively adapt content to different skill levels (see also 'Suggestions for improvement' in the 'Quality' section below).

<u>Application of 4P teaching-learning cycle</u>
The 4P teaching-learning cycle sets out four key learning objectives that each workshop must cover: Prepare; Present; Practice; and Personalise. Program Leaders naturally followed the 4P cycle as sections of the presentation fell under this structure. However, in some workshop observations, researchers noted that Practice or Personalise activities were skipped or shortened due to session timings, which impacted adherence to intended delivery. For example, practitioners reported that Personalise sections, where they were given time to complete their action plans, were sometimes not long enough to complete their plans and that Program Leaders increased the time for this as the workshops progressed. It was not clear whether this change was made due to practitioner feedback and whether this impacted other sections of the workshops, nor whether the time initially allowed for this activity was in line with the plan.

*Use of questions to actively involve participants*
Program Leaders broadly followed the guidance around the use of questions during discussions with practitioners, which stated that they should listen carefully to practitioners' answers, give suggestions, and build on their answers rather than posing further questions to get to the 'right answer'. Program Leaders were advised to use open questions to elicit discussion throughout, and while this was largely observed, some instances of closed questions being used were noted.

<u>Encouraging participation and interaction throughout the session</u>
The Hanen Centre provides guidance around how to engage quieter practitioners to participate in discussion without putting them on the spot. In some workshops, researchers observed that there were few contributions from practitioners after a Program Leader asked a question or raised a discussion point. Program Leaders took different approaches to dealing with this; one approach was to answer the question themselves if there was no response. Another approach involved asking each practitioner (or a pair of practitioners if sharing a device) to answer in turn. Neither of these approaches completely adhered to the recommendation to draw quieter participants into discussions; however, this may have been difficult in practice, particularly given the number of discussion exercises within each workshop.

<u>Time management</u>
Guidance around time management prioritised finishing on time over covering every element of the workshop and recommends Program Leaders adjust the timing of activities accordingly. Observation data showed that Program Leaders invariably finished on time, and did make changes to the recommended activity duration to achieve this. Practitioners gave feedback in interviews that some of the sessions felt rushed and could have benefited from more explanation (see 'Quality' section below); however, it is not clear if this was a result of content being reduced or cut due to timing constraints.

In interviews, Program Leaders described the process for making pre-planned adaptations to the content of the workshops. Program Leaders met with the Program Leader supervisor before each workshop and jointly decided, which activities and videos should be prioritised in case there was not enough time to cover all content. Where further

adaptations were needed due to timings or group discussions, Program Leaders used their professional judgement to make these decisions reactively during the sessions.

Where a Program Leader had a suggestion for adding a relevant detail that was not included in the script, they would raise this in the team meetings, which preceded each workshop. The Program Leader supervisor then ensured the whole team of Program Leaders were aware of the change and implemented it consistently. For example, one Program Leader suggested including information about the Early Childhood Environment Rating Scale, which they thought would be helpful for practitioners.

*Video feedback sessions*

No observations of video feedback sessions were conducted as the presence of a researcher could disrupt the one to one reflection process. The findings below are from interviews with Program Leaders and practitioners.

Due to the lack of observation data, it is difficult to determine adherence to guidance. In general, there appeared to be more variation between Program Leaders in delivery style in video feedback sessions compared to workshops; however, they appeared to meet the aims of the video feedback sessions consistently.

Delivery of video feedback sessions

Practitioners' accounts of video feedback sessions suggest Program Leaders followed guidance for the sessions closely. Before watching the videos, Program Leaders and practitioners discussed the action plan and the children selected to take part in the activity, and practitioners were asked to reflect on how the activity had gone. However, the process for watching the video differed, as Program Leaders either asked for reflections after watching the whole video, or paused the video to discuss smaller sections and point out use of strategies. Both of these strategies were acceptable according to guidance from The Hanen Centre, however practitioners preferred to watch smaller sections of the videos (see 'Quality' section below).

Approach to feedback

Program Leaders explained that their role in video feedback sessions was to act as a coach and mentor, facilitating practitioners' reflections on their own practice, rather than criticising or telling them what they needed to change. This followed The Hanen Centre guidance to focus on 'asking rather than telling' and encourage practitioners' self-evaluation.

> *I'm not here to criticise you. It's not my job to pick apart what you do and tell you—you should do this, and you shouldn't do that. My job is to help you reflect and think of ideas for yourself. I don't think people always hear that, not everyone hears that the first time. (*Program Leader 3, Paired interviews with Program Leaders)

Practitioners described Program Leaders' approach to feedback as non-judgemental and positive. There was a desire among practitioners for more constructive feedback and to be told what they could improve on rather than just asking them to reflect on the video (see 'Quality' section below). However, this contradicts The Hanen Centre guidance, so it may be beneficial for Program Leaders to set expectations more clearly at the start of the programme to prime practitioners about the role of the Program Leader in the reflection exercise.

Preparation for video feedback sessions

The main preparation required of practitioners for video feedback sessions was recording and uploading their videos. Generally, practitioners uploaded their videos by the agreed deadline, however Program Leaders occasionally had to contact practitioners to remind them to do so.

When planning videos, practitioners followed the guidance from Program Leaders about the types of children they should select to take part, for example, pairing a quiet child with a more confident communicator. Where practitioners had not initially followed their action plan closely, they reported that this had made conversations during the video feedback sessions more complicated as they were asked about their action plan throughout, which led them to follow the action plan more closely.

Action plans were consistently used to plan the activities with children. However, practitioners mentioned that they would often deviate from the action plan. Reasons for this included the children being absent on the day of the activity and interruptions caused by other children joining the activity. These deviations led to practitioners having to choose a different activity to suit the language level and interests of all the children.

> *You can set off with the most amazing plan, and then along comes your little group, and then somebody else sidles in, and then the whole thing goes off on a tangent.* (Practitioner 1, Online site visit interviews, maintained setting)

Practitioners tended to record videos at times when the nursery was quieter, for example, in the afternoon when there were fewer children or during snack time when there was not a lot of activity in the background.

*Resources*

A number of resources were available to practitioners to support their learning. Although they were encouraged to use the resources, there was no obligation to do so.

Practitioners were aware of the different resources available to them and generally had accessed each resource at least once. Practitioners were familiar with the online platform 'Padlet', and those who had accessed it felt it was a useful resource (Padlet, 2024). Of the 57 practitioners who completed the online survey, 82% had accessed Padlet for online resources: 37% had accessed Padlet once or twice; 33% had accessed it three to six times; and 12% had accessed it seven or more times. Only 16% of practitioners had not accessed Padlet at all during the course of the programme. The survey also asked how frequently practitioners had accessed Padlet for socialising or online messaging. This was less common: 33% reported using Padlet for this reason at least once, whereas 65% had not done this at all during the course of the programme. Frequency of accessing The Hanen Centre website resources showed a similar pattern: 40% of practitioners had accessed The Hanen Centre resources once or twice; 30% had accessed it three to six times; and 9% had accessed it seven or more times. One in five (19%) had not accessed The Hanen Centre resources at all during the course of the programme.

Time was often cited as a barrier to accessing the online resources, however, there were also differences in attitudes to using resources. One view expressed by practitioners was that although they had not had the time, they felt that Padlet was something they should be engaging with. A contrasting view among practitioners was that they did not need to look at Padlet as the workshops and workbook were enough, or just preferred to use physical resources rather than online resources.

*Cascading*

Cascading learning to non-trained staff is an activity in the logic model, however it was not mandatory. Conversations about cascading between Program Leaders and practitioners were intended to take place as a regular feature of video feedback sessions. As no sessions were observed, it was unclear whether these conversations took place. Guidance for introductory workshops included asking practitioners to choose a 'buddy' within their team who they would cascade learning to; however, survey findings suggest this was not widely adopted (see 'Informal cascading' section below).

A recurring theme in interviews was practitioners describing cascading that they had undertaken within their setting or planned to do within the academic year. Interviewers asked practitioners about both formal cascading, namely, scheduled sessions where they presented what they had learned to other staff, and informal cascading, namely, any training or discussion with staff on an *ad hoc* basis. The trained-practitioner survey asked whether practitioners had completed any of the following cascading activities: formal conversations with staff; informal conversations with staff; meetings with senior management; modelling interactions to other staff; sharing resources; and partnering with a Hanen 'buddy'. Of the 57 practitioners who completed the survey, 56% identified at least three cascading activities they had completed during the course of the programme.

Practitioners were also asked, which of the seven Hanen LLLI strategies they shared with non-Hanen trained practitioners at their setting. Around 47% of practitioners identified at least five strategies that they had cascaded to colleagues. The most cascaded strategy was OWLing,[22] which was cascaded by 86% of practitioners. The least cascaded strategies were Extend the Topic,[23] and Foster Peer Interaction,[24] which 56% of practitioners reported having shared with colleagues. The data is presented in full in Appendix H in the 'Further Appendices' document. For a discussion of the facilitators and barriers to achieving cascading within settings see 'Cascading' section in 'Responsiveness' section below.

[22] Observe, Wait, Listen (OWL): Observing what children are communicating, Waiting for them to initiate conversation, and Listening to what they say without interruption.
[23] Extend the Topic: using comments and questions to expand on what children say by adding new ideas.
[24] Foster Peer Interaction: encouraging children to interact with peers by planning appropriate groupings, providing materials and activities that encourage interaction, and supporting interactions.

Formal cascading

Practitioners described a range of different formal cascading sessions, which often took place within existing staff meetings. Of the 57 trained practitioners who completed the survey, 54% reported having formal conversations with colleagues, for example, at a scheduled meeting. The time dedicated to cascading within these meetings, and the frequency of meetings, varied considerably. In some settings, whole-team meetings were dedicated to sharing learning from Hanen LLLI, lasting up to one hour. These sessions tended to be more intensive (i.e. covering more content) and less frequent. In other settings, learning from Hanen LLLI was a regular meeting agenda item, and trained practitioners would feed back for a few minutes at each meeting. For example, one practitioner described plans to cover a different strategy in staff meetings held every two weeks. Staff in other settings planned longer, one-off cascading sessions during staff training days or inset days when the nursery was closed. Staff described two- to three-hour or half-day sessions, often to all staff at the setting, where they were able to give more in-depth training on strategies. Other descriptions of formal cascading included discussions during staff planning time, after the children had gone home.

Frequency of regular staff meetings within settings varied considerably, with some having meetings every week and others once a month or more infrequently. This appeared to impact the opportunities staff had to share learning.

Meetings were often attended by all EY staff at the setting, including Reception teachers. There was an understanding that Hanen strategies would also be useful for staff to implement with children of different ages. In some settings there was a wider audience for cascading meetings: one participant described a meeting which was attended by support staff, a governor, and the deputy head.

Informal cascading

Informal cascading also took a number of forms. These interactions tended to be more discussion-based and use modelling and feedback rather than using resources. Trained practitioners described having informal discussions with non-trained staff about what they had learned, conveying the key messages. This generally occurred when staff had a few minutes free during the day, for example, in the morning or at lunch. Of the 57 trained practitioners who completed the survey, 74% reported having informal conversations with colleagues.

Another avenue for informal cascading was through staff observations. This involved trained staff modelling the strategies for non-trained staff when interacting with the children. An alternative approach was implementing peer-to-peer feedback, which involved non-trained staff trying out the strategies themselves and receiving feedback from trained staff. Observations and modelling were reported less frequently in the survey; 49% of practitioners reported modelling interactions to colleagues. Only 7% reported partnering with a Hanen ‘buddy’, despite this being one of the few suggestions for cascading provided by The Hanen Centre. It is unclear whether practitioners who partnered with a buddy did so because this was suggested by Program Leaders or if this was an independent approach that their setting took to cascade learning.

> *They're very good at just dropping little pearls of wisdom [chuckles] every now and then. If I'm randomly talking to a child, they'll sometimes just watch and listen and then they'll be able to tell us how it is.* (Nursery manager 1, Ongoing delivery interviews, PVI setting)

Some participants attending training had a mentor role within their setting for a less experienced member of staff (independent of Hanen LLLI) and would feed Hanen strategies into those interactions.

A less common approach referred to by practitioners was plans for non-trained staff to record videos of themselves interacting with children to reflect on their use of techniques, in a similar way to the video feedback sessions. Program Leaders had provided support to staff to do this, however this was not a suggested cascading strategy. One view Program Leaders expressed in interviews was that practitioners were not sufficiently trained to be able to provide effective feedback.

Sharing learning with parents was also part of plans for cascading in some settings. Examples of this included informal conversations with parents and plans to run a workshop with parents, although it was not clear if this was intended to equip parents to use strategies themselves, or to update parents on changes to nursery practice.

Settings with no plans to cascade learning

Of the 57 trained practitioners who completed the survey, only 4% reported having not completed any cascading activity with colleagues. However, it is possible that those who were less engaged with the programme were less likely to have

completed the survey, so this number may not be representative of cascading in practice. Where practitioners reported no concrete plans to cascade learning, reasons for this included:

- **no staff to cascade learning to:** where all nursery staff were attending training, there were no current training needs. However, practitioners reported plans to cascade as and when new staff were recruited;
- **competition with other all-staff training needs:** for example, one school had recently organised a number of other all-staff training sessions, so it would be difficult to secure another timeslot to deliver a session on Hanen LLLI; and
- **infrequent opportunities for staff to meet** practitioners described difficulties finding a time for a cascading session due to infrequent staff meetings and low staff availability after school or at lunchtimes.

*Engaging with the LLLI community*
Practitioners were positive about the interactions they had had with practitioners from other settings in the workshops (see 'Quality' section below). However, they had not sought opportunities to engage with others outside of the workshops. They expressed a willingness to visit other settings to see how they approach interactions with children differently and share ideas, although this had not been mentioned or encouraged by Program Leaders. This is discussed further in the section 'Engaging with LLLI community' in 'Perceived benefits' section below.

## Reach

This section explores the rate and scope of practitioners' participation in mandatory and optional Hanen LLLI activities as a part of the training. Compliance at the setting level is not discussed here—see 'Analysis in the presence of non-compliance' section in 'Impact evaluation results' section above.

Communicate SLT CIC gathered attendance data for mandatory and optional sessions. Mandatory sessions for practitioners included:

- one introductory workshop;
- eight workshops; and
- six video feedback sessions.

Mandatory sessions for settings included:

- one pre-programme setting visit; and
- one post-programme setting visit.

Optional activities for settings covered:

- initial information session for settings;
- one pre-intervention baseline video;
- one post-intervention endline video; and
- two drop-in cascading support sessions.

In total, 148 practitioners attended at least one mandatory session of one activity (i.e. introductory workshop, workshops, or video feedback sessions) in the delivery period (2022/2023).[25] Attendance data shows that of those 148 practitioners, 98 practitioners were from maintained settings and 50 practitioners were from PVI settings.

[25] A total of 158 practitioners signed up to take part in the programme in 2022/2023, but ten of them did not participate in any Hanen LLLI activities and are not included in the figures presented in this section. This was because some settings sent additional practitioners to an initial information session and then reduced the number of practitioners that they would be sending for the Hanen LLLI training.

Between Workshops 1 and 8, 13 practitioners withdrew from the training. This was either because their nursery dropped out of the programme or for individual reasons, including staff shortages within the nursery, leaving the nursery, maternity leave, and long-term sick leave.

**Mandatory activities**

The mandatory activities for Hanen LLLI included the introductory workshop, eight workshops, and six video feedback sessions for the practitioners. Additionally, each setting needed to participate in a pre-intervention setting visit and a post-programme setting visit.

*Introductory workshop*
The mandatory elements of Hanen LLLI began with an introductory workshop. Almost all practitioners (n=147) attended this event. This included a small number (n=5) who attended a catch-up version, either one on one with a Program Leader or in a small group. Around 12 practitioners attended a programme that was held for a different geographical location than their own, but this was easily accommodated since the introductory workshops were held online.

*Workshops*
Practitioners were required to attend at least six out of the eight training workshops (see compliance criteria in Table 10) in order to satisfy the requirements of the Hanen LLLI training programme and receive an end of programme certificate (provided they also attended at least four video feedback sessions). Workshops 1, 2, and 5 were deemed as 'essential' (i.e. if an essential workshop was missed then they would not receive the certificate even if they met the other minimum requirements).

The first workshop was attended by 148 practitioners (see Table 32). Of these, 98 were practitioners from maintained settings and 50 were practitioners from PVI settings. Basing attendance figures on the number of participants in the programme at the time of each workshop, once all eight workshops were completed, the overall attendance rate for workshop sessions was 96%. The three 'essential' workshops (Workshops 1, 2, and 5) had an attendance rate of 100%. A total of 13 practitioners withdrew between Workshop 1 and 8.

*Table 32: Attendance per workshop*

| Workshop sessions | Number of attendees | Setting type: | | Total possible attendees* | %[26] |
|---|---|---|---|---|---|
| | | Maintained | PVI | | |
| Workshop 1 | 148 | *98* | *50* | 148 | 100 |
| Workshop 2 | 148 | *98* | *50* | 148 | 100 |
| Workshop 3 | 142 | *94* | *48* | 146 | 97 |
| Workshop 4 | 133 | *90* | *43* | 144 | 92 |
| Workshop 5 | 136 | *93* | *43* | 136 | 100 |
| Workshop 6 | 123 | *86* | *37* | 136 | 90 |
| Workshop 7 | 133 | *91* | *42* | 135 | 99 |
| Workshop 8 | 124 | *89* | *35* | 135 | 92 |
| **Overall attendance** | | | | | **96** |

*Source: Attendance monitoring data.*
**Total participants in the programme at the time of the workshop being conducted.*

Across the delivery period, 133 (90%) practitioners attended at least six out of the eight workshops (the minimum requirement to receive a certificate) (Table 33). Out of these 133 practitioners, 90 practitioners were from maintained settings and 43 practitioners were from PVI settings. In total, 123 practitioners (83%) attended all eight workshops (see Table 33).

[26] Percentages are based on the total number of participants that were involved in the programme at the time of the session (after withdrawals), rather than on the initial number of programme participants.

*Table 33: Total number of workshops practitioners attended*

| Number of workshops attended | Number of practitioners | Practitioners % |
|---|---|---|
| One or more | 148 | 100 |
| Two or more | 148 | 100 |
| three or more | 142 | 96 |
| Four or more | 136 | 92 |
| Five or more | 133 | 90 |
| Six or more | 133 | 90 |
| Seven or more | 124 | 84 |
| Eight or more | 123 | 83 |

*Source: Attendance monitoring data.*
*Base=148.*

*Pre-intervention setting visit*

Pre-intervention baseline setting visits were completed by all 67 treatment nurseries who were involved at baseline. At least one member of staff involved in the Hanen training was present for the pre-intervention setting visit with the Program Leaders.

*Video feedback sessions*

The Hanen LLLI programme includes a total of six video feedback sessions conducted online. Practitioners were expected to attend at least four video feedback sessions in order to receive an end of programme certificate. A total of 138 (93%) practitioners attended the first video feedback session; 90 of these practitioners were from maintained settings and 48 of these practitioners were from PVI settings (Table 34). Around 13 practitioners withdrew from the programme between video feedback sessions 1 and 6 (same as the workshops). Overall, basing attendance figures on the number of participants in the programme at the time of each session, the overall attendance rate at video feedback sessions was 92% (see Table 34).

*Table 34: Attendance per video feedback session*

| Video feedback sessions | Number of attendees | Setting type: | | Total possible attendees* | %[27] |
|---|---|---|---|---|---|
| | | Maintained | PVI | | |
| Video feedback session 1 | 138 | *90* | *48* | 148 | 93 |
| Video feedback session 2 | 137 | *92* | *45* | 145 | 94 |
| Video feedback session 3 | 133 | *92* | *41* | 140 | 95 |
| Video feedback session 4 | 124 | *85* | *39* | 136 | 91 |
| Video feedback session 5 | 123 | *89* | *34* | 135 | 91 |
| Video feedback session 6 | 118 | *86* | *32* | 135 | 87 |
| **Overall attendance** | | | | | **92** |

*Source: Attendance monitoring data.*
**Total participants in the programme at the time of the video feedback session being conducted.*

Of those who took part in training, 124 (84%) practitioners attended at least four video feedback sessions over the delivery period (the minimum number to receive a certificate), comprising 85 practitioners from maintained settings and 39 practitioners from PVI settings. In total, 118 (80%) practitioners attended all six video feedback sessions (see Table 35).

*Table 35: Total number of video feedback sessions practitioners attended*

| Number of video feedback sessions attended | Number of practitioners | Practitioners % |
|---|---|---|
| One or more | 138 | 93 |
| Two or more | 137 | 93 |
| Three or more | 133 | 90 |
| Four or more | 124 | 84 |
| Five or more | 123 | 83 |
| Six or more | 118 | 80 |

*Source: Attendance monitoring data.*
*Base=148.*

[27] Percentages are based on the total number of participants that were involved in the programme at the time of the session (after withdrawals), rather than the initial number of programme participants.

*Post-programme setting visit*

Post-programme setting visits were completed by all 65 treatment nurseries who were involved at endline. Two nurseries that were involved in the pre-programme setting visit were not covered at this stage because they dropped out of the programme. This was due to staff shortages and a nursery shutting down. At least one member of staff involved in the Hanen training was present for the post-intervention setting visit with the Program Leaders at all 65 treatment nurseries.

*Overall attendance*

To satisfy the requirements of the course and receive an end of programme certificate, practitioners were required to attend at least six workshops in total, and at least four video feedback sessions. Of 148 practitioners who took part in at least one mandatory Hanen LLLI activity over the course of the delivery period, 124 practitioners (84%) met the video feedback session requirement (shown in Table 35 above).[28] Practitioners were also required to attend the three 'essential' workshops—Workshops 1, 2, and 5. Attendance data presented above showed that these workshops had 100% attendance.

**Optional activities**

Optional activities for settings included the initial information session for settings, a pre-intervention baseline video, and a post-intervention endline video. Program Leaders also organised two drop-in cascading support sessions during the delivery period.

*Initial information session for settings*

Communicate SLT CIC did not gather data on whether practitioners attended the initial information session for settings. This session was meant to help the settings gain more understanding of the Hanen LLLI training and its delivery plan.

*Pre- and post-intervention videos*

At the start of the evaluation, all settings were asked to complete a pre-intervention video; 133 settings submitted one. Settings were informed of their randomisation allocation into the treatment or control group after they had submitted their videos. At endline, settings were asked to complete a post-intervention video in order to provide a comparison with videos uploaded at baseline. Only those settings that had uploaded a video at baseline were contacted for this. In total, 97 settings (73% of the 133 settings for which we received a baseline video) submitted a post-intervention video: 49 settings in the 'business as usual' control group; 46 settings in the Hanen LLLI treatment group; and 2 settings that were treatment non-complier settings.

*Drop-in cascading support sessions*

Program Leaders organised two cascading support drop-in sessions between March 2023 to June 2023 to give trained practitioners an opportunity to clarify any queries around cascading at their settings. Communicate SLT CIC did not gather data on whether practitioners attended the cascading support sessions as they were viewed as an informal tool to facilitate more discussion on cascading at settings.

## Responsiveness

Responsiveness is defined in this evaluation as the extent to which participants (EY practitioners and managers) engage with the intervention delivered by Communicate SLT CIC. As discussed elsewhere in this report, compliance with the intervention was high and attendance was broadly maintained throughout the delivery period. Within responsiveness, findings on quality are presented.

Findings on responsiveness are presented about how participants engaged with the Hanen LLLI trial, which elements of the intervention delivery were particularly engaging to participants, and factors (intrinsic to the intervention and contextual) that helped or hindered engagement.

Data on responsiveness were gathered through interviews with trained practitioners and managers at treatment settings, through observations of online and in-person workshops, and through surveys administered to practitioners at control and treatment settings.

[28] In fact, certificates were given to 139 practitioners, according to Communicate SLT CIC.

The section first explores reasons given by treatment and control participants for wanting to sign up and take part in Hanen LLLI, and the reactions to not taking part from those in the control group.

It also explores what practitioners enjoyed and found engaging about the workshops and video feedback sessions. In the workshops, for example, the content and the delivery, as well as what allowed them to take part and engage in the workshops. In the video feedback sessions, for example, being given time to prepare and completing the training with others. This section also covers what practitioners found less engaging about the workshops and video feedback sessions, for example, less interesting topics and formats, and what challenges they faced when taking part, such as the strain on resources and technical issues with online participation.

**Signing up to Hanen LLLI**

In total, 167 nurseries signed up to take part in the Hanen LLLI trial. This slightly exceeded expectations for the required setting sample size for the trial.

This section outlines the reasons given by both treatment and control setting staff for signing up for the intervention, and the reactions from control setting staff to not being able to take part and receive the intervention. The findings show that Hanen LLLI was attractive to nursery practitioners as providing an opportunity to develop their practice to better support the children in their settings. Hanen LLLI had an existing positive reputation and the delivery approach appealed.

*Reasons for taking part*
Reasons given by practitioners and managers for signing up to the intervention were often aligned with perceived benefits to the setting, the development of staff and to the pupils, or on positive previous experiences with or perceptions of Hanen interventions. Many of the reasons discussed were present across control and treatment groups.

Alignment with current practice and organisational values
One key consideration by nurseries, when signing up to Hanen LLLI, was the extent to which the programme would align with the way they already work, and the values they held as an organisation. In interviews with practitioners and nursery managers, respondents identified alignment with their practice and values and Hanen LLLI in the following ways: an opportunity for staff development; short-term goals for the setting; and an alignment of a wider ethos.

First, Hanen LLLI was viewed as an opportunity by setting managers for staff to receive training and CPD, which was valued within settings. It was particularly valued by those who felt that a wider breadth of knowledge and strategies would help to understand, which strategies could work for individual children.

Second, it was also recognised by managers that the Hanen LLLI training programme and strategies aligned with short-term goals within settings. For example, having a year-long focus in the nursery on spoken language or a more general drive for supporting language and communication development, with one nursery manager saying they are:

> *Always looking for things that will support us on our journey with communication and language.* (Nursery manager 2, Early implementation interviews, maintained setting)

Finally, practitioners and managers saw alignment between Hanen LLLI and wider ethos of working within play and provision towards language and communication development. It also meant that they could feel confident that taking part would be possible for practitioners and beneficial for children, as one practitioner stated:

> *It wasn't miles apart from what we do. We could see it being achievable. We know that […] the children make progress that way.* (Nursery manager 3, Early implementation interviews, maintained setting)

Responding to children's needs
The two standout contextual reasons in the interview data for settings wanting to take part were the effects of the Covid-19 pandemic on development in children, and the awareness that they were positioned in deprived areas.

Interview respondents reported that in the previous few years, more children are struggling with language and communication development due to the lack of socialisation at a key stage of development. This was largely attributed to the restrictions during the height of the pandemic. This was echoed as an important reason for signing up.

Being a nursery in a deprived area was also a consideration, with some respondents wanting to take part because of this. These views were shared by practitioners and managers in both maintained and PVI settings. For example, there was an understanding that the programme would be a good opportunity not only for the staff but a chance to pass the learning on to parents so they can use the strategies at home. The home learning environment was considered to be important in children's language development.

> *I think we were aware of the area and the, with it being a deprived area, that the lack of input from some families with their children, but it just became more apparent after the pandemic that it was something that we probably needed to have a bit more structure to.* (Nursery manager 4, Early implementation interviews, maintained setting)

Opportunity to develop practice

The desire to learn from joining Hanen LLLI was also a motivation for signing up. Practitioners and managers wanted to explore new strategies, because they knew that all children are different and need a range of strategies to effectively support them. As an example, a setting manager had been receiving the Hanen newsletter and picked up other useful strategies there, so participating in the trial was viewed as an opportunity to deepen their knowledge.

Other practitioners wanted to build on their existing knowledge and develop their practice. This included developing specific skills and strategies to support a range of children, as discussed above under the section on 'Alignment with current practice and organisational values' as well as general practice.

> *It was changing the practice as a whole, so without the need to deliver any specific interventions as such that drew my attention to it, but it was just upskilling and improving everyday practice.* (Practitioner 2, 'Business as usual' interviews, maintained setting)

The Hanen Centre's reputation of providing effective training was also a consideration for setting staff when thinking about taking part. There was an acknowledgement that specific strategies that would be covered in the training, such as waiting for a child to speak, are already working for them, leading them to want to learn more and to further develop their use of these strategies. For those who had already worked with Hanen in a previous role, and enjoyed this experience and found it worthwhile, this was an essential driver to taking part.

One view from a practitioner in a control setting was that they would consider being involved in Hanen in the future because the approach could be learned by anyone. When thinking about being involved in Hanen LLLI in the future, they said:

> *We just feel it's such an inclusive, easy format, that wouldn't daunt any practitioner. [...] It's not [...] a scary approach, it's a common-sense approach. With the right training, I think it can be then implemented by anybody.* (Nursery manager 5, 'Business as usual' interviews, PVI setting)

Features of the Hanen LLLI approach

For those already familiar with Hanen, the programme was appealing due to some of the unique ways it is delivered and administered. Respondents in interviews identified these features as:

- **The 'whole-setting approach'** the programme takes. Settings across treatment and control groups preferred this to intervention-focused approaches that remove a child from the classroom to administer interventions. They liked that this approach is holistic and is centred within play and provision, feeling that more pupils benefit from this.

- **The Hanen LLLI model of cascading** to non-trained staff, and the way that the staff attending the training were being upskilled and then could upskill others in the setting using what they had learned.

- **The opportunity to talk to other professionals** as part of the workshops, as this would give the opportunity to learn from other practitioners and improve their own teaching.

> *The main driver was really how interesting it sounded that these were whole-school approaches that will benefit all children. It isn't about SEND approaches or intervention groups, because time can be very precious, and it can be very squeezed. So, to be using those really good strategies with all children just seemed really appealing for us.* (Nursery manager 6, Early implementation interviews, maintained setting)

*Reactions to not being allocated to the intervention group*

Data on reactions to not taking part in the intervention were gathered through interviews. While control setting staff tended to express disappointment at not having received Hanen LLLI training, they still described positive outcomes from their involvement in the evaluation. Control setting practitioners felt that, through involvement in the evaluation, they were making a contribution to helping children to learn.

> *We feel that we're still making a contribution, not the one we wanted to make, but we still have to do it. If by doing this it will prove its worth, because I'm sure it will, and hopefully, it will be open to all settings then.* (Nursery manager 5, 'Business as usual' interviews, PVI setting)

Those who expressed disappointment in not having received the training highlighted specifically that the programme would have helped the setting staff support their larger intake of EAL and SEND pupils, and that finances in the sector limited the training they could fund for their staff. However, this disappointment was mitigated by practitioners' belief that they were still effectively supporting their children through usual practice, and similarly that because they had not received Hanen LLLI, they did not know what they had missed out on.

A contrasting perspective from interview data was that not taking part in Hanen LLLI was a relief, or inspired mixed feelings, since practitioners did not have to manage the practical challenges of involvement. Specific challenges mentioned included filming oneself for the video feedback sessions given that the current cohort of children was challenging, and releasing staff to attend workshops.

> *We could've covered that if it had have been in the evenings or later on in an afternoon, but with it being in the middle of the day and all the other sessions so far away, it wouldn't have been possible at all to release so many staff.* (Practitioner 2, 'Business as usual' interviews, maintained setting)

When thinking about being involved in future Hanen training, in data from interviews a key consideration for the control setting staff was the results of the evaluation and whether those who took part in the intervention found it beneficial. Additionally, nursery managers expressed an interest in knowing which aspects of the training were most successful.

**Overall experience of Hanen LLLI**

Practitioners' experience of the programme was generally positive, finding the training useful and beneficial to their practice. Findings on what contributed to this positive perception of Hanen as well as opportunities for improvement are discussed in the section on 'Quality' below.

When asked in the survey to describe their experience of Hanen LLLI, all of the trained practitioners who responded (n=57) said it was positive (with 88% of this group saying 'very positive'). Similarly, when asked how useful for practice they found the training, the vast majority (95%) of practitioners responded that it was useful (with 81% saying 'very useful'). When asked to explain their responses in open text, practitioners reflected on their enjoyment of the experience, in particular the peer learning aspect and the usefulness of the video feedback sessions. Some of the minor challenges mentioned included finding time for the video feedback sessions, the technical challenges of uploading videos, and preferring the in-person workshops over the online sessions. These findings are echoed by the data from interviews and group discussions with practitioners, managers, and Program Leaders. The few disadvantages of the intervention that were found in the IPE are discussed in 'Unintended consequences' in the section 'Perceived benefits' below.

An overarching facilitator for engagement with Hanen LLLI was support from senior management. Practitioners highlighted the vital role that support from senior management played in their ability to attend the workshops and video feedback sessions. They provided examples of instances where supportive nursery managers had moved their other commitments around to allow the practitioners to attend the workshops more easily. Nursery managers also helped practitioners arrange transport to the in-person workshops and provided appropriate staff cover. When asked about any hindrances to practitioners' attendance at workshops, just 4% of the trained-practitioner survey respondents (n=57) selected a lack of support from senior management. Interviews suggest that a lack of support could translate into practitioners having to cut their sessions short or having to arrange for follow-up video feedback sessions outside the nursery working hours.

**Workshops**

This section explores how participants engaged with the workshops delivered by Communicate SLT CIC both in person and online via Zoom. Attendance data shows that most practitioners had high and consistent levels of attendance throughout the intervention period (see 'Reach' section below).
This section builds on those findings by presenting what participants found engaging about the workshops, as well as factors, which facilitated or presented barriers to engagement. Data from interviews show that the way the Program Leaders delivered the workshops and the relevance of the content to their own practice aspects that practitioners found particularly engaging about the workshops. Aspects that participants found less engaging were the format of the workshops and not all topic areas were considered equally engaging. Facilitators and barriers, which enhanced or hindered engagement with the workshops are also discussed. These include both aspects within the intervention and also contextual factors.

*Facilitators*
Interviews with practitioners and nursery managers highlighted some of the key facilitators to taking part and engaging with the workshops. These included the workshop content as well as practical support needed to take part, being able to organise cover, and sharing the experience with other practitioners. Program Leaders felt that practitioners' enjoyment of the workshops was a key driver for engagement being maintained during the intervention.

Interesting and relevant content
The relevance of the content of the workshops for practitioners' day-to-day practice was important for engagement.

In general, practitioners found the content interesting. When asked in the Hanen LLLI-trained practitioner survey: How interesting did you find the training workshops overall?, all respondents (n=57) said it was interesting, with 81% selecting 'very interesting'. The workshop respondents found the most interesting differed from practitioner to practitioner. A fifth (21%) of respondents chose Workshop 1 ('Take a closer look at communication') as the most interesting and 18% selected Workshop 6 ('Let language lead the way to literacy'). Each workshop had at least five survey respondents (9%) select it as the most interesting.

Another driver for engagement from practitioners was whether they could relate the content to their own practice. Practitioners liked that the tasks outlined in the workshops helped them to understand how the strategies they were learning about would translate and be used in their own settings. The use of examples was also helpful to relate the learning to their own experiences and settings, and practitioners liked sharing their own examples and having these discussed by the Program Leaders. Observations of the workshops also highlighted that the parts of the sessions practitioners consistently engaged with the most were where they were able to relate the content to their own experiences.

Practical
Practical facilitators to taking part in the workshops for practitioners included having dedicated time to prepare for the sessions, having the information before the session, having flexibility to attend different sessions, and the financial support given by the EEF to attend the sessions.

Practitioners and managers reflected in interviews that Hanen-trained practitioners were consistently given time within their working hours to prepare for the workshops. This included time to read any resources provided by the programme before the session, time to discuss anything with managers or other practitioners, and to think about any questions they may want to bring to the session. Practitioners also reported that they were given information on the workshops before the sessions. This enabled them to feel more prepared when attending and have any questions ready. One practitioner said:

> *Myself and two other members of the team would have just a general 15-minute catch-up about what strategies we've used since the previous workshop, how we've found them, just go over anything that we wanted to chat with [the Program Leaders] with.* (Practitioner 3, Ongoing delivery interviews, maintained setting)

Communicate SLT CIC allowed practitioners the flexibility to attend workshops on a different day than they were assigned. Practitioners fed back in interviews that this was valuable as it ensured that all staff could receive the training if anything came up that meant they could not attend the session with their colleagues. This was taken up by several

practitioners and meant they did not have to miss any workshops. Alternatively, Program Leaders offered catch-up sessions if practitioners had to miss a session and could not attend the alternative sessions. The flexibility and the catch-up sessions were key reasons given by Program Leaders for high workshop attendance.

Additionally, financial support was discussed in interviews by practitioners and nursery managers. Practitioners were given financial support from their setting in some instances, allowing them to claim back petrol or taxi expenses. For example, in one maintained setting, practitioners were able to claim back the cost of their petrol if they were driving to the workshops, and if they were not able to drive, their setting would pay for a taxi. In another maintained setting, practitioners were able to use some of the school budget to cover travel costs.

Setting managers raised the support from the EEF to reimburse part of the costs of travel and finding cover as being helpful, and that being able to claim back more of the costs would have been even more valuable.

> *I think it would have been better for us obviously if we'd have got the full cost of cover, because they only provide 75 per cent, I think, of the cover, and obviously they don't provide the petrol or mileage.* (Nursery manager 7, Ongoing delivery interviews, PVI setting)

Despite this support, there was still concerns around these costs, discussed in 'Challenges to taking part' section below.

Resourcing

Another important consideration for taking part in the workshops was organising staff cover. In order to attend the workshops practitioners needed cover, and this was often organised by setting managers in advance. As discussed above, managers and practitioners raised in interviews that there was also some financial support from the programme to arrange cover. Other practitioners in the settings also provided support with this. Setting managers also reported that staff sometimes organised cover among themselves, depending on who was available to cover the dates of the workshops, as these dates were given in advance.

Sharing the experience

Being able to discuss content from the workshops with other practitioners, both in their own setting and from other settings, was important to practitioners. They reported in interviews that talking to the practitioners in other settings was valuable in terms of intellectual support. They valued learning from others' experiences and being able to talk to each other about the training, providing support and advice to each other. In the logic model, a long-term outcome was the formation of a wider Hanen LLLI community. There is evidence of the beginnings of a community forming during the workshops, as the practitioners valued having this peer support, and Program Leaders have reported in interviews that they feel this will carry on after the training ends.

> *We've seen those links being made, we've seen practitioners actually contacting each other from different settings* (Program Leader 1, Paired interviews with Program Leaders)

Practitioners also found it beneficial to discuss the sessions with other practitioners taking part in the training from their own setting. This was seen as beneficial both for discussing the content of the workshops and for emotional support.

> *I think having the support of my other three colleagues has been really, really good because on the journeys there and back, we've been able to reflect together, which has been really good. I think for myself personally, it's just nice to have someone around that you know!* (Practitioner 4, Online site visit interviews, maintained setting)

Support for Program Leaders

For the Program Leaders, the main facilitators to delivering the workshops successfully and keeping practitioners engaged was the training they received and the opportunity to receive feedback on their delivery. Program Leaders were given support for the workshops, including being given the opportunity to give feedback, at team meetings facilitated by Communicate SLT CIC, as well as receiving feedback after an observation carried out by Communicate SLT CIC. The team meetings also gave them an opportunity to share tips with other Program Leaders, and they felt that they were given good training both on the course and about delivering sessions online.

*Challenges to engagement*

Just as there were aspects of the workshops that practitioners found particularly engaging, there were aspects that practitioners reported as making the workshops harder to engage with. Practitioners reported in interviews and in survey

responses that the mode of delivery of some of the workshops, certain topics covered, and the timings of the sessions prevented engagement. This was also seen in the online and in-person workshops observed.

Participants reflected on both practical challenges, such as difficulty finding cover, and financial challenges around finding cover and covering travel costs.

Staff resourcing

The main practical challenges that practitioners and managers reported facing revolved around the strain taking part put on setting staff, and this was the case across both maintained and PVI settings. In the trained-practitioner survey, when asked about challenges to taking part in the programme, 49% of the 57 respondents reported no challenges, while the most commonly cited challenge was the difficulty of finding cover, at 37%.

Having staff attend the workshops simply meant that there were fewer staff at the setting, putting strain on those not attending the training. This challenge was anticipated by some in early implementation interviews; managers knew that recruitment of staff was a challenge for EY at the time so it would be difficult to get more staff. In a setting where the practitioners needed to travel for 30 minutes to attend the workshops, a participant acknowledged that if staff had needed to travel any further for the workshops, they would not have been able to attend at all due to the time it meant the staff would be away from the nursery and the difficulty arranging cover. There was also a concern from managers in early implementation interviews around staff taking annual leave during term time and missing workshops. Later on in the training this did become an issue, and one session was missed by one of the practitioners as another member of staff was on holiday and they were unable to arrange cover for them to attend the session.

However, in one setting where a manager had felt it would be a challenge to find cover but was confident they would, they reported in a later interview that they had no problem with this. This was achieved by having a small team who were able to cover each session. They also found this consistency of cover beneficial for the children.

> *When all the staff go, it's the priority of making sure that they're still going to have a good level of consistent support back here while the staff are out at their training. We feel like we've managed to balance that well, and like I said, we've used the same staff, so that's been really positive and consistent for the children, and also reassuring for the practitioners that are on the training, that the children are still being well cared for when they're not there.* (Nursery manager 8, Ongoing delivery interviews, maintained setting)

Financial challenges

The main financial challenges that setting managers faced were around their ability to recruit for staff cover and cover travel costs. Families choosing cheaper forms of childcare due to cost of living meant that some settings were in a financially difficult position, leading to concerns from managers around finding cover. The financial remuneration for travel costs only being 75% was also a concern and would be more reassuring if it were 100%.

Online mode

One of the key reflections on the format of the workshops was that the in-person sessions were largely preferred by practitioners.

While practitioners reported appreciating the online sessions as it reduced logistical challenges associated with travel to in-person workshops, remote delivery required practitioners to find a suitable space at the nurseries from which to participate. Practitioners working in busy nurseries struggled to find appropriate locations and some had to access sessions from their classrooms or staff rooms. This meant that they were more likely to attend workshops late, leave early, or not attend at all. One view among practitioners was that their time was better protected when attending in-person workshops and they were able to focus more on the content. Physically leaving the nursery meant they were less likely to be called back to work.

There were also technical challenges associated with the workshops being held online. In some observations practitioners' cameras or microphones were not working and some had to use the chat function to contribute, which limited discussion. Additionally, some practitioners had to share their laptops with other practitioners attending the workshops from the same setting. Program Leaders expressed the view that this made it harder for them to engage practitioners in breakout rooms and encourage interaction with practitioners from other settings.

Practitioners, in interviews and the survey, reported that they found it harder to concentrate in the remote sessions and did not ask questions as freely and easily as they would have in person. One reason given for this is that the online sessions felt less natural, and another was that it can be more difficult to have a group discussion and manage dominant voices in an online setting. This was echoed by Program Leaders, who felt that it was harder for people to engage in the online sessions, especially if they were still in the workplace and likely to be interrupted.

> *The in-person workshops, they've got that protected time there that they can switch off, whereas I don't always feel they get the protected time with the online workshops. They quite often are distracted in the background.* (Program Leader 2, Paired interviews with Program Leaders)

Program Leaders also suggested the difficulty to engage in the online sessions may be due to a lack of familiarity with the format.

> *I think the face-to-face workshops were, engaged practitioners to a higher degree. The feedback we've had from practitioners is that the virtual workshops were more challenging. They found virtual learning more difficult to be, to fully engage with, just because it's, they're not used to it. They work face-to-face on a daily basis.* (Program Leader 4, Paired interviews with Program Leaders)

Confidence working with others

While many practitioners reported enjoying the networking opportunities that taking part in Hanen LLLI presented and working with new people, there were also examples of mixed levels of confidence when working with others acting as a barrier to engagement with the workshop content.

In the observed workshops, practitioners were often less committed to the role-play and not taking it seriously as an exercise to develop their skills. Sometimes this was due to it being towards the end of a session, and meant people were more distracted and began talking about other topics rather than staying engaged and in character, as seen in the observed sessions. It may also have been due to reluctance and nervousness towards the role-play in general, as reported by setting managers. One setting manager, who was also taking part in the training, said:

> *There's a couple of things that I put like in my feedback forms about splitting staff. Like essentially putting people in situations where you're with somebody you don't know. I don't think that's been very beneficial to any of us because you're already nervous. We, as a staff team, we don't like role-play, so then to be put with somebody we don't know, it seems a bit wasted.* (Nursery manager 9, Online site visit interviews, PVI setting)

Certain topics also seemed to be less engaging for some practitioners. For example, observations showed that the part of one workshop on how different language stages use turn-taking prompted less engagement. This may have been because practitioners felt reluctant to give answers as it relied on previous knowledge of language stages, and there were other instances in the observations of lower engagement with topics practitioners were less familiar with or had less understanding of.

**Video feedback sessions**

This section explores how participants engaged with the video feedback sessions. As with the workshops, attendance was high (see ‘Reach’ section above). This section discusses what participants found to be engaging in the video feedback sessions and what they found more difficult to engage with. Practitioners reported in interviews and the survey that having the sessions to reflect on their practice, and the support of the Program Leaders to do this, make the content engaging. They found the sessions so engaging that they also suggested that the sessions could have been longer. Facilitators and barriers to engagement in the video feedback sessions, such as contextual factors like technical issues and support provided for these, are also discussed.

*Facilitators to taking part*

Facilitators to taking part in the video feedback sessions were often in line with what helped participation in the workshops in terms of finding cover and being able to discuss the training with their colleagues, with the added considerations of having to record themselves and upload the content for the video feedback sessions.

Supportive delivery style

Practitioners reported in interviews and the survey that the delivery of the feedback from Program Leaders was positive and supportive. One practitioner, who said their overall experience was 'very positive', when asked to give reasons for their response said:

> *Course leaders were extremely supportive and encouraging—especially in video reflection session, which were really useful. (*Trainer-practitioner survey, Open-text response)

This was echoed by Program Leaders and feedback they have received from practitioners:

> *It's been dead positive, to be honest! They feel that they have been coached and mentored in a way that's made them feel empowered and that they're using the strategies effectively, and actually most importantly, it's not just about them looking at how they are using strategies. It's the impact it's having on the children.* (Program Leader 1, Paired interviews with Program Leaders)

Other practitioners felt the delivery from Program Leaders helped them feel comfortable with the idea of receiving feedback and made them feel supported rather than criticised, as some were worried about this when starting the training. The feedback from the Program Leaders made them more confident in their own skills and in some cases their experience with it was so positive and constructive they planned to implement video feedback sessions into their setting, and received help from the Program Leaders to do this.

> *[*Program Leader] is going to support me in how to […] do reflective video sessions with my staff, which is amazing. I don't know whether that's even part of what he's supposed to be doing with us, but he is going to support me in doing it. (Nursery manager 10, Online site visit interviews, PVI setting)

Delivery mode

There was broad agreement among practitioners that remote delivery of video feedback sessions helped participation. They felt that it would not have been possible for them to attend in-person video feedback sessions since it was not feasible to leave the nursery for a one-hour session. Additionally, practitioners expressed their enjoyment of the mixed-mode delivery of the workshops and preferred that over solely in-person or online workshops. Practitioners and Program Leaders described how online workshop delivery made attendance more flexible. Practitioners could choose to attend a different location's workshop session if they were unable to attend their own. The availability of different session options meant there was less pressure on nurseries to organise staff cover for all their practitioners simultaneously while they attended the Hanen LLLI training. On the other hand, in-person workshops helped practitioners build a rapport with the Program Leaders and engage with the content without any distractions.

Practical support

Practical support reported by practitioners in interviews was often similar to the support given for the workshops; being given time to prepare for the sessions and having some flexibility with the sessions they attend. Nursery managers and practitioners reported that space and time away from the rest of the setting was provided to record the videos and attend the online feedback sessions. The flexibility of the sessions was also valued by practitioners. As it was online, they were able to carry out the video feedback session at a time that suited them, which was valuable due to the challenge of finding cover.

However, the added aspect of recording themselves provided other opportunities for support from setting managers and other practitioners. Practitioners reported that once they had recorded their videos, they had time to prepare for and take part in the video feedback sessions and were given the opportunity to reflect on the training with managers and practitioners within their setting. Equipment was also sometimes provided by the setting. This included tablets, school phones, and tripods so that the practitioner could film themselves easily.

Resourcing

Organising cover for practitioners to attend the session was done often and was helpful to practitioners. Hanen-trained practitioners would support each other by recording each other, or by occupying children who were not in the video.

Sharing the experience

Being able to discuss considerations for filming themselves with the children and feeding back on the training experience as a whole was valued by practitioners. There were discussions with other practitioners at the setting about which children they could choose to do the recorded session with, and where would be best to record themselves.

> *After the workshop where we talk about the strategies and what strategies are going to be used during the video […] we tend to come together and have a chat at nursery, talk about our idea and see if it hits it into those strategies that we've talked about. So we help each other out, we'll say, 'Well, what about this?' Then you could add that strategy in.* (Practitioner 3, Ongoing delivery interviews, maintained setting)

Practitioners also spoke to managers about how they felt the training was going, what they had learned and how it could be implemented day-to-day and cascaded to other practitioners in the setting. In some cases, managers would provide emotional support to practitioners who expressed concern and discomfort about being filmed and receiving feedback from the Program Leaders. In other cases, practitioners would provide this support to each other.

> *Then we can give each other a little bit of positive feedback afterwards, so you don't feel as, things don't go perfectly to plan, which we know they don't, you don't feel as deflated at the end of it because somebody's been there and recorded it and said, 'You still got all your strategies in, you've still done this.' We just felt it was a nicer way to do it.* (Practitioner 3, Ongoing delivery interviews, maintained setting)

*Challenges to taking part*

Many of the challenges faced by practitioners taking part in the video feedback sessions echo the challenges raised in interviews around attending the workshops, in terms of managing workload and cover. However, these sessions also raised their own, distinct challenges; practitioners felt discomfort with the idea of filming themselves and receiving feedback, and the sessions being online also caused some difficulties.

Strain on setting staff

Practitioners did not expect the workload associated with taking part in the programme to be as high as it was with recording the videos, doing the video feedback sessions and writing action plans for each workshop. The time needed to take part in each video feedback session was also a challenge for some, as it meant 45 minutes they would not be available in their classroom. As with the workshops, managers expressed in interviews that there was also some difficulty getting cover for this. It could be difficult to find someone to record them if they needed this, and settings with a high number of SEND children found this more of a challenge as they needed to find cover to supervise children one on one.

Experience of recording the videos

The recording process could be emotionally and practically challenging. Some practitioners found it awkward to record and watch themselves and found receiving feedback on their skills uncomfortable. However, managers were sometimes able to provide support and encouragement for this, as were the Program Leaders, and often the experience became easier for practitioners the more they did it. One manager reported:

> *I think if a member of staff wasn't feeling confident and they needed additional support and encouragement to submit the first time, because there's always that thing about being on video that some people find difficult. So that additional support and encouragement to participate. After the first one, the staff really saw the value in it and have wanted to participate fully afterwards.* (Nursery manager 11, Online site visit interviews, maintained setting)

There was no one group of practitioners who found the experience more challenging; there was a range of participants who reported this in interviews, including nursery staff, teachers, and setting heads. The process of recording the videos could also be a challenge, from setting up the room, to excitable children meaning practitioners sometimes had to abandon attempts to record and the added difficulty of not having the time to re-attempt a video if it did not go to plan.

Technical difficulties

Uploading videos came with its own challenges, such as, having to upload on a personal phone if a school tablet was broken or having to forward the video to other staff members to upload from their own phones. Practitioners often solved these problems within the setting; however, there were instances where Program Leaders advised alternative methods to uploading the videos. The quality of the videos were sometimes reported as an issue, for example, one practitioner taking the survey, when asked to reflect on their overall experience, wrote:

> *The videos were not very good or clear and the audio was not clear.* (Trainer-practitioner survey, Open-text response)

Unreliable internet connections also caused problems for video feedback session attendance, as it did for the workshops.

**Cascading**

This section explores facilitators reported by managers and practitioners in interviews, covering relationships and attitudes of staff, and challenges, including capacity to use or apply cascading within the setting and challenges with staff buy-in. Positive attitudes from staff result in easier and more effective cascading, as they are able to work cohesively and share learning at every opportunity and have it received well by non-trained practitioners. On the other hand, when there is less buy-in from non-trained staff this leads to challenges when cascading, which exacerbates already present challenges with capacity for formal cascading in settings. Data from the survey on support for cascading from senior leadership is also discussed.

*Facilitators to cascading*
Positive staff relationships facilitate cascading. It means the practitioners are happy to share their learning with each other informally in the times before and after the pupils are at the setting and are comfortable asking for support during the day.

When setting staff are interested in the programme and want to learn, this enables trained practitioners to cascade more effectively:

> *As soon as other staff are hearing how good of a programme it is to be on, they want to know what we're learning, they want to know what we're getting up to, is there anything that we can share this week?...It's really good, the staff participation that we have so far, and we've only been doing it for a month and a bit.* (Practitioner 5, Early implementation interviews, PVI setting)

*Challenges to cascading*
Lack of capacity for cascading was often brought up by practitioners. It was difficult to cascade informally by discussing their training day-to-day in the setting when there are lots of distractions, and therefore practitioners found it useful to have dedicated time for training.

Others mentioned the challenges of finding dedicated time to deliver cascading formally, either needing to request time in advance if they want to do the training during a team meeting, or having restrictions around how many learning sessions they can do due to competing priorities. In the trained-practitioner survey, the most commonly selected barrier to cascading, chosen by 53% of 57 respondents was ‘lack of time to plan’.

There was a challenge to cascade to everyone in the team, as teaching assistants were not always present at team meetings. This was also reflected in the survey, with 40% of 57 trained practitioner respondents selecting ‘working hours of part-time staff’ as a barrier to cascading.

Some attempts at cascading were met with resistance from other practitioners who were not part of the training. This was often a reluctance to learn new strategies if the practitioner had been in the role for a long time. There was a view from managers that introducing the video reflections into the setting could help to gain buy-in from these practitioners, as they are a good tool to show what they could be improving on.

> *You have like maybe one or two members of staff that just do not want to learn or be interested, or think what they're doing is what we're saying, which is why I want to bring the reflective videos in, because you may think you're doing it when actually, you're not!* (Nursery manager 10, Online site visit interviews, PVI setting)

## Quality

Quality was included in the IPE to understand how participants perceived the quality of Hanen LLLI delivery and content and also to explore potential change mechanisms that could be included in a future iteration of the logic model. While fidelity describes *whether* different programme elements were delivered, quality describes *how well* a workshop, for

example, is delivered, from the perspectives of the trainers (Program Leaders) and recipients (practitioners). This data, together with findings on responsiveness, can inform the development of change mechanisms, which can then be included in the logic model to describe how and why activities, delivered in a particular way, can lead to outcomes.

Data on quality were collected in interviews with Hanen LLLI- trained practitioners, managers, and Program Leaders, as well as observations of workshops and the trained-practitioner survey. These participant groups were asked to reflect on the value and quality of different programme components and identify areas for improvement.

In general, participants were positive about the overall quality of the Hanen LLLI programme. The intervention was perceived as well-organised, engaging, and useful for improving practice within settings, although criticisms were raised regarding some workshop activities, the level of challenge presented by the content, and the delivery style of the video feedback sessions.

**Pre-programme visits**

Prior to the workshops, Program Leaders conducted visits to settings to give practitioners a *'taster'* (Representative from Communicate SLT CIC) of what the workshops would cover and give them an opportunity to talk about any concerns they had about the programme. In an interview, representatives from Communicate SLT CIC stated that they had received positive feedback from practitioners about the introductory visits, which had helped to alleviate some concerns, particularly in relation to recording videos.

> *I think a lot of people felt reassured about the videoing process. That is always a daunting process to practitioners, when you introduce the idea of them being videoed and then watching it back, but we were able to talk about those concerns.* (Representative from Communicate SLT CIC)

Although practitioners were not asked for their feedback on these visits in interviews, one practitioner spontaneously mentioned that they had found it useful. Meeting their Program Leader in person made them feel more relaxed before the first workshop, knowing that they were not meeting everyone for the first time.

**Workshops**

*Structure of workshops*
Practitioners gave positive feedback about the structure of the Hanen LLLI workshops. They felt that the agenda of the workshops was clearly set out at the start, and it was clear how each section related to both the sections of the workbook and the workshop objectives. Program Leaders also felt that the structure of the presentation following the 4P teaching-learning cycle was effective in conveying the objectives to practitioners in a way that made sense.

Practitioners found the segmentation of the workshops into sections helpful for two reasons:

- **Sustaining engagement:** it was easier to maintain focus for the entire duration of the workshop because there was a variety of different activities and topics. Practitioners remarked that this also helped them to absorb what they had learned by thinking about the concepts in different ways.

- **Appealing to different learning styles:** practitioners also praised the variety of approaches to delivering content. This was preferred to the didactic, lecture teaching approach that practitioners were familiar with. Program Leaders agreed that the mix of activities met the learning needs of practitioners with different learning styles (e.g. visual, auditory, and dynamic) to engage with the content.

  > *It really works well because there's such a good blend of different approaches to the work.* (Practitioner 6, Ongoing delivery interviews, PVI setting)

Practitioners appreciated having dedicated time to write action plans within workshops as some thought that they may not have completed them in their own time. However, one view expressed by practitioners was that there was not enough time or guidance for completing actions plans in the workshops and that they were '*left to their own devices'* (Practitioner 7, Online site visit interviews). However, after receiving this feedback, Program Leaders began to spend more time on action plans and gave more examples and ideas, which participants found beneficial.

*Content of workshops*

In general, practitioners had positive reflections on the content of workshops. They gave feedback on the following elements:

Group discussions

Group discussions were identified as a key element that practitioners found useful. In particular, they liked being able to hear how other settings operated and how they were using strategies. However, one view was that it would be useful to have more unstructured discussion time to talk to other practitioners about specific challenges they had and approaches to working with different children.

Activities

Participants gave their views on some of the activities they did as part of the workshops, which were generally positive. One activity mentioned spontaneously by practitioners was role-playing, which had mixed responses. One view was that role-play was a fun activity, which helped practitioners put their learning into practice. However, a contrasting view was that role-play was uncomfortable, especially in a mixed group of practitioners who they did not know.

Videos

The Hanen Centre videos are integrated into each workshop to help demonstrate the 'ideal application' of Hanen LLLI strategies. Practitioners were not always positive about the videos, describing them as poor quality, dated (i.e. recorded over ten years ago), and not relevant to the UK nursery context (as they were recorded in North America). Therefore, substituting these with new videos recorded in UK nurseries may be more acceptable to practitioners. However, practitioners were more positive about the 'Video Stars' segment of the workshops where they were shown videos recorded by other practitioners in the group. These helped them to reflect on good practice and take ideas from each other. Practitioners reported that Program Leaders framed these discussions to focus on the positive elements of the video and other practitioners were encouraging and non-critical in their feedback.

*Delivery of workshops*

Practitioners were overwhelmingly positive about Program Leaders' delivery of the workshops. Program Leaders were described as knowledgeable, engaging, and supportive, and their delivery style was described as fun, relaxed, and informative. They had a very good understanding of session content and were able to talk through the slides with ease. Practitioners felt that the less formal delivery style created a comfortable atmosphere, which meant they were not intimidated to contribute to discussions and ask questions.

> *They just seem to want to get the best out of you and give you the best information that they've got.*
> (Practitioner 1, Online site visit interviews, maintained setting)

Researchers observing workshops noted that Program Leaders delivered the sessions confidently, encouraged discussion throughout, and were familiar with the material they were presenting. Their delivery style was not patronising or judgemental, and they delivered the content from the perspective that they are practitioners themselves.

Workshops were co-delivered by two Program Leaders: an EY consultant and an SLT. Practitioners felt that this arrangement worked well as the content was co-delivered seamlessly and their delivery styles were complementary. Practitioners also reported that having two voices delivering training was more engaging than if there had been one voice. Program Leaders also gave a number of reflections on the co-delivery model in interviews. They felt that the pairing of Program Leaders with teaching experience and speech and language expertise was ideal as their joint knowledge base meant they could talk confidently about all aspects of the content. Program Leaders also felt that co-delivery was useful for monitoring engagement, particularly for online workshops, as the Program Leader who was not presenting was able to monitor practitioners' engagement.

Another view held by both practitioners and Program Leaders was that workshops sometimes felt slightly rushed due to the large amount of content covered. Program Leaders had received feedback that one workshop in particular (Workshop 7) had a lot of information and new terminology, which practitioners thought could have been explained in more depth.

*Mode of workshops*

Participants were specifically asked about their views on the mixed mode of workshops as online workshops were relatively new (first implemented in the Hanen LLLI pilot). As also discussed in the chapter on 'Responsiveness' above,

in general, practitioners and Program Leaders expressed a preference for in-person workshops over remote workshops held on Zoom (though findings from the survey were more mixed—see below). Three reasons were given for this, relating to: ability to engage; information technology (IT) issues; and personal preference.

Ability to engage

Practitioners felt it was harder to have discussions during online workshops, as people often talked over each other, it was sometimes difficult to hear what others were saying, and the conversation felt less natural. Practitioners said that they would be less likely to ask questions and contribute to discussions in remote workshops for these reasons.

There were also benefits that came from travelling to a venue for the workshops. For example, practitioners said there were often distractions when joining online from the nursery, which made it difficult to concentrate. One practitioner described the journey to the venue as a useful transition time, which helped them to relax before the start of the workshop. In contrast, practitioners reported often working with children right up to the start of online workshops and felt that they were *'squeezing it in an already busy day'* (Practitioner 8, Online site visit interviews). One pair of Program Leaders were aware of practitioners going into work before the early in-person workshops, even for a short period, which illustrates the high demand for practitioners' time.

> *This sector is so under pressure that the practitioners go into the workplace even if it's for half an hour before the course starts because they're another pair of hands.* (Program Leader 4, Paired interviews with Program Leaders)

IT issues

Program Leaders noted that some settings had inadequate Wi-Fi or IT equipment, which also made it more difficult for practitioners to participate in online workshops. They reported that this was a greater issue in PVI settings, which tended to be less well equipped for online meetings. Program Leaders expressed the view that the disadvantages of online workshops (i.e. technical issues) likely outweighed the benefits (i.e. affordability and accessibility). Observation data also showed that device-sharing was common, with practitioners sometimes sharing small devices like smartphones, although practitioners did not raise this as an issue in interviews.

Personal preference

Practitioners expressed the view that they found the in-person workshops more personal, relaxed, and conversational. Conversations on Zoom sometimes felt more *'awkward'* (Practitioner 7, Online site visit interviews), especially in breakout rooms, where they were allocated to a smaller group. Practitioners also expressed a preference for the interactive activities that the in-person sessions afforded, like using playdoh or role-playing scenarios. Practitioners who completed the survey were asked, which mode of delivery they would prefer for workshops if they took part in the programme again. Results were more mixed, with a roughly even split in terms of a preference for all in-person workshops (51%) compared with a mix of in-person and remote workshops (47%). Only 2% (n=1) stated a preference for all workshops to be online.

*Level of challenge*

Practitioners gave a number of examples of positive changes they had made to their practice as a result of the workshops (see 'Perceived benefits' section below). However, in settings where practitioners were more experienced, staff felt that they already knew a lot of the content being taught. This was typically because they had done other training programmes or because they had a lot of experience working with children and knew what strategies were effective. Where this was the case, practitioners held different views about the value of Hanen training. One view from practitioners was that the training was a useful way to refresh their knowledge and re-establish the strategies at the forefront of their practice. For example, in one setting, the training was seen as an opportunity to refresh learning in order to mentor others about strategies and become an *"expert"* (Nursery manager 11, Online site visit interviews) within the nursery.

> *It's nothing groundbreakingly new, but just brings them back to the core principles that you almost forget when you're doing the day-to-day.* (Practitioner 9, Ongoing delivery interviews, maintained setting)

A contrasting view was that the content was not challenging enough for them and the information covered was too *'basic'* (Practitioner 7, Online site visit interviews).

*Suggestions for improvement*

Participants had a number of suggestions for improvements to workshops.

Mode of workshops

As outlined above, in interviews, practitioners generally stated a preference for in-person workshops (though views in the survey were more mixed). Within this, one view was that it would be preferable to have all sessions in person (this option was chosen by half [51%] of trained-practitioner survey respondents).

Mixing of practitioners

Program Leaders followed The Hanen Centre guidance about mixing groups of practitioners during workshops, so they did not just interact with those from their own settings. However, practitioners' views about this were varied. On the one hand, staff mixing was viewed favourably. On the other hand, working with practitioners from other settings was seen as difficult or less than ideal. For example, one practitioner felt it would be better for practitioners working in schools to sit together as delivery is very different to PVI settings, although they did not give examples of these differences. Another view was that it was daunting to have to do activities like role-playing with people they did not know. This is discussed in the 'Responsiveness' section above, in relation to its impact on engagement with workshops.

Timings of workshops/programme

In interviews with practitioners, there were some suggestions about changes to workshop timings. These included lengthening the workshops so that the content could be presented at a slower pace and prevent the sessions feeling rushed. Conversely, one suggestion was to shorten remote sessions as it was more difficult to sustain focus during online workshops. It was also suggested that two in-person workshops could be held in one day as this was thought to reduce disruption to the nursery caused by staff absence.

Support for cascading

Although practitioners did not express a desire for more support around cascading, Program Leaders felt that this was an element of the training that was missing. Program Leaders had received training to be able to develop practitioners' skillset and facilitate self-reflection, which practitioners did not receive. In some settings, practitioners had made plans to lead video reflections with their colleagues. Although the Program Leader had shared some basic principles about leading reflections, they felt it was not reasonable to expect them to adopt that role, and further instruction within workshops would be beneficial.

> *We're assuming that just because we're giving them this information, in a very skilful way actually, they're going to be able to do the same. I wonder whether an enhancement would be to have a module or an element around moving practitioners from not having any awareness into actually implementing strategies, and that would support the cascading.* (Program Leader 4, Paired interviews with Program Leaders)

Tailoring content for level of experience

As described above, one view from practitioners was that they were not challenged by the content of the workshop. In response, one suggestion was to identify the experience levels of practitioners at the start of the programme (e.g. through a pre-training survey) and adapt the content accordingly. Tailoring content to the practitioners with varying skills and experience is a stated aim of workshop delivery (see 'Adherence' section above), so providing more guidance for Program Leaders around how and when to adapt content would be beneficial.

**Video feedback sessions**

There were mixed views about the quality of video feedback sessions. Although practitioners were able to give positive reflections on the sessions, they also had suggestions for improvements. Criticism was generally related to the intended delivery of the sessions, rather than individual Program Leaders' skills or delivery styles.

The positive role that the video feedback sessions played in Hanen LLLI overall was recognised by participants. Practitioners reported in interviews that they valued having the video feedback sessions as part of the training, as it meant the process of learning did not feel rushed and did not feel like they were left to figure it all out on their own. Instead, they were given chance to practice the strategies they had learned about before learning more and building on these in the next workshop.

> *You go and do some courses and things like that and you get talked at and then that's it, you go away, you're left to deliver it. Whereas I really liked the fact that this, you do an element of it then you go away, you deliver, you reflect on it, and then obviously you move on. I liked that aspect of it, that you're not just sent away then and left to it. It's a lengthy process and it's also a reflective process.* (Nursery manager 12, Early implementation interviews, PVI setting)

*Format of video feedback sessions*

There was a consensus among practitioners that the process of recording themselves and watching the videos back with the Program Leader was initially daunting and uncomfortable. However, this became easier over time, which practitioners attributed to Program Leaders clearly explaining the purpose of the exercise and their ability to make them feel relaxed and comfortable.

One structural element of video feedback sessions that practitioners commented on was the approach to giving feedback. They reported that in early sessions, they would watch the whole video through and then reflect on what they had watched, which made it difficult to recall certain elements of the video that Program Leaders prompted them to respond to. However, after a few sessions, Program Leaders began to pause the video so that they could talk about smaller sections of the video. This was thought to be a better approach that made it easier to remember, which strategies they had used and for Program Leaders to point out elements that had gone well. Despite the preference for this approach, it was unclear whether this was adopted consistently by all Program Leaders.

*Delivery of video feedback sessions*

Practitioners generally had positive views on Program Leaders' style of delivery and feedback during video feedback sessions. They described the feedback as intuitive and perceptive, as Program Leaders were often able to point details out that practitioners were not aware they were doing. One practitioner said it was clear that Program Leaders had made a lot of preparation before the sessions:

> *[The Program Leader] has gone through the video piece by piece, and noted down where I use the strategies, where I could have improved. What words could I have said at that moment? Did you notice this? What do you think happened there? What was the child thinking? So, there's a lot of analysis that goes prior to our reflection video.* (Practitioner 10, Ongoing delivery interviews, maintained setting)

One element that practitioners had mixed views on was the level of constructive or critical feedback provided by Program Leaders. One view was that there was a good balance of positive and constructive feedback on areas where they could improve. However, another view was that constructive feedback was lacking, and the focus was either solely on what they had done well, or no feedback was given and Program Leaders only prompted practitioners to self-reflect. This criticism reflected practitioners' beliefs that there were areas for improvement in their own practice and that they would get more out of the sessions if they were given concrete suggestions about how to improve.

> *It would be nice for the leaders to actually be saying, 'Well, I've noticed in this that you probably could try this next time.' It's always, 'What do you think?' I know that's part of it, it's the reflection, but you can only reflect so much and then go back and think, was that right? You just never know if you're right, do you?* (Practitioner 7, Online site visit interviews, maintained setting)

Program Leaders explained that they were trained to 'ask more than tell' when giving feedback and that the positive feedback style was intended to empower practitioners and give them confidence that they were using strategies successfully (see 'Fidelity' section above). However, feedback from practitioners suggests there was some discrepancy in how this was implemented and that this style was not always favoured by practitioners.

Program Leaders' feedback style was also described as supportive and non-judgemental, which was especially important in the early sessions when practitioners were worried about watching and reflecting on their videos.

*Usefulness for practice*

Video feedback sessions were considered a very useful element of Hanen LLLI (see 'Perceived benefits' section for a discussion of the benefits of these sessions). Reasons for this were twofold, the sessions:

- **provided a framework to reflect on own practice:** the sessions gave practitioners a framework for reflecting on their own practice, which resulted in greater self-reflection in their day-to-day work (see 'Perceived benefits' section); and

- **alerted practitioners to opportunities for developing children's language:** the sessions made practitioners more conscious of their interactions with children and more aware of opportunities to develop children's language, which they would typically miss;

  *It's helped me to be more aware of those tiny, little, non-verbal cues that children might use, to start an interaction or to attempt a bit of an interaction when there are more than one in the group.* (Practitioner 11, Ongoing delivery interviews, maintained setting)

*Mode of video feedback sessions*

In interviews, practitioners largely felt the online format was suitable for video feedback sessions and it would be more uncomfortable to watch the videos back if they were in the same room as the Program Leader. They also thought the practicalities of holding the session in person would be too complicated, although it appeared that some practitioners were thinking about travelling to a venue, rather than Program Leaders visiting their setting (which was the arrangement in Hanen LLLI 1). Program Leaders shared concerns about the practicalities of in-person sessions, as they felt it would put pressure on staff to accommodate them, for example, by having to book rooms. Similarly, trained practitioners who completed the survey (n=57) showed a preference for online sessions or mixed-mode delivery: 56% would prefer all online sessions; and 32% would prefer a mix of in-person and online sessions.

Practitioners also cited internet issues and poor streaming quality as reasons to have the sessions in person. However, the survey data revealed that only 11% of practitioners would prefer all in-person sessions. Program Leaders felt that some settings had not fully complied with recommendations about the necessary IT provision, which could have prevented these issues.

*Suggestions for improvement*

Suggestions for improvements to the video feedback sessions included:

- **Changes to programme timings:** one suggestion was to have a longer period between the workshop and the video feedback session as it was sometimes difficult to find time to record the videos in the intervening period. This did not include specific suggestions for a suitable length of time.

- **Feedback to include areas for improvement:** as described above, there was a view that more constructive feedback about how practitioners could improve their practice would be useful.

- **Pre-video feedback familiarisation session:** Program Leaders noted the difficulties that some practitioners reported around watching and reflecting on their videos. They suggested that it would be helpful to have a meeting before the first video feedback session to build their relationship with the practitioner and talk to them about their concerns. This would help Program Leaders to understand practitioners' views and their ability to meaningly engage with the process.

**Resources**

Practitioners were not explicitly asked about their views on the quality of resources in interviews. The views of Program Leaders and feedback they received from practitioners are outlined below. See 'Adherence' section above for details about practitioners' use of resources.

*Views on online resources*

Program Leaders presented different accounts of practitioners' use of resources. One reflection Program Leaders gave was that practitioners were aware of online resources, such as Padlet (Padlet, 2024), and knew how to access them if necessary, however they did not often use them. They felt that the Hanen website where practitioners could view videos and find summary content of the workshops were used more frequently, as these were helpful for cascading learning to other members of staff. In contrast, another view was that there was good engagement with online resources, and

Program Leaders had received positive feedback on it from practitioners. Again, resources were seen as especially useful for cascading activities.

*Views on physical resources*
Program Leaders said that practitioners had found the Hanen LLLI handbook to be a useful and accessible resource. This was a collection of all of the Hanen worksheets and action plans in one pack, developed by Communicate SLT CIC in response to feedback from Hanen LLLI 1. Program Leaders thought this was a useful tool for practitioners as they had all handouts in one place and had somewhere to make notes during workshops.

Hanen LLLI posters were another resource provided to practitioners. These showed the different Hanen LLLI strategies and were designed to remind practitioners to use them regularly. Program Leaders saw the posters as a helpful physical reminder about the strategies but felt these were underutilised in settings. They explained that practitioners had put these up in their settings, but in the nursery office or staff room where it was not visible when interacting with children. Where posters were displayed in nursery classrooms, there were a lot of other displays on the walls and Program Leaders felt that they were not noticeable enough to be useful to staff.

*Suggestions for improvement*
Program Leaders suggested that page numbers in the Hanen handbook would make it easier to signpost practitioners to the relevant resources more quickly.

## Perceived benefits

This section covers the perceived benefits of Hanen LLLI first for practitioners, and then for children. The section also explores benefits for settings, which, while not separately set out in the logic model, are described in Hanen LLLI training materials and otherwise contribute to benefits for practitioners and children. Outcomes for children were measured in both the IPE and impact evaluation (findings for the latter are presented in the 'Impact evaluation results' section above), while outcomes for practitioners and settings were only captured through the IPE.

Overall, there is some evidence of improvements to practitioners' practice and a reported increase in the quantity and quality of interactions with children during the intervention period. Perceived benefits for children include improvements to language use and increased vocabulary, though respondents also reported that it was difficult to reflect on cohort-wide benefits for children. The respondents who took part in the qualitative interviews were cautious about making assertions about the impact of Hanen on child-level outcomes. Therefore, while the intervention was perceived as adding value to speech and language provision within nurseries, these findings support the impact evaluation findings of small or no impact on child-level outcomes.

**Perceived benefits for practitioners**

Practitioners, managers, Program Leaders, and Communicate SLT CIC staff all reported benefits for Hanen LLLI-trained practitioners across a range of short-, medium-, and long-term outcomes outlined in the logic model. First, practitioners changed their daily practice as a result of Hanen LLLI (supporting this short-term outcome), or had their existing good practice reinforced. Second, in line with the medium-term outcomes, participants said that practitioners had gained confidence in their own practice and working with colleagues over the course of the programme. Third, practitioners had become more reflective on their own practice.

Nursery managers and Communicate SLT CIC staff felt that practitioners had developed a greater understanding of language development and had an 'increased awareness and identification of children's conversational styles', as the outcome is described in the logic model. As a result, practitioners were better able to support children with varying levels of language development, and better able to identify and support pupils with additional language needs and SEND, aligning with other planned intervention outcomes. While practitioners did not refer specifically to changing their perceptions and beliefs regarding a child-centred approach, a medium-term outcome, they did employ strategies, which align with this approach (described below).

This section covers the detailed findings on these perceived outcomes for practitioners and concludes by discussing how these outcomes varied between practitioners, both within and between settings, for example, depending on the level of practitioners' experience or the extent of cascading within the setting.

*Change to practitioners' practice: learning new strategies*

Practitioners, nursery managers, and Program Leaders reported that practitioners had learned new strategies through Hanen LLLI, which they were using in daily practice. This was an intended short-term outcome of the intervention.

> *A lot of the strategies have worked really well and I think the more I use them, the more confident I am with them and then the more it becomes second nature to […] work like that with the children.* (Practitioner 12, Online site visit interviews, maintained setting)

Practitioners elaborated that they were able to recognise when they were using the new Hanen LLLI strategies in practice:

> *As soon as you do it, you think, oh, that's—it kind of clicks in your head, like, oh, that's Hanen [laughing].* (Practitioner 6, Ongoing delivery interviews, PVI setting)

Program Leaders also observed an increased use of strategies through the video feedback sessions, and echoed that use of strategies was becoming *'second nature'* (Program Leader 2, Paired interviews with Program Leaders).

Managers and practitioners commented that strategies could be integrated into practice because they were simple and could be used effectively even when time was tight during the nursery day. Specific strategies practitioners mentioned using, included pausing more during interactions with children and observing what children were doing. Both practitioners and Program Leaders said that practitioners were taking a less active role in interactions as a result of listening and observing children more, and so were instead acting as responsive conversation partners, as advocated in the Hanen LLLI training. These changes align with the medium-term outcome of implementing child-centred strategies, though we note that practitioners did not discuss these strategies in these terms.

In addition to these strategies, Program Leaders and Communicate SLT CIC staff reported that practitioners were also emphasising everyday interaction and small group working to a greater extent, in response to the Hanen LLLI training. For example, Communicate SLT CIC staff recalled that a practitioner had discussed reading books in smaller groups as a result of Hanen LLLI, in order to make the experience more interactive and conversational, and less focused on finishing the book.

> *They've recognised, as a setting, the importance of everyday opportunities for conversation and interaction and how important that is. They said […] 'So he always comes up at snack time, and I used to send him away to go and engage in learning when I was preparing a snack. Now, every day he comes up and we have a ten-minute extended conversation while we're preparing snacks together.' She thinks it's really helped his language and communication skills come on.* (Program Leader 3, Paired interviews with Program Leaders)

Pre- and post-intervention videos were scored to assess change in practice between baseline and endline (see 'Scoring of pre- and post-intervention videos' in 'Methods' section above for more details). The scale was designed by The Hanen Centre to evaluate teachers' interactions with children. Ten elements of practice were evaluated, such as 'Wait and listen', 'Follow the child's lead', and 'Encourage turn-taking'. Scores were given on a frequency scale from 1 to 7, with 1 meaning 'almost never' and 7 meaning 'consistently'. The guidance notes that a score of 1 to 3 indicates 'needs improvement', 4 'needs fine-tuning', and 5 to 7 is 'satisfactory'. Videos were provided for one practitioner per setting.[29] While providing an insight into practice development during the intervention period, these pre- and post-intervention video scores should not be interpreted in isolation from the rest of the IPE findings as they present a narrow view of a practitioner in a particular moment in time.

In the pre-intervention videos, for treatment settings, the average score across all ten strategies was 3.9 (out of seven), increasing to 4.7 in post-intervention videos. Each of the ten strategies saw an increase in average scores over the course of the evaluation, though the increases were modest, ranging from 0.2 to 1.2. The strategy, which saw the smallest increase in average scores over the period was 'Use a variety of questions', for which the scores were 3.9 and 4.1 at pre- and post-intervention, respectively. Three strategies each had the largest increase of 1.2 points: 'Join in and play' (3.7 to 4.9); 'Expand' (3.4 to 4.5); and 'Extend' (3.5 to 4.7) (Table 36). Overall, we note that at an aggregate level,

[29] Two of the settings from which we received videos were deemed non-compliant. The video scores for these settings were excluded from our analysis.

all strategies were already in use in pre-intervention videos and that across the post-intervention videos, only seven out of ten strategies had achieved the 'satisfactory' level of a score of 5 or more.[30]

Meanwhile for control settings, a similar picture emerges. The average score across all ten strategies was 3.7 in pre-intervention videos, increasing to 4.4 in post-intervention videos (both a little lower than in treatment settings). As in treatment settings, all ten strategies saw an improvement in scores over the period, with average scores increasing between 0.3 and 1.3 points. As with treatment settings, we note that at an aggregate level, all strategies were already in use in the pre-intervention videos. Scores for the post-intervention videos showed that four of the ten strategies had achieved a 'satisfactory' level (a score of 5 or more)—compared with seven strategies, which reached this level in treatment settings.[31] The full set of results are given in Table 36 and Table 37.

*Table 36: Pre- and post-intervention video scores – treatment settings*

| Strategies | Pre-intervention videos mean score | Post-intervention videos mean score | Difference in mean scores |
|---|---|---|---|
| 1. Wait and listen | 3.7 | 4.8 | 1.1 |
| 2. Follow the child's lead | 4.7 | 5.3 | 0.5 |
| 3. Join in and play | 3.7 | 4.9 | 1.2 |
| 4. Be face to face | 3.7 | 4.3 | 0.5 |
| 5. Use a variety of questions | 3.9 | 4.1 | 0.2 |
| 6. Encourage turn-taking | 4.2 | 4.8 | 0.6 |
| 7. SSCAN | 3.4 | 4.4 | 1.0 |
| 8. Use a variety of labels | 4.4 | 4.9 | 0.5 |
| 9. Expand | 3.4 | 4.5 | 1.2 |
| 10. Extend | 3.5 | 4.7 | 1.2 |

*Source: Video score data, for 46 treatment settings.*

*Table 37: Pre- and post-intervention video scores – control settings*

| Strategies | Pre-intervention videos mean score | Post-intervention videos mean score | Difference in mean scores |
|---|---|---|---|
| 1. Wait and listen | 3.6 | 4.2 | 0.6 |
| 2. Follow the child's lead | 4.3 | 5.0 | 0.7 |
| 3. Join in and play | 3.4 | 4.1 | 0.7 |
| 4. Be face to face | 3.4 | 4.1 | 0.7 |
| 5. Use a variety of questions | 3.9 | 4.7 | 0.8 |
| 6. Encourage turn-taking | 4.1 | 4.4 | 0.3 |
| 7. SSCAN | 3.4 | 3.8 | 0.4 |
| 8. Use a variety of labels | 4.1 | 5.0 | 0.8 |
| 9. Expand | 3.0 | 4.3 | 1.3 |
| 10. Extend | 3.6 | 4.6 | 1.0 |

*Source: Video score data, for 49 control settings.*

*Reinforcing pre-existing knowledge*

By contrast, another perspective, expressed by practitioners and managers, was that Hanen LLLI brought speech and language to the forefront of practitioners' minds, reinforcing strategies that they already knew, the reasons behind them, and reminding staff of good practice. Those expressing this view described workshops as a beneficial *'refresher'* (Practitioner 9, Ongoing delivery interviews), rather than as introducing new knowledge.

> *The staff who attended for us on the Hanen programme are experienced staff. […] they've found out from the Hanen work that many of these things they already have in their tool bag as an educator or an Early Years practitioner.* (Nursery manager 11, Online site visit interviews, maintained setting).

An additional, related benefit described by practitioners and managers was that Hanen LLLI provided useful *'metalanguage'* (Nursery manager 11, Online site visit interviews) for capturing practice, helping with senior buy-in and sharing learning gained from the Hanen LLLI training sessions with colleagues and parents. Those expressing this view implied that, while the strategies themselves may not have been new to practitioners, being able to label and verbalise them had been a new benefit of the programme.

[30] These summary figures apply when average scores are rounded to whole integers. When the average scores are set to one decimal place (or more), only one strategy in treatment settings attained a score of at least 5.0—'Follow the child's lead' (with an average endline score of 5.3).

[31] When average scores are shown to one decimal place or more, two strategies in control settings attained a score of at least 5.0: 'Follow the child's lead'; and 'Use a variety of labels' (both had an average endline score of 5.0).

*Confidence*

Practitioners, Program Leaders, and Communicate SLT CIC staff all highlighted gains in practitioners' confidence, supporting the logic model outcome of 'increased confidence to implement and review strategies in the classroom':

- Communicate SLT CIC staff observed that practitioners had become more confident receiving feedback, using strategies, and in recognising how strategies linked to the EYFS statutory framework. They reported that increased confidence in links with the EYFS enabled practitioners to justify the use of strategies to senior leadership and colleagues.

- Practitioners themselves felt they had gained confidence in working with colleagues, describing it as empowering to share learning and give suggestions about how colleagues could improve their practice.

- Almost all respondents (95% of 57 respondents) to the trained practitioners' survey agreed their confidence to implement new strategies had improved as a result of Hanen LLLI.

- Program Leaders reported that less experienced practitioners in particular had become more confident working with children with *'communication difficulties'*[32]:

  *They now have lots of strategies that they can use in order to work with these children that they didn't have the confidence to work with in the past.* (Program Leader 2, Paired interviews with Program Leaders)

Managers and practitioners attributed gains in practitioner confidence both to the Hanen LLLI training in general, and to video feedback sessions in particular. They said that training in general boosted confidence by providing reassurance that practitioners' practice was already effective (aligning with the previous section on reinforcing pre-existing knowledge).

Managers explained that video feedback sessions in particular had had a positive impact on practitioners' confidence because it was beneficial for staff to hear positive feedback from outside of their colleagues and setting. Additionally, trainers were able to identify successes practitioners themselves might not have noticed (e.g. where a child had tried to say a difficult word the practitioner had introduced). Managers added that they had seen particular benefits for shyer staff and those who tended to be critical of their own practice:

> *[The Program Leader] was like, 'Actually, no. I see a lot of great things here.' He's very good at highlighting the good stuff for her. It boosts her morale and everything else.* (Nursery manager 1, Ongoing delivery interviews, PVI setting)

*Reflecting on own practice*

Reflecting more on practice was a key benefit recognised by both practitioners and managers; this is one of the medium-term outcomes in the logic model. In the trained-practitioner survey, out of 57 respondents, 93% agreed that that they were more reflective of their own practice as a result of Hanen LLLI, with 77% strongly agreeing with this statement.

Those expressing this view in IPE interviews highlighted the particular role of video feedback sessions in fostering more reflective practice: sessions made staff aware of what they could improve; and it was useful to have someone else as a 'sounding board' to discuss how to use strategies in practice.

Practitioners described the experience of reflecting on improving practice in positive terms, for example, mentioning the benefits they had seen for children as a result, and implying that they were motivated by opportunities to better their practice. The positive experience of video feedback sessions was partly attributed to Program Leaders' effective approach to communicating feedback (see 'Facilitators to taking part' section, part of 'Video feedback sessions' in 'Responsiveness' section above). Managers and practitioners additionally said that non-trained staff were also thinking more about how they interact with children, in part because Hanen LLLI-trained practitioners were sharing knowledge and tips.

[32] This phrase comes from the same participant referred to in the full quote that follows.

Program Leaders also recognised that higher engagement in reflective practice was a programme benefit for practitioners. Despite widespread initial challenges, Program Leaders described practitioners in general as having made substantial progress over the course of the programme in their ability to reflect on their own practice. Program Leaders reported that challenges were related to practitioners initially tending to want guidance and feedback (including being told what they were doing wrong). Program Leaders had to emphasise to video feedback session participants that the goal was that they themselves reflect on practice, which some found difficult:

> *I had one just like that, not a very reflective person, and wanted me to tell her what she was doing wrong. She shifted a bit by the time she'd done the final video, but the whole process for her is just not, it was very foreign.* (Program Leader 3, Paired interviews with Program Leaders)

*Greater understanding of language development and additional needs*

Increased awareness and identification of children's conversational styles is one of the medium-term outcomes in the logic model. In line with this outcome, nursery managers and Program Leaders commented that practitioners had gained a greater understanding of how children's communication develops. Practitioners therefore found it easier to identify children's communication styles and language levels, and now had different expectations for pupils at different levels of language development. Program Leaders felt that video feedback sessions specifically helped increase this awareness.

Trained practitioners' survey responses also align with this outcome, with more than nine out of ten (out of 57) agreeing that:

- their understanding of children's language development had improved (95%);
- their understanding of approaches to support children's language development had improved (97%); and
- their ability to recognise children's conversational styles had improved (91%).

Similarly, the majority of non-trained practitioners (69% of 35 respondents) agreed their ability to recognise children's stage of language development had improved as a result of their colleagues sharing Hanen LLLI learning and resources (described in the section 'Cascading' in 'Fidelity' section above).

Communicate SLT CIC staff reported that the increased knowledge of language development helped practitioners know when to use which strategy, and that looking more at conversational styles was something practitioners said they intended to continue for future cohorts, implying that practitioners had found the approach engaging and effective. Building practitioners' awareness and identification of children's conversational styles is an intended medium-term outcome in the logic model, and conversational styles (e.g. 'sociable', and 'reluctant') are explicitly covered in the Hanen LLLI training sessions and practitioner resources.

Similarly, a view from both nursery leaders and Communicate SLT CIC staff was that Hanen LLLI training supported practitioners in working with children with SEND and EAL, since practitioners were better able to identify if children had additional needs. Communicate SLT CIC staff added that practitioners had given feedback to them or SLTs about particular children's language and communication, which helped with referrals and accessing speech and language therapy support. This perspective aligns with a further medium-term programme outcome, that Hanen LLLI would lead to an increase in early identification of language delays, and earlier interventions where needed, though our evidence points to interventions happening more often rather than earlier (the latter is not discussed in participant accounts). Perceived outcomes for EAL children and those with SEND are discussed further in 'Perceived benefits for children' section, below.

*Engaging with LLLI community*

Nursery staff engaging with the LLLI community is one of the long-term outcomes of the intervention, set out in the logic model. In addition, Program Leaders are expected to facilitate peer support, one of four aims of Hanen LLLI, by giving practitioners from different settings the opportunity to share ideas and experiences with one another. Program Leaders' and practitioners' accounts suggest that they do perceive this outcome and aim being achieved.

Program Leaders observed practitioners making links with other settings, for example, getting in touch outside of sessions or visiting other settings. Program Leaders explained that while this was not part of Hanen LLLI guidance, it

was an aim of the trial, and important for practitioners to establish a *'language community'* (Program Leader 2, Paired interviews with Program Leaders) and continue to support each other, in line with this logic model outcome.

Practitioners also reported having learned from peers from other settings through the programme:

> *I think [Hanen LLLI has] been a positive thing. It's been interesting meeting other people as well, and how different settings work, and getting ideas*. (Practitioner 6, Ongoing delivery interviews, PVI setting).

*Relationships with children*

The logic model includes a medium-term outcome for staff of 'improved teacher–child relationship'. The equivalent outcome for children refers to 'increased quality and quantity of interactions with teachers and peers', together with a longer term impact of improved behaviour and relationships.

Practitioners expressed two different perspectives on whether Hanen LLLI had had an impact on their relationships with the children in their setting. One view was that there had not been improvements as practitioners already had good relationships with the children. Another view was that there had been improvements, in particular positive changes to interactions. For example, managers observed that when they walked around the nursery, they could see members of staff doing activities with children all around them.

Trained practitioners' survey responses reflected these different views: over three-quarters of practitioners (77%) agreed with the statement that their relationships with the children at the nursery had improved as a result of Hanen LLLI, while 19% chose the neutral response to this statement (out of 57 respondents). Two-thirds of non-trained practitioners, 66% agreed their relationships with the children at the nursery had improved as a result of colleagues sharing learning and resources from Hanen LLLI (out of 35 respondents). In addition, nine out of ten trained practitioners (91%) agreed that children had more high-quality interactions with staff as a result of the intervention.

Practitioners attributed the improvement in relationships to specific changes in their interactions:

- Interactions were more manageable because staff were spending more time interacting, and specifically in smaller groups. Practitioners added that children had benefited from the smaller group work. Managers commented that practitioners attending the training felt that:

  > *They've been able to make small adjustments that have had a big impact, […] they feel like they're getting a lot more out of the children as a result. The training's highlighted the benefit of small group work, and that's something they'd always like to do a lot more of.* (Nursery manager 8, Ongoing delivery interviews, maintained setting)

- Staff were thinking about how to make interactions richer and more meaningful.

- Interactions were slower, because staff made sure children had time to answer, even when there are time pressures:

  > *I think because I repeat back what they say, I'm pausing, I'm not rushing through our conversations, […] that's helped the children think that […] my teacher is taking some time out and trying to understand what I'm saying.* (Practitioner 10, Ongoing delivery interviews, maintained setting)

*Difference in programme outcomes between staff*

This section covers variation in outcomes for staff, first in terms of their level of experience, and then in relation to the extent of cascading within settings.

<u>Level of experience</u>

Practitioners who took part in the Hanen LLLI training had a range of experience levels: 11% of practitioners responding to the survey had between zero and two years' experience in the EY sector, while just over half (54%) had ten or more years' experience (out of 57 respondents). PVI settings tended to have slightly less experienced staff attending Hanen LLLI training compared to maintained settings (e.g. a greater proportion of PVI respondents reported zero to two years

of experience, and a smaller proportion reported ten or more years of experience than maintained settings), though it should be noted that the number of PVI respondents was very small (n=16).[33]

A recurring perspective from managers and practitioners was that Hanen LLLI training had particularly benefited less experienced staff. One view was this was because the programme had boosted the confidence in less experienced staff more than it had for experienced staff, for whom it had more affirmed their existing practice (see 'Reinforcing pre-existing knowledge' section above). Practitioners also expressed the view that outcomes for more experienced staff were leading to additional benefits for less experienced staff: less experienced staff were benefiting from experienced staff feeling more empowered to share their knowledge with colleagues; and from being able to observe experienced staff's more positive interactions with children.

Communicate SLT CIC staff commented that for less experienced staff, (e.g. at National Vocational Qualification or apprentice level), or for those who had accessed less training (such as those in PVI settings), Hanen LLLI was often their first training course. Communicate SLT CIC staff believed this helped these practitioners adopt Hanen LLLI practices more easily. By contrast, for more experienced staff, Communicate SLT CIC staff expressed the view that the benefits depended on practitioners' previous training experience, and whether other training emphasised different priorities to Hanen LLLI.

An alternative view from managers and practitioners was that there had not been differences in Hanen LLLI's benefits between staff members. Program Leaders felt both experienced and less experienced staff had benefited from the training and gained confidence, while managers said that all staff were adopting strategies, which were enhancing their practice, despite the range in experience.

It is worth noting that one view from those who felt all staff had benefited equally nevertheless linked this to practitioners' levels of experience: attributing the similarity in outcomes to nursery staff all being very experienced; or, contrastingly, to the fact that more experienced staff were explaining strategies to less experienced colleagues in more detail, with the result that all staff were benefiting. See 'Cascading' in Fidelity section above for more detail on knowledge sharing between staff.

While not explicitly linking this to experience level, practitioners also reported that some practitioners were reluctant to change their practice:

> *There's staff that like to try and improve their practice to improve the outcomes of children, and then there's the other staff that are stuck in their ways to take on change.* (Practitioner 13, Online site visit interviews, PVI setting)

<u>Extent of cascading and embedding Hanen LLLI practice</u>

A view shared by managers, practitioners, and Communicate SLT CIC staff was that the extent of cascading had led to differences between and within settings in the adoption of Hanen LLLI strategies (and therefore in benefits for staff). Practitioners who said not all Hanen LLLI training had been cascaded reported that not all practitioners in the setting had changed their practice. For example, non-trained practitioners were waiting for less time (OWLing) compared to trained practitioners.

Communicate SLT CIC staff similarly reported that settings who had prioritised cascading and incorporated Hanen LLLI strategies into planning and staff meetings had seen greater benefits. They partly attributed this to buy-in from settings' senior leadership teams. Communicate SLT CIC staff added that, in contrast, PVI settings tended to have fewer opportunities to discuss training as a result of longer opening hours and fewer team meetings.

In addition to cascading, practitioners and Program Leaders also discussed the extent to which Hanen LLLI practice was embedded in a setting. Practitioners who described Hanen LLLI training as embedded in their setting observed that non-trained staff were also using the strategies, and that when new staff joined the setting they also learned about the programme.

[33] A Department for Education report based on a survey of childcare and EY providers similarly reported that maintained setting practitioners were more likely than those from PVI settings to have a Level 6, or degree level, qualification (32% compared with 11%) (Haux, et al. 2022).

In contrast, Program Leaders noted that cascading learning to all staff would be a long-term process:

> *To really embed changes in practice, you probably have to look another 12 months ahead. […] One of my visits today made me think about […] a setting I worked with in the past, who won lots of national awards for speech and language and communication practice, but it took them a long time to get there. […] It's a big job to change practice in a setting.* (Program Leader 3, Paired interviews with Program Leaders).

**Perceived benefits for children**

Programme outcomes for children are measured both through the IPE and the impact evaluation (using the BPVS-3, RAPT, and SDQ measures). As set out in the logic model, Hanen LLLI aimed to improve specific aspects of children's language and communication, and over the longer term, deliver wider learning and social and emotional benefits. Nursery managers and practitioners recognised benefits for children (including in the IPE practitioner survey), however in qualitative interviews respondents were cautious about making assertions about the impact of the intervention and expressed some scepticism about the extent that the intervention could lead to measurable change in outcomes. In this way, the IPE findings, while positive, do support the impact evaluation results that showed no or small impact on child-level outcomes.

Nursery managers and practitioners reported on a range of outcomes for the children in their setting. These participants observed both general improvements in children's language and noted improvements in particular aspects of language and communication. In addition, they reported that Hanen LLLI had benefited children's confidence and peer interactions.

Practitioners tended to discuss improvements in relation to particular children, rather than referring to the whole cohort of children exposed to Hanen LLLI-trained practitioners. This was also noted by Program Leaders, who commented that practitioners generally reflected on outcomes by discussing individual children who had responded well to Hanen LLLI strategies. Practitioners similarly tended to feel unable to comment on how the speech and language development of the current year's cohort compared to previous cohorts but, did reflect on how the intervention had benefited children with particular characteristics, such as EAL pupils, those with SEND, or those with 'reluctant' communication styles.

However, another view from participants was that they felt unable to comment on the programme's perceived benefits for children. Managers tended to feel unable to comment as they did not spend enough time with the children. Practitioners expressed that it was too early to see benefits, adding that benefits would partly start to be seen once training had been cascaded and more staff were using Hanen LLLI strategies.

*Improvements in quantity and quality of interactions*

While practitioners were more likely to report improvements of particular children, they also reflected on general improvements in the quality and quantity of children's interactions with practitioners and peers, a medium-term outcome in the logic model. Program Leaders reported that practitioners were attributing increases in peer interaction and interactions with adults to Hanen LLLI strategies. Trained practitioners' survey responses reflected this: a clear majority of respondents (82% of 57 practitioners ) agreed with the statement that, as a result of Hanen LLLI, children were more likely to initiate interactions (supporting the outcome of an increase in child-initiated interactions); and nearly three-quarters (74% of 57 practitioners) agreed with the statement that, as a result of Hanen LLLI, children were having more high-quality interactions with peers. In IPE interviews, practitioners described children as keener to engage in conversations and discuss interesting experiences.

> *[Practitioners are] obviously really attracting those children to them with the opportunities they're providing, and they are having more conversations, a lot of back-and-forth conversations. I can see that the interactions are much more child-led; I can see that the children are having time to think about their responses; I can see that the children are interacting with each other in a more positive way.* (Nursery manager 8, Ongoing delivery interviews, maintained setting)

Communicate SLT CIC staff mentioned that video feedback sessions were one way in which practitioners recognised these improvements: practitioners observed how a particular child had become more interactive comparing between earlier and later video feedback sessions.

*Improvements in language*

In addition to more and higher quality interactions, practitioners perceived improvements in specific aspects of children's language. The long-term outcomes of increased receptive and expressive vocabulary are also measured specifically by the BPVS-3 and RAPT assessments, as part of the impact evaluation (see 'Impact evaluation results' section above). In addition, in one instance, a setting also reported that more children had scored highly in a regular language screening than previously.

The improvements practitioners reported in IPE interviews included that:

- Children were asking questions more effectively, rather than shouting practitioners' names.
- Children were using more complex sentences. Practitioners attributed this to staff using more complex sentences when communicating with children and making children correct themselves when needed.
- Children's length of utterances had increased, an outcome set out in the logic model. Further, the great majority of trained practitioners (79% of 57 practitioners) responded in the survey that they agreed that children's length of utterances had increased.
- Children's vocabulary had improved, and children were more receptive to new language. In some cases, practitioners highlighted improvements specifically for older children or late sentence users. Examples given of improved vocabulary included that children were using more specific words like 'pouring' and 'sieving' as a result of practitioners modelling this language, and that children used a wider range of vocabulary without practitioners needing to emphasise the vocabulary as much as they had previously.

Practitioners partly attributed language improvements to an increase in engagement with activities:

> *When you use some of the Hanen techniques you can actually see children becoming more engaged in an activity and then you're getting more from them and you've got time to teach them more language.* (Practitioner 12, Online site visit interviews, maintained setting)

*Social and emotional improvements*

In addition to language and interaction, practitioners perceived benefits for children's social and emotional development, for example, in terms of confidence. While increased social skills is a long-term outcome, increased confidence is not explicitly set out as an intended outcome in the logic model, though it is likely linked to these other outcomes. More broadly, both improved relationships and increased social and emotional development are included in the logic model as longer term impacts of the intervention. Social and emotional development is also measured in the impact element of the evaluation, through the SDQ measure.

> *I think language can really help support children in feeling good about themselves.* (Nursery manager 1, Ongoing delivery interviews, PVI setting)

Examples of increased confidence included children more actively seeking out practitioners to conduct activities together, and children being more confident sharing their ideas, including non-verbally.

Practitioners observed a range of improvements in relationships between children, suggesting increased social skills, including that:

- children were more *'accepting'* (Practitioner 14, Online site visit interviews) of other children;
- children felt more settled and part of the class; and
- children socialised more outside of their established groups of friends and were excited to communicate with those in other groups, improving the bonds between a wider group of children.

Similarly, in the trained-practitioner survey, most practitioners (82% of 57 practitioners) agreed that children's social skills had improved.

As for recognising language benefits, Program Leaders commented that comparing between video feedback sessions videos showed improvements, citing the example of an 'own agenda child' whom they observed had become a sociable, ‘later sentence user’ with good peer interactions.

*Differences in outcomes between children*

This section describes findings on whether and how outcomes varied for different children. While participants tended to feel unable to comment on outcomes across the cohort exposed to Hanen LLLI compared to previous cohorts (see below), they did reflect on which groups of children had particularly benefited from the programme.

Comparison with previous years’ cohorts

As discussed at the start of this section, practitioners tended to report observing improvements in individual children, more than reflecting on the cohort of the academic year’s intake of children. However, practitioners and managers expressed that it was difficult to comment on the whole cohort’s improvement as a result of Hanen LLLI, both because of the natural improvements in children’s development over the course of a year, and because Covid-19 had impacted different years’ cohorts differently.

> *It's hard with it being over such a long period of time. They make such a lot of progress anyway within the year at this age. I guess it's hard to know what's come from what we've been doing, and what just would have come naturally as well.* (Practitioner 15, Online site visit interviews, maintained setting)

Practitioners additionally reported that other elements of the settings’ approach to speech and language (such as Talk Boost or sessions delivered by language practitioners) would make it hard to attribute outcomes directly to Hanen LLLI, as did the lower language level of the year’s particular cohort in other cases (e.g. due to a larger intake of EAL pupils).

Perception that Hanen LLLI benefited all pupils

Though not directly comparing to previous cohorts, one view from practitioners was that Hanen LLLI had led to improvements in all children’s language. This was felt to be a particular benefit of Hanen LLLI, in comparison to other interventions:

> *It's actually good for all children whether they're later sentence users, early sentence users. It's good for everyone, really. It's nice that it's not like an intervention where you take children out or do that. It's nice that it's just you within your class as part of your day.* (Practitioner 12, Online site visit interviews, maintained setting)

Other practitioners expressed a slightly conflicting view that Hanen LLLI’s emphasis on small group work meant that children not in the smaller group received comparatively less attention from staff. However, practitioners expressing this view added that they did not feel this would have a negative impact on these children, as overall Hanen LLLI was more beneficial than negative. Practitioners partly attributed seeing outcomes across children to the fact that, through Hanen LLLI, staff were more aware of the different levels of support required for each child, as discussed in ‘Perceived benefits for practitioners’ section, above.

Across settings, Communicate SLT CIC staff commented that they had not observed differences in outcomes for children between maintained and PVI settings.

Benefits for pupils with particular characteristics: SEND, EAL, and ‘reluctant’ communication styles

While this was not tested as part of the impact evaluation, the IPE found a view from practitioners was that Hanen LLLI had especially benefited pupils with particular characteristics, namely EAL pupils, those with SEND, or those with ‘reluctant’ communication styles. These findings are reported and could identify potential hypotheses for future trials and opportunities for adaptation and targeting the intervention in future delivery.

For EAL pupils, practitioners reported outcomes including improved vocabulary and an increase in pupils initiating conversations and speaking in sentences. Reflecting on benefits for children with SEND and additional communication needs, practitioners observed an increase in non-verbal interactions and communications. Practitioners highlighted that being face to face and making eye contact were useful strategies for supporting children with speech and language delays and other SEND.

> *We've seen a difference in their interactions with other children and vice versa, the children's interactions with them. I think Hanen and what we've learned has had something to do with that.* (Practitioner 4, Online site visit interviews, maintained setting)

However, a different perspective came from practitioners who felt they could not comment on outcomes for pupils with SEND, as they had not used Hanen LLLI strategies with them. Reasons for this included that these pupils were participating in another programme in one setting (though staff were considering extending their use of Hanen LLLI strategies to this group in future); and there was a view that working with EAL pupils and those with SEND had not been covered in the programme training. Regarding the latter, a review of Hanen LLLI workshop materials suggest that none of the core training videos focused on supporting EAL pupils or those with SEND. There was optional content including a video about working with children 'with delay' (the terms EAL and SEND were not used); in the workshops that we observed these videos were not shown to participants.

Practitioners highlighted 'reluctant' communicators and quiet children as another group whose language and communication had been particularly benefited by Hanen LLLI. They noted these children were communicating more with all members of staff, initiating more conversations, and were more willing to join in with other children. These improvements were attributed to practitioners making more of an effort to involve these children, facilitated by more reflective practice (see 'Perceived benefits for practitioners' section above, for more detail). For example, a practitioner explained that being more reflective enabled her to engage reluctant children by thinking more about the questions she asked and observing children's behaviour.

Practitioners and Communicate SLT CIC staff both reported that practitioners were noticing children who needed more time or more interaction opportunities:

> *The confident children can get that conversation from you a lot quicker, so it's trying to remember in the moment not to have our attention swept away by the confident children and to include the other children as well. To recognise that they're there and look interested in what's going on, but might not have the confidence to come and join in and have a talk about things.* (Practitioner 8, Online site visit interviews, PVI setting)

Practitioners also noted that staff encouraging more confident children to wait and listen to quieter children, and staff putting less pressure on more reluctant communicators by asking fewer questions, had benefited quieter children. Practitioners had observed these children initiating more conversations as a result:

> *They're all still being involved, but because there's no pressure there, they're just saying, 'Oh, I'm doing this,' and it's nice to see. So I have definitely seen an improvement.* (Practitioner 16, Online site visit interviews, PVI setting)

**Perceived benefits for settings**

Practitioners discussed having made changes to the nursery environment as a result of Hanen LLLI training. They described changes to the physical spaces in the setting, the structure of the day, and to the resources available, with the goal of fostering more opportunities for children to communicate with peers and practitioners. Though changing the nursery environment is not an outcome in the logic model, the intended content for Hanen LLLI session 7 'Foster peer interaction' covers setting up classroom environments, which encourage interaction. Changing the setting environment can therefore be considered a mechanism, which is intended to lead to the pupil outcome 'Increased quality and quantity of interactions with teachers and peers'.

- **Physical spaces:** practitioners described making the spaces children found most engaging, or which encouraged more interaction, larger, and more accessible for the children. Practitioners felt these changes had facilitated children talking to each other and developing stories together, and made children feel their interests were being acknowledged and reflected in the setting environment. Practitioners specifically emphasised changing nursery spaces to facilitate small group working, for example, by creating quieter spaces for small groups of children to talk more to each other and practitioners.

- **Resources:** practitioners described adding resources to the setting to encourage children's conversations, for example, adding puppets and ensuring resources were labelled. In terms of resources for staff, practitioners mentioned having Hanen LLLI posters in the setting (though did not elaborate on the content of the posters). Practitioners also discussed using Hanen LLLI-related

posters as part of the dissemination of learning within the setting, or as prompts to help them remember Hanen LLLI strategies.

- **Changes to the structure of the nursery day:** practitioners largely did not discuss having made changes to the structure of the nursery day. However, one example practitioners gave was starting the nursery day outside, to encourage interaction. They explained that physical activity outside had improved children's communication and interactions because most children at the setting lived in flats with limited access to the outdoors.

However, another group of setting staff reported that there had not been changes to the nursery day or environment as a result of Hanen LLLI, or alternatively, that they could not attribute changes to the intervention (e.g. where changes might have resulted from an increase in the age of children attending the nursery or might have been related to another programme the nursery had engaged with).

**Unintended consequences**

Unintended consequences is defined here as positive or negative changes not detailed in the logic model or programme materials, but which emerged through the IPE findings. Program Leaders reported one unintended positive consequence of Hanen LLLI: practitioners had improved their ability to use technology over the course of the programme.

Managers and practitioners generally did not raise any negative or unintended consequences of participating in Hanen LLLI in IPE interviews, either for staff or children. Similarly, a clear majority of trained practitioners responding to the survey said that there had been no disadvantages for them of taking part in Hanen LLLI (70% of 57 respondents), and that there had been no disadvantages for children from practitioners receiving the training (82%). In addition, two-thirds of non-trained practitioners who responded to the survey (69% of 35 respondents) said that there had been no disadvantages for them or the nursery due to their colleagues taking part in the programme.

The negative consequences of Hanen LLLI raised by practitioners in IPE interviews related either to the challenges of implementing the programme, or to changes in the group teaching received by children. Challenges and barriers to programme implementation and engagement are discussed in more detail in the 'Responsiveness' section above.

Practitioners described the practicalities of implementing Hanen LLLI and of fitting delivery into existing routines as negative aspects of the programme but noted that these challenges were not unique to Hanen LLLI. Practitioners highlighted the challenge of finding cover for those attending training in particular. These reflections echo the trained-practitioner survey findings, in which staffing or finding cover, and time (either taking a lot of time out of the classroom or finding time to record the videos) were the two most commonly mentioned disadvantages for practitioners (7% of 57 respondents spontaneously mentioned each of these). These were also the most commonly mentioned disadvantages among the 35 non-trained-practitioner survey respondents (14% mentioned staffing or finding cover, and 9% mentioned time).

Additionally, in interviews, practitioners implied that non-trained staff might be unsupportive of the amount of time trained practitioners were spending with senior staff for Hanen LLLI:

> *It is an awful lot of CPD. I understand the value of it, but perhaps the wider staff team don't. So their perception is that [trained practitioners are] always doing something linked to [Hanen].* (Practitioner 17, Ongoing delivery interviews, maintained setting)

Practitioners shared that children being less settled in the short term was a potential negative consequence of Hanen LLLI, because when practitioners were covered by other staff in order to attend training, children spent time with staff less familiar to them. Similarly, in the trained-practitioner survey, the most commonly mentioned disadvantage for children (spontaneously mentioned by 7% of 57 respondents) was that staff had to take time out of the classroom (which could lead to disruption or an impact on children). However, in interviews, practitioners reported that the impact on children decreased over time as children developed relationships with the new staff members.

## Usual practice

This section discusses the provision of language and communication activities and interventions in control group nurseries and in treatment nurseries prior to and during the delivery of Hanen LLLI. It explores the extent that these activities and interventions differ from Hanen LLLI. Understanding the difference between Hanen LLLI and usual practice

to support children's language development allows us to better interpret the contribution that Hanen LLLI has made in observed outcomes from the impact evaluation. Additionally, these findings were used to monitor the control and consider whether the risk of contamination in the trial.

Contextual factors, which could impact children's outcome but are out of the settings' or the intervention's control are considered in this section. In particular, the impact of Covid-19 on treatment and control settings, children, and parents is discussed.

**Usual approaches to language and communication**

Practitioners from treatment and control settings stated that the main motivation for using activities and interventions was to improve children's language and development. The activities and interventions that they adopted as part of their usual practice can be classified as follows:

- **Ability assessments:** staff used interventions that assess children's language and communication abilities. Such assessments enabled practitioners to 'screen' children and make referrals to SLTs wherever necessary. These assessments also helped practitioners determine whether the need was related to EAL or language acquisition. Practitioners were then able to plan appropriate activities for the child's ability. Examples of assessments practitioners used include: 'Development Matters'; 'I CAN assessment'; 'Newcastle City Council's EY screening'; and 'Wellcomm'.

- **Play-based activities:** staff encouraged children's communication with peers and adults during social activities, such as 'play and stay' sessions and circle time. One approach used storytelling, nursery rhymes, and dance as a way of developing language and listening skills. Another approach used activities such as playing lotto games, naming toys, or playing 'Kim's game' where children are asked to identify missing objects. One view among practitioners was that children should be able to follow their interests and pick the activities that were most engaging to them. Practitioners mentioned celebrating the *'pupil voice'* (Nursery manager 2, Early implementation interviews, PVI setting) during play to improve children's overall engagement. This was done by paying more attention to the words children were using and practitioners repeating these words to them during play.

- **Techniques used by staff:** setting staff used communication techniques like 'listening time' to demonstrate interest in what the child is saying. They also tried to convey meaning by using non-verbal techniques such as 'Makaton symbols'. As with Hanen LLLI strategies, staff expanded on what the child said, repeated words, and modelled new words using stories and reference objects. Programmes such as 'Early Talk Boost' also trained staff in modelling language in this way.

- **Parental engagement:** settings involved parents in their language and communication strategies by supplying them with 'story bags' and 'puppets' to encourage interactions at home. Some settings ran workshops and informal sessions for parents to help them implement language and communication strategies in the home environment. Some control setting staff mentioned having subscribed to the Hanen newsletter and sharing it with parents so that they would be able to familiarise themselves with the importance of language development. However, control setting staff did not report using any Hanen strategies in their practice.

- **Academic focus activities:** these included: using picture books (e.g. Bookstart); dialogic reading, which strengthens oral language skills by expanding children's vocabulary; providing meanings for words that children use; and promoting new vocabulary by introducing new words and forming relationships between words.

- **Nursery environment:** settings made their nursery rooms a *'language-rich'* (Nursery manager 13, 'Business as usual' interviews, maintained setting) environment by adding visuals that aid vocabulary development to the rooms. Some settings also used an *'open-space approach'* (Nursery manager 14, 'Business as usual' interviews, PVI setting) where children could practise free movements and approach staff members to talk to them. Staff also focused on positional language and made sure that they moved around the nursery classroom so that they were able to give their focus to all children.

- **Tailored interventions:** settings carried out tailored intervention sessions to promote speech and language development among children at different levels. Staff focused on receptive language with some pupils and expressive language with others, based on what the child could follow. Settings also classified children into a 'higher language group' and promoted intensive communication with

early communicators. In addition, they organised *'special time'* (Nursery manager 15, Online site visit interviews, maintained setting) for late communicators who might need more attention.

Treatment and control settings had well-established interventions (see above) in place prior to the Hanen LLLI trial. These interventions were either delivered daily or two to three times per week. They were usually delivered by a member of staff or an SLT. Some interventions required external individuals to deliver activities on site. Some settings targeted children for specific activities and interventions largely based on their language and communication abilities or because of specific characteristics like SEND or EAL. Children either took part in the intervention and/or activities by themselves or as a group. Within groups, children were at times given individual development targets.

*Usual practice in treatment settings*

Setting managers in treatment settings reported that Hanen LLLI strategies were similar to usual practice in terms of their focus on quality interactions between children and practitioners (e.g. other language interventions like the Share attention, Respond, Expand, and Conversation (ShREC) approach). This 'overlap' enabled practitioners to incorporate Hanen LLLI strategies into their usual activities. Attending the training had elevated these strategies to the forefront of their practice and allowed them to have discussions about them as a group and reinforce how to apply them to their work. Although the strategies are similar, practitioners highlighted that the training offered in the programme helped them to become more aware of their personal areas of improvement. For example, after the training, they found it easier to keep their body language more open or to not shut down conversations when children were attempting to say new words.

On the other hand, setting managers also highlighted that Hanen LLLI was different to their usual practice since it was a more structured intervention. Settings generally rely on *'shorter, sharper interventions'* (Nursery manager 11, Online site visit interviews, maintained setting) that only target individual children or pairs of children. The key difference with Hanen LLLI is that it is structured as a whole-setting approach and focuses on strategies for all children. Strategies like OWLing and helping reluctant children were highlighted as new and helpful in daily practice. Additionally, setting managers stated that the programme is aimed towards daily practice and interactions whereas other interventions focus on materials that can be used in specific sessions (e.g. Picture Exchange Communication System [PECS] cards).

Nursery managers from treatment settings reported that they planned to continue carrying out their existing interventions alongside Hanen LLLI. This view was held by staff in treatment settings both during early implementation as well as during the online site visits carried out later in the delivery year. Staff highlighted that it was important to continue to implement learning from all the different training that they had received, because the existing strategies had been working well for their settings. One view among setting managers was that Hanen LLLI was an 'addition' to what they already do at their settings and would work towards enhancing their practice. They stated that Hanen LLLI strategies complemented their existing strategies quite well and they were already implementing some of them without being aware of what they were referred to formally.

An alternative reason given for continuing usual practice alongside Hanen LLLI was that the programme was still new and *'untried'* (Nursery manager 16, Online site visit interviews, PVI setting) at their setting and they would not want to risk using it as a replacement for what already works for them. Additionally, setting managers expressed the view that Hanen LLLI was not as *'measurable'* (Nursery manager 16, Online site visit interviews, PVI setting) as other tools (e.g. Wellcomm) when it came to assessing where a child is in their language and communication development.

*'Business as usual' at control settings*

Interviews with setting managers at control settings explored their priorities for language and communication development in the absence of being involved in the Hanen LLLI programme. Setting priorities are intended to take account of all children, including those with particular needs, and the EYFS curriculum allows for some flexibility in choosing these priorities. Setting managers reflected on their main priorities, which fell under the following categories:

- **Developing communication and language:** a key area as a part of a bigger post-pandemic focus to support children with emotional regulation and behaviour. Listening is considered a part of developing language and communication since being able to respond stems from good listening. Also, language development is viewed as a gateway to other learning and linked to fine and gross motor development in children.

- **Personal and social development:** this has become more important after the pandemic since many children are not used to being in a group and engaging in play. This means that settings have to work at different speeds with individual children to make them more comfortable with playing in groups.

- **Developing children's independence:** including self-care (e.g. washing hands on their own). This independence is also connected to children being able to listen to instructions from setting staff, express their own needs to them, and build their confidence.

One view from nursery managers in control settings was that language and communication development was a key priority for them since it impacts other areas of learning. If children are unable to express themselves adequately, staff are unable to evidence their learning across different areas. However, another view among nursery managers was that developing language and communication was a lower priority compared with social skills. They explained that children had been unable to mix with others due to the pandemic and had a poor understanding of sharing with others and playing in a group, and this took precedence for their settings over developing language.

Interviews with control setting managers revealed that setting staff found their existing approaches to language and communication development effective, especially when they focused on maximising the interactions between children and the staff. When staff used a combination of approaches like commenting, storytelling, and Makaton signing, they reported seeing marked improvements in communication among their children. However, setting managers highlighted that such activities could be time-intensive, and they needed to juggle the children's needs around staff availability. Additionally, if children required one to one time, this involved taking the staff member away from the rest of the cohort, which was not always possible since they had to be mindful of staff ratios and resourcing. The baseline and endline videos found that practitioners in the control settings were using similar strategies to Hanen strategies in their settings.

They mentioned that while the setting priorities applied to the whole setting, this was sometimes combined with focusing on the needs of particular children. One way of doing this was by splitting the children into different *'group times'* (Practitioner 18, 'Business as usual' interviews, maintained setting) based either on their attention skills (e.g. bucket time where visually stimulating toys are presented to pupils who find it harder to focus) or on their age (e.g. younger children did other activities while older children learned letters). Additionally, setting staff ensured that the nursery environment was accessible to children with EAL and they also organised special activities with children with special needs to encourage language development.

Nursery managers from control settings did not report that any new interventions or activities were introduced as a result of their allocation to the control group. Our data suggest that they were largely doing the same activities with children as they were before the trial, which in some cases included manualised communication and language interventions. Some control setting managers listed a number of other language and communication interventions that their settings had taken part in. However, these were either carried out a few years prior to Hanen LLLI (e.g. Experts and Mentors programme) or focused on older children in Foundation Stage-2 (e.g. Nuffield Early Language Intervention [NELI] and Speech Link). Interventions like NELI focus more on vocabulary development while Speech Link is specific to children with speech pronunciation problems. Also, interventions like Nursery Natters were being used by nursery staff to interact with children without overwhelming them with words. One view among setting managers was that the learning from these programmes was spilling over to the nursery classes as well.

**Impact of Covid-19**

Staff members from treatment and control settings discussed the impact that Covid-19 had on their settings, children, and parents. This was discussed particularly in the context of language and communication development among children at the nurseries.

*Impacts on settings*
As a result of the Covid-19 pandemic, treatment and control settings had to focus more on language development among children. Staff reported that children were experiencing language delays and settings faced challenges in getting children assessed for language and communication difficulties.

For the children who could not come into the nurseries, staff members focused on online modes of teaching (e.g. Google classroom, Evidence Me learning) and online videos for storytelling and reading. They also posted activities online for children to do with their parents. During the school closures, staff members mentioned providing additional support to parents by phoning them or posting resourceful links on how they could make use of the online platforms. Practitioners

found it challenging to engage with children when they were at home and had varying success in terms of parental engagement with these resources.

One view among treatment and control setting staff was that the focus had shifted more towards language and communication rather than literacy and maths as a result of the pandemic. Setting managers reported that they had to change their previous approaches to meet the changing needs of the children. Practitioners also expressed frustration in terms of the missed opportunities that the children had faced due to the pandemic. They felt that there was a need to bridge the gap in a very short period of time, which meant settings had to be more focused on formulating a strategic approach to language and communication development. This also made some setting managers reflect on a need for more staff training after the pandemic.
An alternative view was that their focus and strategies had not shifted as a result of the pandemic. This was because setting staff felt that it was important to continue as normal during a difficult time. This view was especially held in settings that remained open during the pandemic and where there was a pre-existing *'language-rich environment'* (Nursery manager 13, 'Business as usual' interviews, maintained setting) and a strong belief in activities like storytelling and asking open-ended questions. Within these settings, setting managers highlighted that they remained consistent in their approaches but had to give greater attention and spend more time going back to the basics of language and communication development with their children.

*Impacts on children*
Practitioners in treatment and control settings reported that the pandemic had highlighted the importance of children's language and communication development. They stated that the number of children with additional needs had increased after the pandemic and 'lockdown babies' (Nursery manager 12, Early implementation interviews, PVI setting) had experienced less social interaction when compared with earlier cohorts. Many children with difficulties had not received any interventions and had been unable to effectively access health visitors due to the pandemic. This meant that parents might not be aware that their children were experiencing delays in development. Additionally, setting managers highlighted that language development had particularly been delayed in EAL children since they had not had the chance to be exposed to a full-time English-speaking nursery. As a result, settings had to monitor the children in more in-depth ways and ensure that they had more meaningful interactions with them for their development.

> *I think we need to think more about and be more skilful in our interactions and be more conscious of what we're saying, what we're doing, being at their level, giving them time.* (Practitioner 19, Early implementation interviews, PVI setting)

*Impacts on parents*
In treatment as well as control settings, managers reported that parents had to get more involved with the resources and online platforms as a result of the pandemic. Settings sent home learning to children in the form of nursery rhymes and treasure hunts, which helped parents ask children more questions and engage with them. One view was that parents were now more at ease with accessing and engaging with online resources, due to their experience of doing so during the pandemic.

# Cost

## Time costs

Settings were asked about the number of additional hours it took to implement Hanen LLLI. These hours were the additional hours that nursery practitioners spent on the different training activities relating to the programme. Once the staff had been trained in Hanen LLLI it was assumed that the programme delivery would take place in normal teaching time. The programme developer, Communicate SLT CIC, were asked about the time spent on training Program Leaders and the time Program Leaders spent delivering the Hanen training to nursery practitioners. Table 38 shows the mean amount of time spent on different activities as reported by the developer, and the 24 settings who responded to the cost survey. Only the first year of the programme is presented in Table 38, as all of these training activities can be considered 'start-up' activities, thus would not need to be repeated in subsequent years of the programme.

*Table 38: Additional time spent on training and implementing Hanen LLLI*

| | | | Year one | | | | |
|---|---|---|---|---|---|---|---|
| | | Practitioner/ Program Leader | Number of practitioners/ Program Leaders | Mean number of hours | SD | Range (min–max) | n |
| Training | All Program Leaders training activities | Program Leaders | 2 | 558 | 0 | N/A | 1 |
| Delivery | All Program Leaders delivery activities | Program Leaders | 2 | 1,906 | 0 | N/A | 1 |
| Training | Information events | Practitioner | 148 | 9.3 | 17.1 | 47 (1–48) | 7 |
| | Virtual introductory workshops | Practitioner | | 4.7 | 3.7 | 11 (1–12) | 17 |
| | Baseline visit | Practitioner | | 4.8 | 11.9 | 54 (1–55) | 20 |
| | Post-programme visit | Practitioner | | 8.0 | 25.7 | 119 (1–120) | 21 |
| | Group workshops | Practitioner | | 150.3 | 430.0 | 1,739 (21–1760) | 16 |
| | Accessing resources, tools, and networking | Practitioner | | 6.7 | 3.4 | 10 (2–12) | 10 |
| | Video feedback sessions | Practitioner | | 13.3 | 7.7 | 28 (4–32) | 18 |
| | Sharing learning with non-Hanen trained colleagues | Practitioner | | 14.1 | 24.6 | 99 (1–100) | 15 |
| | Virtual information cascading support | Practitioner | | 1.1 | 1.9 | 6 (0–6) | 13 |

*N/A, not applicable.*

## Financial costs

The developer, Communicate SLT CIC provided details on the financial cost to provide Program Leaders with equipment and facilities, to train Program Leaders, and for Program Leaders to provide training to settings. The following categories of start-up costs were collected from the developer: training Program Leaders, including facilities and materials for training; and Program Leaders delivering Hanen LLLI training to nursery practitioners including salary, materials, and other expenses. Providing technical equipment to nurseries was considered a pre-requisite as many nurseries already had this equipment. The total cost has been calculated both including and excluding this pre-requisite cost. Settings provided details on the financial cost spent on cover for practitioners to attend Hanen LLLI training activities, and other expenses incurred such as travel time. These were considered start-up costs. No recurring costs were identified for either the developer or settings, meaning that in years two and three of implementation, costs of the programme would significantly reduce.

The cost per pupil per year calculation uses an estimate of the number of pupils who would benefit from the programme. This was based on the average number of pupils who were enumerated within the 70 Hanen LLLI settings (n=29). As the programme was a whole-class intervention, all three- and four-year-olds in the nursery were expected to benefit. The enumeration data gives a more accurate picture of the number of pupils within each nursery and is a much higher number than the number who took part in the endline data collection, as outcomes were collected from a random sample

of the total pupils enumerated. A small number of pupils were not enumerated because consent was not given for them to take part in the study. This means that the cost estimates are conservative and the intervention may have benefited more pupils than were enumerated.

As shown in Table 39, the cost to the developer of delivering Hanen LLLI over a three-year period was £25.17 per pupil per year. When pre-requisites were included (technical equipment for settings) the cost per pupil per year increased to £30.23.

*Table 39: Cost of delivering Hanen LLLI – developer costs*

| Item | Type of cost | Cost | Total cost over three years | Total cost per pupil per year over three years |
|---|---|---|---|---|
| Pre-requisites | | | | |
| Technical equipment | Pre-requisite for settings to take part in Hanen | £10,280.07 (total spent for all settings) | £10,280.07 | (+£10,280.07/(70*29)) **=£5.06** |
| Start-up costs | | | | |
| Materials and equipment for Program Leaders | One-off cost per setting | £555.51 | £555.51 | (£2,189.72/3/29) **= £25.17** (without pre-requisites) |
| Facilities to carry out Hanen activities | One-off cost per setting | £380.88 | £380.88 | |
| Expenses for Program Leaders to deliver training to settings | One-off cost per setting | £976.57 | £976.57 | |
| Expenses to train Program Leaders | One-off cost per setting | £276.76 | £276.76 | |
| Total (start-up costs) | | £2,189.72 | £2,189.72 | |
| | | | | (£5.06+£25.17) **= £30.23** (with pre-requisite) |

Table 40 shows the cost to settings of delivering Hanen LLLI over a three-year period was on average £1,594.67 per setting. All the costs incurred by settings can be considered start-up costs and so the per pupil per year cost to settings over a three-year period is £18.33. Overall, the per pupil per year cost of delivering Hanen LLLI is £43.50[34] (excluding pre-requisites) or £48.56[35] (including pre-requisites). Hanen LLLI is therefore deemed to be a very low-cost intervention (see Appendix A).

*Table 40: Cost of delivering Hanen LLLI – setting costs*

| Item | Type of cost | Mean cost | Total cost over three years | n | Range (min–max) | Total cost per pupil per year over three years |
|---|---|---|---|---|---|---|
| Baseline visit | Start-up cost | £78.82 | £78.82 | 11 | £200 (£0–200) | |
| Virtual information cascading support | Start-up cost | £54.89 | £54.89 | 9 | £250 (£0–250) | |
| Information events | Start-up cost | £203.25 | £203.25 | 4 | £560 (£40–600) | |
| Post-programme visit | Start-up cost | £79.08 | £79.08 | 12 | £200 (£0–200) | |

[34] £25.17 + £18.33 = £43.50
[35] £5.06 + £25.17 + £18.33 = £48.56

| | | | | | | |
|---|---|---|---|---|---|---|
| Group workshops | Start-up cost | £732.10 | £732.10 | 10 | £1,760 (£0–1,760) | |
| Video feedback sessions | Start-up cost | £223.10 | £223.10 | 10 | £500 (£0–500) | |
| Virtual introductory workshops | Start-up cost | £134.43 | £134.43 | 7 | £532 (£0–532) | |
| Travel costs | Start-up cost | £89.00 | £89.00 | 10 | £310 (£10–320) | |
| Total | | | £1,594.67 | | | (£1,594.67/3/29) **= £18.33** |

*Table 41: Cumulative costs of Hanen LLLI (assuming delivery over three years)*

| | Year one | Year two | Year three |
|---|---|---|---|
| Hanen LLLI | £3,718.70 | £0 | £0 |

# Conclusion

*Table 42: Key conclusions*

| Conclusions |
|---|
| 1. Children in Hanen LLLI settings made the equivalent of one additional months' progress in language development, as measured by the BPVS-3 scores, on average, compared to children in other settings. These results have a moderate to high security rating. As with any study, there is statistical uncertainty regarding this impact consistent with small negative impacts or higher positive impacts. As a result of this uncertainty, the evaluator was unable to conclude that this was a genuine effect. |
| 2. Children in Hanen LLLI settings made the equivalent of one additional months' progress in language development, as measured by the Renfrew Action Picture Test. Fifth Edition (RAPT) grammar or information scores. Similarly to the primary outcome, the evaluator was unable to conclude that this was a genuine effect. The evaluation also found no evidence that children in Hanen LLLI settings had any differences in socio-emotional behaviour as measured by the Strengths and Difficulties Questionnaire-Teacher version (SDQ-T) scores. |
| 3. Children in Hanen LLLI settings who were eligible for Early Years Pupil Premium (EYPP) made the equivalent of one additional months' progress in language development as measured by the BPVS-3 scores, on average, compared to EYPP eligible children in other settings. The evaluator was unable to conclude that this was a genuine effect due to the statistical uncertainty around the effect size, and the sample not being sufficiently powered to detect an effect of this size. |
| 4. Children in Hanen LLLI settings with lower initial language development made the equivalent of one additional months' progress in language development as measured by the BPVS-3 scores on average, compared to children with lower initial language development in other settings. Similar to the primary outcome, the evaluator was unable to conclude that this was a genuine effect. |
| 5. The IPE found evidence of improvement in nursery practitioners' practice, and an increase in the quantity and quality of interactions with children. It also found that Hanen LLLI was delivered with fidelity, and compliance standards were largely met by participants. Hanen LLLI was generally perceived positively by trained practitioners and Program Leaders, as well as staff in participating nurseries, even if they were not directly involved with the intervention. Cascading varied across settings, but the IPE found that it was perceived positively as a vehicle to increase the intervention's impact on children, although it required greater structure and guidance to implement it well consistently. |

## Impact evaluation and IPE integration

In this chapter we synthesise the findings from the impact evaluation and the IPE. We discuss the extent that findings aligned with the logic model and offer recommendations for developing the logic model based on learning from the evaluation. We present an interpretation of the results from the evaluation that the key conclusions were drawn from, connecting them to the research questions and hypotheses while also reflecting on the limitations of the evaluation.

**Evidence to support the logic model**

Evidence to support the logic model is mixed. There is strong evidence that Hanen LLLI can be implemented as described in the logic model and programme implementation is perceived positively by participants. The IPE found some evidence of outcomes for Hanen-trained practitioners whereas there is weak evidence of outcomes for children, and effects on receptive and expressive vocabulary and social and emotional development were not detected through the RCT. Opportunities to refine the logic model based on findings from the evaluation are discussed in this section.

*Inputs, activities, and outputs*

Findings from the evaluation indicate that Hanen LLLI was delivered with fidelity, and compliance standards were largely met by participants. Outputs were met in line with expectations. The IPE found evidence that the inputs provided acted as enablers for Hanen LLLI to be delivered as intended. The evaluation points to ways that tailoring and cascading could be better described on the logic model.

The logic model describes the workshops as being 'tailored' but does not specify how or the extent to which tailoring would be possible. Findings from the IPE do not point to much evidence of tailoring. When reflecting on the delivery, a key enabler to delivering Hanen LLLI with fidelity was being able to follow the workshop scripts and use the materials as provided. Workshop elements that were specified as 'optional' were often left out, with time constraints being commonly cited as a reason for not including them.

Findings from the evaluation point to two opportunities for tailoring. The first is tailoring according to the level of experience of the practitioners taking part and the second is tailoring according to the needs of children that practitioners routinely work with. Managers and practitioners reflected that less experienced practitioners experienced greater growth in practice development than more experienced practitioners. There was also a view among those with greater experience that workshop content was not challenging, but rather served as a refresher or an opportunity to learn new

and shared language to describe their existing practice. Tailoring the workshops to experience level, or even targeting the intervention to practitioners with a specific level of experience could both enhance the opportunities for the programme to effect outcomes for practitioners and increase participant satisfaction. Tailoring the content to match the needs of the children that the participating practitioners routinely work with could include delivering content that specifically supports practitioners to use Hanen LLLI strategies more confidently and effectively with children with SEND or other language delays and EAL children. This would strengthen the link between Hanen LLLI workshops and the outcomes of practitioners in terms of providing more personalised and inclusive teaching, together with recognising and intervening on possible language delays.

Cascading is described as 'informal' on the logic model and the programme guidance describes it as optional. The IPE distinguishes between 'formal' and 'informal' cascading with formal cascading taking the form of staff meetings and training sessions and informal cascading as more *ad hoc* modelling, observations, and peer-to-peer feedback. The role and expectations of cascading should be clarified on the logic model. Findings from the IPE suggest that cascading can be viewed as a potentially powerful way to increase the impact of Hanen LLLI on pupil outcomes. There is evidence from both this evaluation and the 2022 pilot that cascading can take many forms, from conversations in the break room to organised training sessions. The logic model could be revised to provide greater specificity of the form and expectation of cascading, thereby clarifying its relationship to the programme outcomes being achieved.

*Outcomes*

Evidence of outcomes as described in the logic model is mixed. The logic model includes outcomes for practitioners as well as children. Outcomes for children were measured in the impact evaluation while the IPE explored both benefits to children and practitioners.

Results from the impact evaluation found that children in treatment nurseries made one additional month's progress in language development, as measured by BPVS-3 score, compared to children in the control settings. These results, however, are not statistically significant and therefore the evaluation cannot conclude that Hanen LLLI made a positive effect on the primary outcome. Children in nurseries receiving Hanen LLLI also made one additional month's progress in language development, as measured by RAPT grammar and information scores, compared to children in the control settings. Again, these results are not statistically significant and therefore the evaluation cannot conclude that Hanen LLLI made a positive effect on the secondary outcome. There was no evidence that children in nurseries receiving Hanen LLLI exhibited any differences in socio-emotional behaviour as measured using SDQ-T scores.

There is some evidence from the IPE that supports the outcomes for practitioners, particularly improvements in practice through implementing the Hanen LLLI strategies and improved reflective practice. The changes found in the IPE are not fully reflected in the pre- and post-intervention video scores, which saw small, incremental improvements in practice, and for which there was very little difference between the treatment and control settings.

There were findings in the IPE that suggest an increase in the quantity and quality of interactions between Hanen LLLI-trained practitioners and children and also a view that for Hanen LLLI strategies to be most effective for children, all staff members should be using them. This suggest that cascading is an important element of the intervention where all staff members in a setting are not trained. A greater depth of understanding of the impact on outcomes for practitioners, combined with greater knowledge of how to transfer learning from workshops into effective practice would enable a better understanding of Hanen LLLI's sphere of influence over practitioner outcomes and how to maximise opportunities to influence child-level outcomes.

There are several outcomes on the logic model and there is an opportunity to streamline them into three distinct categories: outcomes for trained practitioners; outcomes for nurseries; and outcomes for children. Building on those categories, the relationship between the outcome categories could be clarified on the logic model to represent the hypothesis for how outcomes for children are to be achieved in a way that acknowledges that Hanen LLLI's most direct sphere of influence is on the practitioners who take part in the training.

*Contextual factors and change mechanisms*

The IPE results found Hanen LLLI training to have been well received by participants. Data, particularly related to responsiveness and quality, found elements within the programme delivery that enabled engagement with the intervention. The logic model used for the trial does not include change mechanisms; however, the IPE results were explored to identify whether any evidence suggests that elements were functioning as change mechanisms, which we

recommend adding into the logic model. Evidence from the IPE was also considered alongside the EEF 'Guidance for Effective Professional Development' (EEF, 2021), which highlights the importance of mechanisms in the design and delivery of professional development in education settings.

The EEF 'Guidance for Effective Professional Development' highlights that high-quality professional development can contain mechanisms within four categories: build knowledge; motivate staff; develop teaching techniques; and embed practice (EEF, 2021). The IPE found evidence of mechanisms included in the EEF guidance under each of the four categories:

1. Build knowledge
    - **Managing cognitive load**: while there was feedback from Program Leaders that at times it felt like there was too much content for the workshop timing, they were attentive to managing this so that participants were not overloaded with information.
    - **Revisiting prior learning**: there were views from participants that Hanen LLLI was a helpful refresher of existing knowledge and supported them recall past learning and practice. The training content was progressive, with knowledge building from each workshop and reinforced during the video feedback sessions.
2. Motivate staff
    - **Presenting information from a credible source:** The Hanen Centre is highly regarded, and Hanen LLLI was perceived as credible. The combined expertise of the two Program Leaders was also valued by the practitioners.
    - **Providing affirmation and reinforcement after progress:** the video feedback sessions in particular provided opportunities for this mechanism. While they were designed to encourage self-reflection on practice, participants reflected that Program Leaders came to sessions prepared and, when helpful, would point out when a participant was using a strategy in the videos.
3. Develop teaching techniques
    - **Instructing practitioners on how to perform a technique:** workshop content was practical, focusing on teaching practitioners strategies for supporting children's language development.
    - **Arranging social support:** there were settings where more than one practitioner took part in Hanen LLLI, though this was not a requirement to take part. The IPE found that practitioners reported positively about being able to share the experience with others both from within and outside of their settings.
    - **Modelling the technique**: during workshops, Program Leaders modelled Hanen LLLI strategies and videos were used so practitioners could see how strategies worked in practice.
    - **Monitoring and feedback**: this mechanism was a key feature of Hanen LLLI through the video feedback sessions, which took a supportive approach to providing coaching and feedback.
    - **Rehearsing the technique**: workshops included role-playing and other opportunities to practice Hanen LLLI strategies.
4. Embed practice
    - **Prompting action planning:** action plans were developed during workshops with support and guidance from the Program Leaders.
    - **Prompting context-specific repetition:** the process of recording videos to use for the video feedback sessions encouraged trained practitioners to use strategies learned in workshops in their settings with children.

Additional elements of Hanen LLLI that were perceived as enabling engagement with the intervention and outcomes for practitioners and children that could be included in the logic model are:

- the capacity for the setting to provide cover while practitioners are taking part in Hanen LLLI workshops and video feedback sessions;
- support from nursery leadership to implement strategies (currently on the logic model as an outcome);
- nursery staff engage with LLLI community (currently on the logic model as an outcome);
- children feeling more confident with language;
- inclusive style of instruction, making content accessible for all abilities and levels of experience; and
- video feedback sessions as an opportunity to recognise opportunities to use Hanen LLLI strategies.

The IPE also found that cascading was perceived as a vehicle to increase the impact of Hanen LLLI. As such, it is recommended to include high-quality cascading of Hanen LLLI strategies from trained to non-trained practitioners as a change mechanism. The function of cascading in enabling outcomes is that it would mean that more staff would be using Hanen LLLI strategies in their practice leading to children having more regular interactions with staff using the strategies.

**Interpretation**

Nursery practitioners play an important role in children's language development. The majority of children in England attend formal early education and a key determinant of language development is consistent high-quality exposure to language and interactions that support growth. Evidence from the US suggest that Hanen LLLI is a promising intervention to improve nursery practitioners' practice to support language development and, in turn, improve early language outcomes for children. As such, the EEF commissioned this efficacy trial to explore the impact of Hanen LLLI in the UK.

The results from this trial are mixed. While there is weak evidence of a small impact on children's language outcomes and no evidence of impact on socio-emotional development outcomes, the IPE results show that the Hanen LLLI was delivered well and perceived positively by participants. There was substantial praise given for the intervention and a recognition of benefits to practice development of nursery practitioners and a perception that the quantity and quality of interactions with children, to support their language development, had increased.

The Hanen LLLI trial focused on understanding the impact of Hanen LLLI on children's early language and behavioural outcomes. The research questions, which the impact evaluation of Hanen LLLI aimed to answer were the following:

1. To what extent did Hanen LLLI lead to changes in children's receptive language outcome as measured by the BPVS-3? (Primary outcome).
2. To what extent did Hanen LLLI lead to changes in children's expressive language outcome as measured by RAPT? (Secondary outcome).
3. To what extent did Hanen LLLI lead to changes in children's behavioural outcome as measured by the SDQ-T? (Secondary outcome).
4. To what extent did Hanen LLLI lead to changes in receptive language as measured by the BPVS-3 for children who are entitled to EYPP? (Subgroup analysis).
5. To what extent did Hanen LLLI lead to changes in receptive language for lower and higher ability pupils based on the BPVS-3? (Subgroup analysis).

An IPE was carried out alongside the impact evaluation. The IPE aimed to answer the following research questions:

1. How is Hanen LLLI delivered, and what are the facilitators and barriers to delivery in maintained nurseries and PVIs?
2. What are the perceived benefits of Hanen LLLI for EY staff, nurseries, and children?
3. Is there evidence that Hanen LLLI leads to changes in staff practice? How can we better support staff, and assist towards an effective cascading of knowledge?
4. What can be learned for future delivery of Hanen LLLI?
5. What is the cost to nurseries per pupil to take part in Hanen LLLI?

Across the impact analysis, including the subgroup analysis, evidence of an effect on child-level outcomes cannot be concluded. Results of an additional month's progress being made in children's language development, as measured by the BPVS-3 and RAPT were not statistically significant. No evidence of additional months of progress was found in socio-emotional behaviour as measured by the SDQ-T. Findings from the IPE support the findings of child outcomes from the impact evaluation. Practitioners reflected in interviews that they found it challenging to see evidence of cohort-level change in outcomes or to compare children from the intervention period to the previous year's cohort. Practitioners were more likely to notice improvements in specific pupils and recognise when individual children responded particularly well to the strategies. There was a view from trained practitioners that it would be too early to detect a change in outcomes in this evaluation; that this would come with time and as the strategies were cascaded to the non-trained practitioners in the setting. These findings were not consistent across the IPE. Findings from the IPE trained-practitioner survey were framed as general, rather than reflective of particular children. Of the 57 practitioners that responded to the survey, 79% said that length of utterances increased, 82% said that children were more likely to initiate interactions, and 74% agreed that as a result of Hanen LLLI, children were having more high-quality interactions with peers. A caveat of these findings, however, is that we cannot know whether the respondents were able to reliably reflect on cohort-level behaviours or if they had particular children in mind when responding to the survey, thus biasing their responses.

While the impact evaluation research questions focus on outcomes for children, there are several outcomes for practitioners and settings in the logic model. The IPE did find some evidence of improvements to EY practitioners' practice and there was a reported increase in both the quantity and quality of interactions with children during the intervention period. Evidence of benefits to staff practice, as found in the IPE, were strongest for practitioners with less experience. Not all findings of benefits to staff are supported by the pre- and post-intervention video scores, which found small improvements in practice and implementation of Hanen strategies and results in control settings were similar to those in the treatment settings. These findings support the views of practitioners, found in the IPE, which described Hanen LLLI as a useful reminder and framework for providing language to describe practice rather than transformative practice development.

Overall, the Hanen LLLI intervention was delivered with fidelity and perceived positively. The positive view of Hanen LLLI as a high-quality intervention was shared by trained practitioners, non-trained staff members in participating nurseries, and Program Leaders. The combination of the workshops with the video feedback sessions was powerful and findings from the IPE suggest that it was through the video feedback sessions where practitioners experienced the greatest growth.

The extent to which participants in the intervention cascaded their learning to develop practice within their settings varied. Despite this, there was a recognition of the role of cascading in being able to maximise the impact of Hanen LLLI and enable consistent use of strategies with children. Cascading was encouraged but considered an optional element of the intervention even though 'informal cascading' is written into the logic model. To further encourage cascading and increase the likelihood of children experiencing an impact on outcomes within the intervention period, cascading could be more codified into the intervention and more resources provided to Program Leaders and participants to enable it. These resources and structures to support cascading can mitigate the risk of strategies being diluted as they are transferred from trained to non-trained practitioners, and thus support the quality and consistency of applying Hanen LLLI to practice.

The previous IPE and pilot of Hanen LLLI suggested that mixed-mode delivery was feasible and acceptable to practitioners, though there was a preference for the in-person workshops. Views on this in the trial were mixed. While rare negative feedback about the intervention was typically about the online workshops being less engaging than the in-person workshops, participants recognise the logistical advantages of having some of the workshops delivered online. Roughly half of the practitioners who responded to the IPE survey would have preferred all in-person workshops. In contrast, the video feedback sessions being delivered online was perceived positively.

The cost evaluation estimates that Hanen LLLI is a very low-cost intervention. Overall, the per pupil per year cost of delivering Hanen LLLI is £43.50 (excluding pre-requisites) or £48.56 (including pre-requisites).

## Limitations and lessons learned

The evaluation team is confident in the findings from this evaluation, however there are limitations to note within the methods and data, and lessons to be learned. In this section, we discuss limitations to the evaluation such as attrition, power, suitability of outcome measures, and missing data in different elements of the evaluation.

At randomisation, the study was powered to yield an MDES of 0.206 for the primary analysis. This is very close to the threshold needed to achieve the EEF 5-padlock rating (<=0.2). Setting attrition from randomisation to analysis was 15.7% in the treatment group and 19% in the control group. This translated to pupil-level attrition from randomisation to analysis being 14.5% in the treatment group and 11.0% in the control group. The study therefore, achieved a 4-padlock rating for attrition (11–20% at pupil level).[36] At the analysis stage, the study achieved an MDES of 0.217.

The impact evaluation did not find evidence of an effect on language outcomes (as measured by BPVS-3 and RAPT information and grammar) for children. Weak evidence of a very small positive effect was observed but the CIs of the effect sizes included zero across all of the language outcome measures. The evaluation was powered to detect a minimum effect size of 0.210, so with a larger sample, a smaller effect size could have been distinguished from a null effect. One limitation to the impact evaluation is that the children included in the study were on the younger age range for both of the language outcomes (BVPS-3 and RAPT), making the data susceptible to floor effects. Additionally, the recruitment approach to the trial meant that children in the participating settings may be more likely to be from disadvantaged backgrounds, potentially resulting in lower speech and language levels at baseline. In the case of BPVS-3, this issue was addressed by performing the analysis on the raw scores as well as the standardised scores. The analysis of the RAPT outcomes was performed on the raw scores only. Finally, another limitation of the impact evaluation was the higher level of missing data for the SDQ outcome measure. To address this, multiple imputation was carried out to perform the analysis.

The cost evaluation had a low response rate among setting staff (35%) with some item non-response across the survey. This could have been due to different reasons: first, information on staff time and cover costs may have been known by multiple staff members (e.g. setting lead and financial bursar) within the nursery; and second, there was a high research burden on nursery staff in the treatment group and lack of financial incentive to complete the survey. We would suggest interpreting the average costs figures with some caution due to the low response rate.

Finally, the IPE survey had a low response rate, and the research team were limited to speaking to a small number of people though the qualitative fieldwork. While a range of views was seen in the IPE findings, we are limited to the perspectives of those who took part in these elements of the evaluation and it is possible that other perspectives, which could have influenced findings, have not been included in this evaluation. There is a risk that the IPE data from non-trained practitioners in treatment settings is skewed by the responses coming from individuals with greater interest and awareness of Hanen LLLI than those who did not respond to the non-trained-practitioner survey. We are continuing to reflect on ways to minimise the data collection burden on evaluation participants, particularly busy professionals with limited time, to increase engagement in IPE elements of evaluation.

## Future research and publications

Although no significant effects were observed in the efficacy trial of Hanen LLLI, IPE findings suggest this could have been because the trial period did not allow enough time for the intervention to bed into the settings both in terms of trained practitioners fully developing their practice and cascading Hanen LLLI strategies to others. Another study could explore the required length of time for the intervention to have a positive effect and include codifying and monitoring cascading.

The IPE found that Hanen LLLI was delivered with fidelity and that Program Leaders found it straightforward to deliver the core content as it was designed, while often omitting optional content due to time constraints. A Program Leader did reflect, however, that they were particularly mindful of ‘sticking to the script’ since this was a trial, and they may be more

[36] This padlock is based on observed pupil attrition, namely, pupil attrition based on settings that completed pupil enumeration. If one includes the 27 settings that withdrew before pupil enumeration, the estimated pupil attrition would be equal to 26.9%, which would reduce the attrition to a 3-padlock rating (21–30% pupil-level attrition).

inclined to deliver the content flexibly in ‘real world conditions’. If Hanen LLLI were to progress to an effectiveness trial, this would be explored.

It could also be worthwhile to explore alternative outcome measures for children, which may be better suited to the age of children attending the settings participating in the trial.

We do not recommend measuring social and emotional learning using the SDQ in an effectiveness trial of Hanen LLLI. Due to findings from this evaluation combined with the burden that completing the SDQ posed on teachers, we do not feel that social and emotional learning should be prioritised as an outcome to measure.

There are no planned additional publications for this trial.

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# Appendix A: EEF cost rating

*Table 43: Cost rating*

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

# Appendix B: Security classification of trial findings

**OUTCOME: Receptive language measured with the British Picture Vocabulary Scale Third Edition (BPVS-3)**

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

| Threats to validity | Risk rating | Comments |
|---|---|---|
| **Threat 1: Confounding** | Low | Adequate randomisation and concealment<br>No evidence of differences between groups on key characteristics or baseline measures (ES=.01). |
| **Threat 2: Concurrent Interventions** | Low | Business as usual was explored in the IPE<br>No evidence of concurrent interventions, or differential uptake/delivery of different approaches or interventions |
| **Threat 3: Experimental effects** | Low | Experimental effects are explored and no evidence that such effects exist.<br>No evidence that the control group did anything differently because they were allocated to the control group.<br>Also, no evidence of contamination in the control group |
| **Threat 4: Implementation fidelity** | Low | Implementation fidelity is well defined and described<br>It is aligned to the logic model<br>Compliance is high |
| **Threat 5: Missing Data** | Moderate | 17% setting attrition (overall) between recruitment and baseline testing. Small difference in attrition between control and intervention settings at the setting level.<br>But child-level attrition is unclear because number of children tested at baseline is used in the calculation, not number of children randomised. Which means that pupil level attrition could be as high as 30% (see in text comments). Small difference in attrition between control and intervention groups.<br>Missing data analyses confirm complete case analyses. |
| **Threat 6: Measurement of Outcomes** | Moderate | Reliable and valid measure of the primary outcome (receptive vocabulary) is used (BPVS-3).<br>It is not clear from the report whether the SLTs who administered the endline tests were in fact blind to allocation (p19).<br>However, there is evidence of floor effects for the primary outcome at baseline. This is much reduced at post-test. Appropriate statistical checks were employed to explore the floor effect further. |
| **Threat 7: Selective reporting** | Low | No evidence of selective reporting<br>Study is registered<br>Protocol and SAP were published |

- **Initial padlock score:** 3 Padlocks – due to MDES, design, attrition.
- **Reason for adjustment for threats to validity**:
  The trial was powered to detect an effect of 0.206. This is very close to, but exceeds, the threshold for a five-padlock rating, and for this reason a padlock has been dropped.

The initial Padlock rating was adjusted to 3 from 4 because of two reasons:

Firstly, the peer reviewers felt that attrition overall was 17% between recruitment and baseline testing. The child level of attrition is also unclear given that the number of children tested at baseline is used in the calculation, not the number of children randomised. This means that pupil-level attrition could be as high as 30%.

Secondly, a reliable and valid measure of the primary outcome (receptive vocabulary) is used (BPVS-3). However, there is evidence of floor effects for this primary outcome at baseline. This is much reduced at post-test. Nevertheless, appropriate statistical checks were employed to explore the floor effect further.

- **Final padlock score for threats to validity** = **[3] Padlocks**

# Appendix C: Changes since the previous evaluation

*Table 44: Changes since the previous evaluation*[37]

| | Feature | Changes since Hanen LLLI 1 |
|---|---|---|
| **Intervention** | Intervention content | The intervention content remained similar to Hanen LLLI 1 with the following key changes:<br>• The addition of tech equipment for the online workshops and video feedback sessions in the programme inputs<br>• Informal and formal cascading of learning formed a key activity of the Hanen LLLI programme being implemented as a part of the programme content. |
| | Delivery model | In the previous Hanen LLLI 1 trial, delivery of all sessions was intended to be completed in person. Following the disruption caused by Covid-19, the current trial was adapted to include both in-person and online delivery. The most recent pilot, which was completed in September 2022, informed which activities were delivered in person and which online.<br><br>There was availability of online resources for staff in the current intervention |
| | Intervention duration | The duration of the programme delivery remained the same (i.e. 31 weeks) |
| **Evaluation** | Eligibility criteria | A key change from Hanen LLLI 1 is that the current trial takes place in both school-based maintained settings and settings from the PVI sector. This addition is motivated by the fact that many children from disadvantaged backgrounds receive EY education in PVI settings, but the available evidence base for this sector has typically been weaker in comparison to maintained nurseries. |
| | Level of randomisation | Hanen LLLI 1 did not go ahead with the impact evaluation due to disruptions caused by Covid-19. |
| | Outcomes and baseline | Hanen LLLI 1 did not go ahead with the impact evaluation due to disruptions caused by Covid-19. |
| | Control condition | Hanen LLLI 1 did not go ahead with the impact evaluation due to disruptions caused by Covid-19. |

# Appendix D: Missing data analysis

*Table 45: Determinants of data missingness*

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | Endline BPVS | RAPT information | RAPT grammar | SDQ TDS |
| Intervention = 1 | 0.141 | 0.185 | 0.185 | 3.353*** |
| | (0.195) | (0.192) | (0.192) | (0.781) |
| Number of enumerated pupils in the school | -0.00486 | -0.00503 | -0.00503 | 0.0170 |
| | (0.00738) | (0.00724) | (0.00724) | (0.0220) |
| EYPP = 1 | 0.113 | 0.0568 | 0.0568 | 0.311 |
| | (0.205) | (0.200) | (0.200) | (0.296) |
| EYPP missing | 0.553* | 0.510 | 0.510 | -0.413 |
| | (0.329) | (0.329) | (0.329) | (0.801) |
| Age | 0.00853 | 0.0234 | 0.0234 | -0.00914 |
| | (0.0199) | (0.0194) | (0.0194) | (0.0297) |
| Baseline BPVS | -0.0202*** | -0.0238*** | 0.0238*** | 0.0165** |
| | (0.00555) | (0.00542) | (0.00542) | (0.00840) |
| Baseline BPVS-3 missing | 1.082* | 0.878 | 0.878 | 0.493 |
| | (0.568) | (0.593) | (0.593) | (1.139) |
| Observations | 2,099 | 2,099 | 2,099 | 2,099 |
| Number of groups | 140 | 140 | 140 | 140 |

*Coefficients from the melogit regression of a binary variable indicating whether the outcome of interest was missing. All specifications also include stratification block fixed-effects. Age and baseline BPVS-3 were imputed with the variable mean if missing. Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1*

# Appendix E: Imputation analysis

*Figure 10: BPVS-3 endline MI convergence*

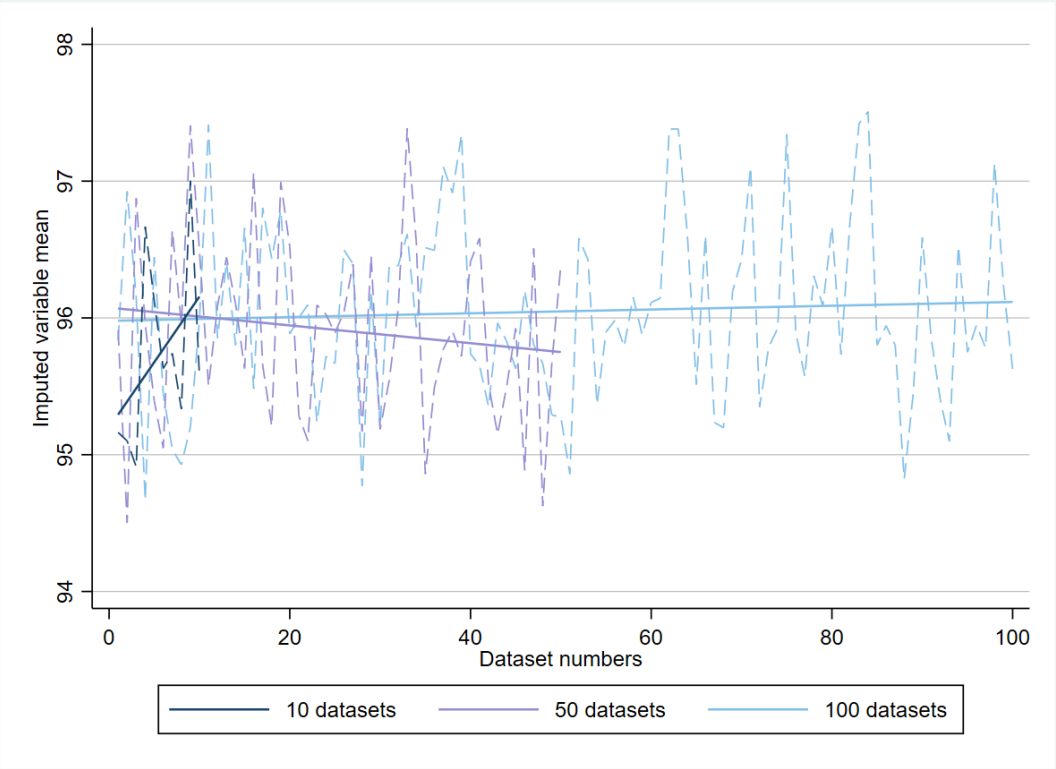



*Figure 11: RAPT1 MI convergence*

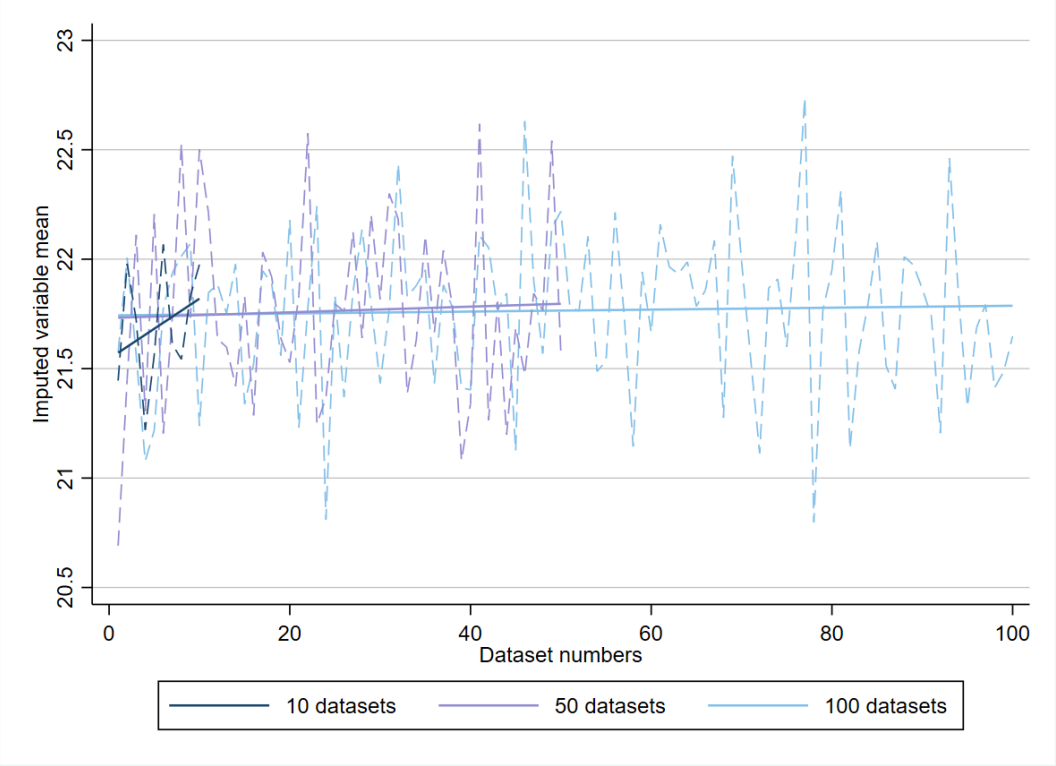


*Figure 12: RAPT2 MI convergence*

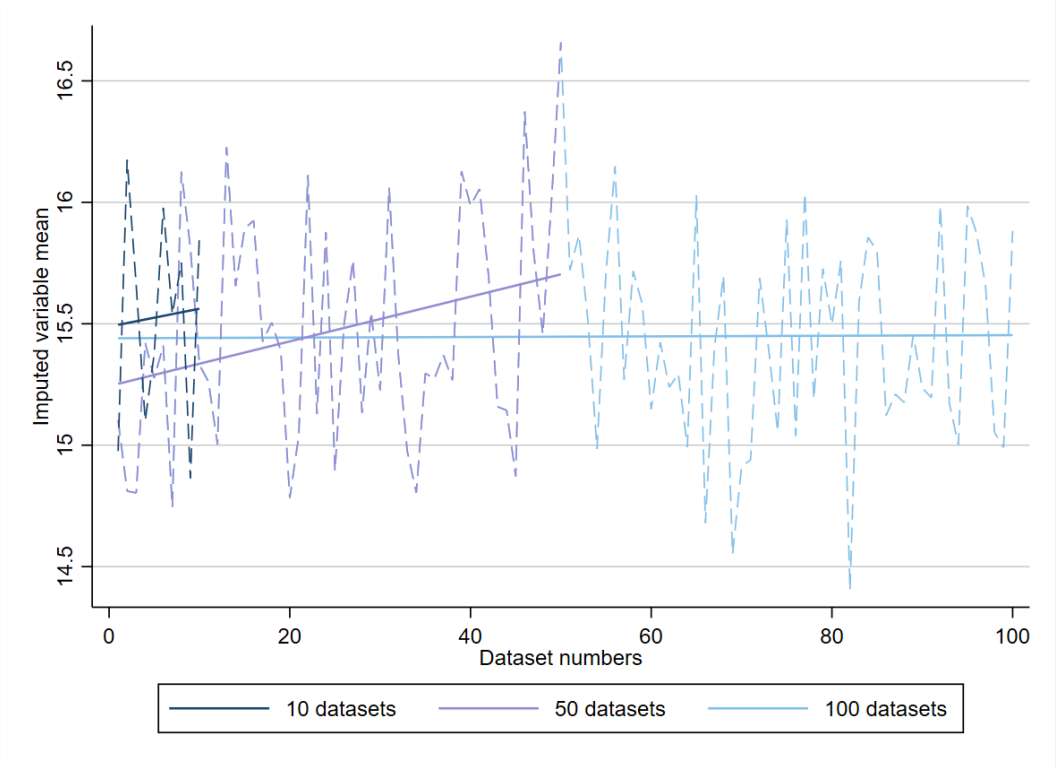
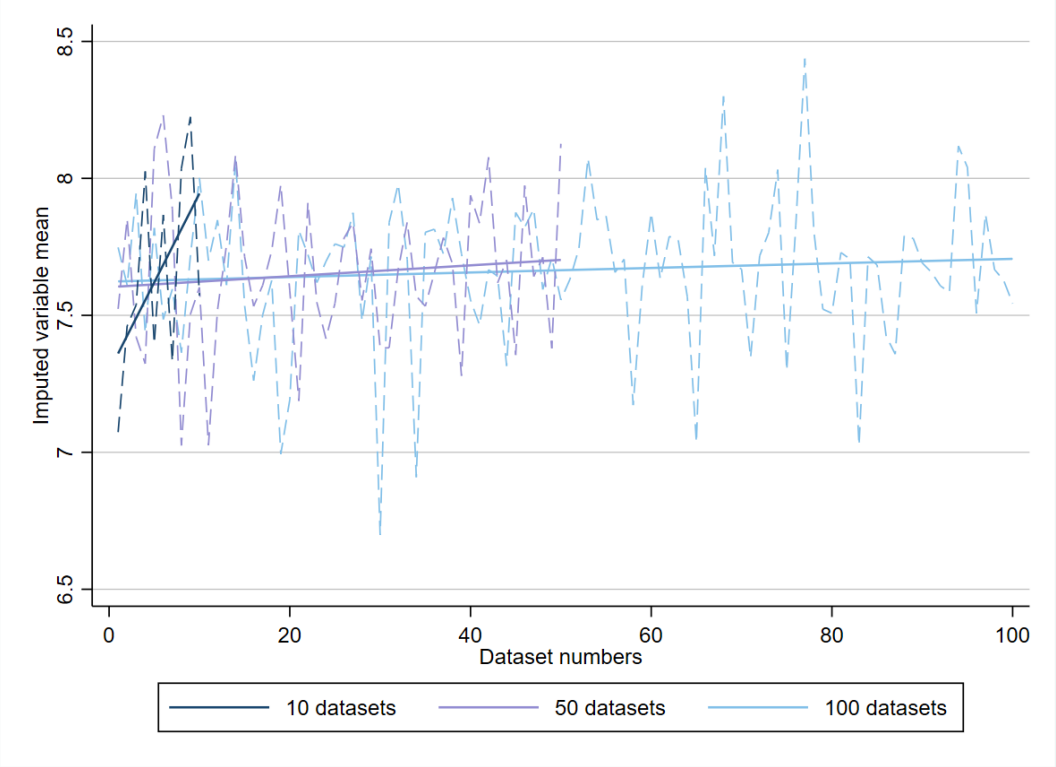



*Figure 13: SDQ MI convergence*



# Appendix F: Subgroup analysis

*Table 46*

| VARIABLES | (1)<br>Endline BPVS-3 score |
|---|---|
| Treatment | 0.547 |
| | (0.662) |
| EYPP Eligibility | -1.558* |
| | (0.887) |
| Control#Not eligible for EYPP | 0 |
| | (0) |
| Control#Eligible for EYPP | 0 |
| | (0) |
| Treatment#Not eligible for EYPP | 0 |
| | (0) |
| Treatment#Eligible for EYPP | 0.122 |
| | (1.251) |
| Standardised BPVS-3 score at baseline | 0.715*** |
| | (0.0158) |
| PVI, East Midlands + Humber | -0.327 |
| | (1.089) |
| Maintained, North of England | 1.278 |
| | (1.062) |
| PVI, North of England | -1.437 |
| | (1.527) |
| Maintained, West Midlands | -1.063 |
| | (0.979) |
| PVI, West Midlands | 0.854 |
| | (1.227) |
| Constant | 33.93*** |
| | (1.674) |
| Observations | 1,693 |
| Number of groups | 133 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

*Table 47: Primary outcome analysis results for EYPP eligible subgroup*

| Outcome | Unadjusted differences in means (C-I) | Adjusted differences in means (C-I) | Intervention group | | Control group | | |
|---|---|---|---|---|---|---|---|
| | | | n (missing) | variance of outcome | n (missing) | variance of outcome | Pooled variance |
| Standardised BPVS score | 2.74 | 1.04 | 136(25) | 183.68 | 151(23) | 170.94 | 176.97 |

*Table 48: Effect size estimation for primary outcome for EYPP eligible subgroup*

| | Unadjusted means Intervention group | | Control group | | Effect size Total n | | |
|---|---|---|---|---|---|---|---|
| Outcome | n (missing) | Mean (95% CI) | n (missing) | Mean (95% CI) | (intervention; control) | Hedges' g (95% CI) | p-value |
| Standardised BPVS score | 136(25) | 96.29 (94.00, 98.59) | 151(23) | 93.55 (91.45, 95.65) | 287 (136; 151) | .08 (-0.15, 0.31) | 0.39 |

*Table 49*

| VARIABLES | (1) Endline BPVS-3 score |
|---|---|
| Treatment | 0.704 |
| | (0.646) |
| Low initial language development | -2.388*** |
| | (0.885) |
| Control#Not low initial language development | 0 |
| | (0) |
| Treatment#Low initial language development | 0 |
| | (0) |
| Treatment#Not low initial language development | 0 |
| | (0) |
| Treatment#Low initial language development | -0.145 |
| | (1.026) |
| Standardised BPVS-3 score at baseline | 0.673*** |
| | (0.0214) |
| PVI, East Midlands + Humber | -0.320 |
| | (1.042) |
| Maintained, North of England | 1.202 |
| | (1.015) |
| PVI, North of England | -1.628 |
| | (1.490) |
| Maintained, West Midlands | -0.898 |
| | (0.918) |
| PVI, West Midlands | 0.929 |
| | (1.193) |
| Constant | 38.08*** |
| | (2.247) |
| Observations | 1,830 |
| Number of groups | 138 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

*Table 50: Primary outcome analysis results for lower initial language development (lower quartile of BPVS-3 baseline score) subgroup*

| | | | Intervention group | | Control group | | |
|---|---|---|---|---|---|---|---|
| Outcome | Unadjusted differences in means (C-I) | Adjusted differences in means (C-I) | n (missing) | variance of outcome | n (missing) | variance of outcome | Pooled variance |
| Standardised BPVS score | 0.63 | 0.53 | 199(56) | 120.09 | 230(35) | 108.03 | 113.62 |

*Table 51: Effect size estimation for primary outcome for lower initial language development (lower quartile of BPVS-3 baseline score) subgroup*

| | Unadjusted means | | | | Effect size | | |
|---|---|---|---|---|---|---|---|
| | Intervention group | | Control group | | Total n | | |
| Outcome | n (missing) | Mean (95% CI) | n (missing) | Mean (95% CI) | (intervention; control) | Hedges' g (95% CI) | p-value |
| Standardised BPVS score | 199(56) | 84.55 (83.02, 86.08) | 230(35) | 83.92 (82.57, 85.27) | 429 (199; 230) | .05 (-0.14, 0.24) | 0.64 |

# Appendix G: Residuals plotted against fitted values for primary and secondary outcome models

*Figure 12: BPVS-3 endline residuals*

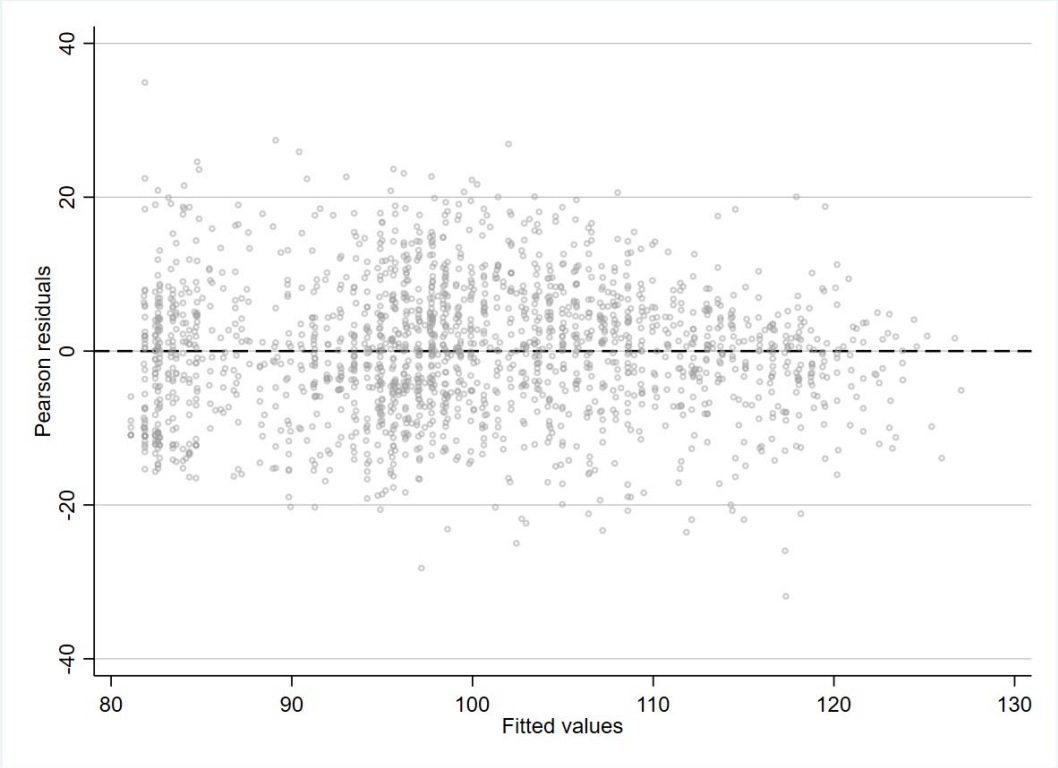



*Figure 13: RAPT information residuals*

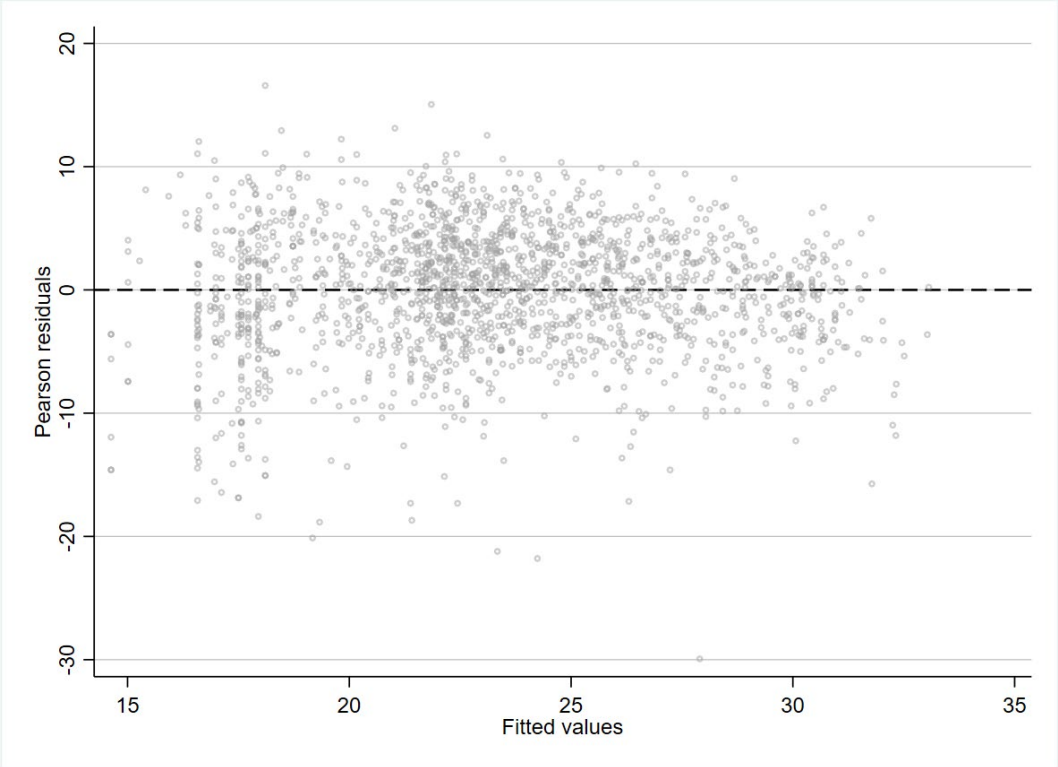


*Figure 14: RAPT grammar residuals*

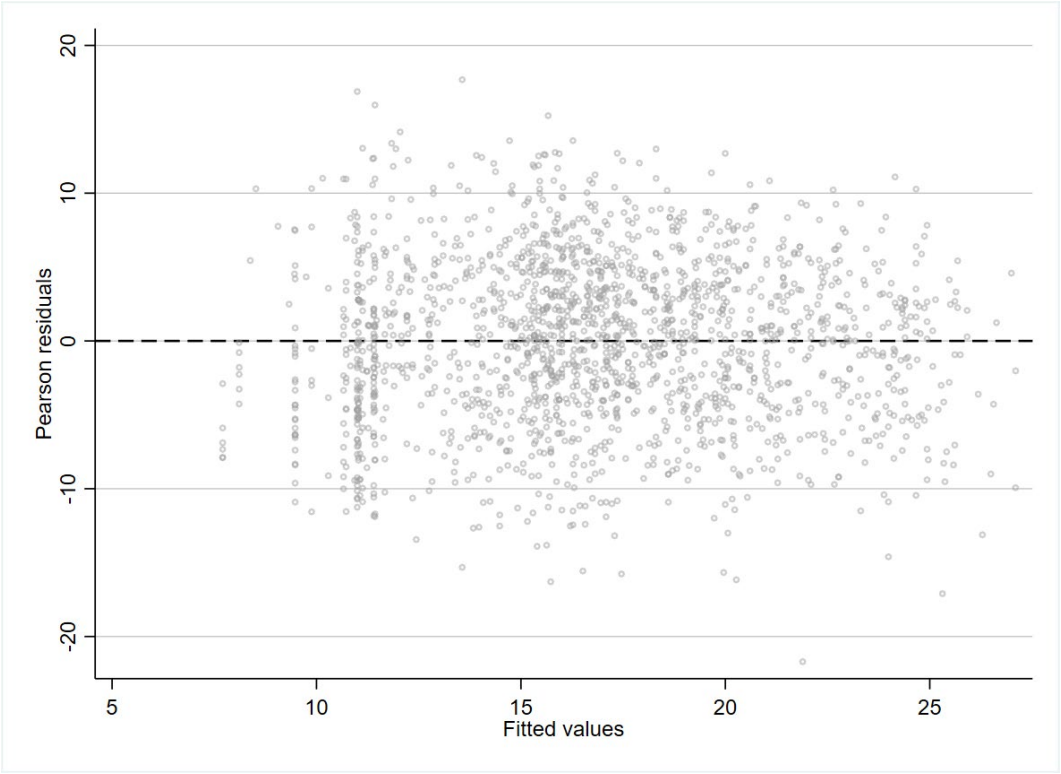
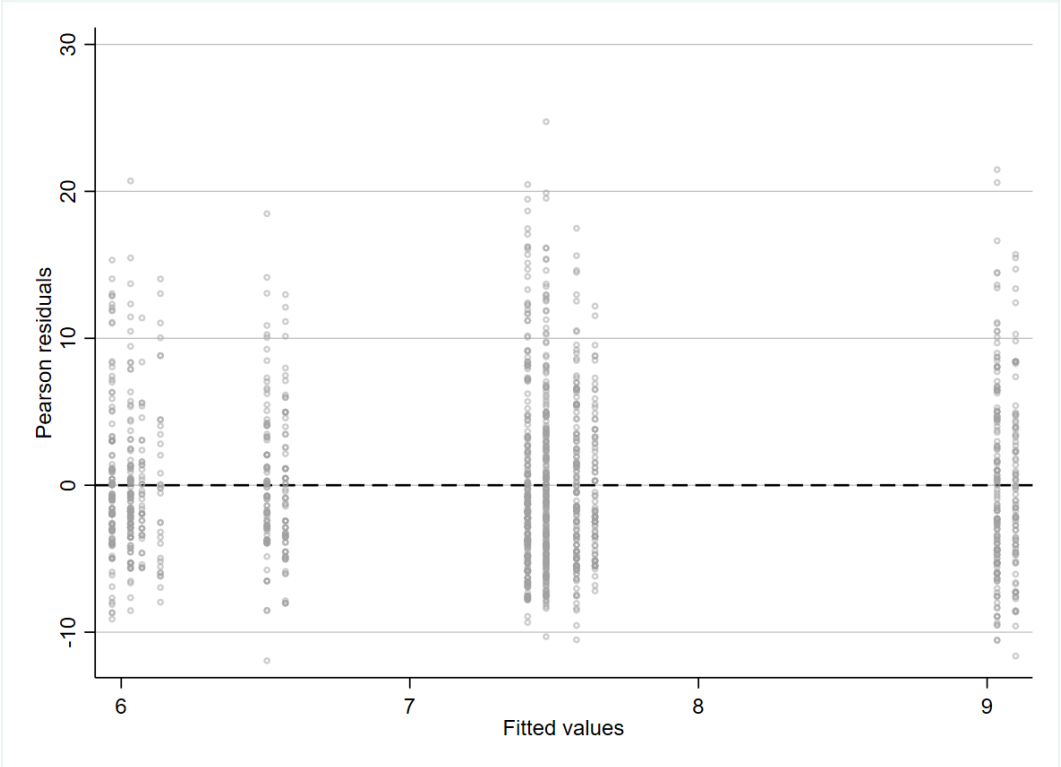



*Figure 15: SDQ residuals*



# Appendix H: Practitioner survey responses

*Table 52: Practitioner responses to survey question 'Which of the following Hanen LLLI strategies did you share with non-Hanen trained staff at your nursery over the course of the programme?'*

| Hanen LLLI Strategy | % |
|---|---|
| **Observe, Wait, Listen** (OWL) | 86% |
| **Follow the children's lead** (Imitate, Interpret, Comment, Join in) | 70% |
| **Take turns together** (Use social routines, non-verbal cues, questions and comments) | 56% |
| **Adjust your language** (Say less and stress, Go slow and show) | 58% |
| **Extend the topic** (Explain, Inform, Talk about feelings, Talk about the future, Pretend, Project) | 47% |
| **SSCAN** (Small groups are best, Set up an appropriate activity, Carefully observe each child, Adapt your response to each child's needs, Now keep it going) | 56% |
| **Foster peer interaction** (Make the best use of space, Plan appropriate groupings, Provide materials and activities that encourage interaction, Support interactions with peers) | 47% |
| No strategies were shared with non-Hanen trained staff during the programme | 9% |

*Source: trained-practitioner survey, total number of respondents = 57*

*Percentages sum to more than 100% because respondents could choose more than one option*

# Appendix I: Memorandum of Understanding, information for nurseries and parents/carers, and privacy notice

## Agreement to participate in the evaluation of Hanen Learning Language and Loving It – Memorandum of Understanding (MoU)

| **School/nursery name:** | |
|---|---|

If you are happy for your nursery to take part in the evaluation, please complete this form and send a scanned copy or a copy with electronic signature (both sides) to LLLI@communicate-slt.org.uk by **Thursday 30th June.**

If you have any queries about the trial, Hanen LLLI or this MoU, please contact LLLI@communicate-slt.org.uk

**Please read the following statements and initial the boxes if you agree with the statements. For more information on each, please see NatCen's information sheet for nurseries:**

*Please initial each box*

I confirm that I have read and understand the information sheet for this evaluation and have had the opportunity to ask questions. ☐

This evaluation aims to test whether Hanen LLLI affects children's communication and language development. I understand that my nursery will be randomly assigned to either take part in Hanen LLLI or continue providing childcare and teaching as usual receiving instead up to a £1000 as a thank you for taking part. ☐

I agree to arrange for at least half of my nursery staff to attend the online and in-person training if my nursery is randomly selected to take part in the programme. My nursery will be refunded 50% of the cover costs for staff that attend the nine workshops.

I confirm that my nursery staff will have access to the technology required for the online workshops (email addess and computer or tablet with high internet speed) and video feedback sessions (device for recording and uploading videos) as outlined in the information sheet, in order for them to participate. If your nursery does not have an appropriate device to record videos of practice please indicate this in the signing page overleaf and one will be provided. ☐

I agree to provide information and facilitate the activities required for NatCen Social Research's independent evaluation, including completing surveys, observations, interviews and videos with relevant staff, and supporting the administration of the assessments. ☐

I agree to share background data (full name, date of birth, eligibility for EY Pupil Premium and home postcode) about all children in my nursery in September 2022 who are due to turn 4 during the academic year with the evaluation team at NatCen Social Research. ☐

I understand that NatCen Social Research will store information collected from staff and children securely and that findings will be anonymised. Designated individuals from NatCen Social Research may view documents containing participants' names when monitoring or auditing the study. ☐

I give permission for NatCen Social Research to view this personal data. Maintenance of confidentiality of information is subject to normal legal requirements and GDPR. ☐

I understand that anonymised results of the evaluation will be shared with EEF and the EEF´s data archive and with the Office for National statistics and potentially other research teams. This archive is managed by FFT Education (https://fft.org.uk/about-fft/). ☐

I know whom I can contact if I have any concerns or complaints about the study. ☐

I understand that this project has been reviewed by and received ethics clearance through the National Centre for Social Research Ethics Committee. ☐

I understand that my nursery's participation is voluntary and that I am free to withdraw at any time, without giving any reason. ☐

## Hanen LLLI Memorandum of Understanding – Signing page

Please complete Part 1, then Part 2 **or** Part 3 and send a scanned copy (both sides) to: LLLI@communicate-slt.org.uk by **Thursday 30th June**.

Please complete Part 1 and Part 2 as appropriate.

**Part 1**

School/nursery name: _____

School/nursery postcode: _____

Type of Early Years setting (e.g. school-based nursery class, nursery school, private for-profit nursery etc.): _____

If you are a school-based nursery class or nursery school, please include your school/nursery URN (you can find this at https://get-information-schools.service.gov.uk/): _____

Do you consider your nursery to be in an urban or rural area? _____

Number of children currently registered with my nursery who turn 4 during Sept 2022-Aug 2023: _____

% of children with English as an Additional Language (EAL): _____

Number of children who are eligible for EY Pupil Premium: _____

Number of staff who work with the pre-school cohort: _____

Number of staff we plan to nominate to attend the training: _____

Number of staff who have attended Hanen training in the past: _____

My nursery does/does not have an appropriate device to record videos of practice (please select as appropriate).

Bursar or finance person's email and telephone number: _____

**Part 2**

My school/nursery **will take part in this evaluation** and agrees to the conditions stated in this Memorandum of Understanding (MoU).

**Headteacher/senior management signature**: _____

**Headteacher/senior management name**: _____

The main contact for the evaluation will be:

**Name:**_____

**Job title:**_____

**Contact phone number:**_____

**Email:**_____

Many thanks for your participation in the evaluation of Hanen LLLI. In case you might want to withdraw your participation, you can do so by contacting LLLI@natcen.ac.uk.

# Evaluation of Hanen Learning Language and Loving It Information sheet for nurseries

The Education Endowment Foundation (EEF) are funding the National Centre for Social Research (NatCen) to carry out an independent evaluation of Learning Language and Loving It™ - The Hanen Program® for Early Childhood Educators (Hanen LLLI), which is being run in your area by Communicate SLT CIC (Communicate). This is a program designed to help nursery workers help young children to build their language and social skills.

The evaluation will be a randomised control trial. This means that staff at half of the nurseries taking part in the evaluation will attend the Hanen LLLI program and staff at the other nurseries will carry on with their normal teaching and childcare. At the end of the year, NatCen will compare children's language, communication and socio-emotional development across nurseries that do and do not attend the program, to see if there is any difference. This information sheet provides further detail on the purpose of our evaluation and what it entails.

You can find out more about:

- Communicate SLT at www.communicate-slt.org.uk; www.communicate-slt.org.uk/services/eef-llli
- NatCen at www.natcen.ac.uk; http://www.natcen.ac.uk/taking-part/studies-in-field/evaluation-of-hanen-learning-language-and-loving-it/
- EEF at http://www.educationendowmentfoundation.org.uk

## What does the evaluation want to find out?

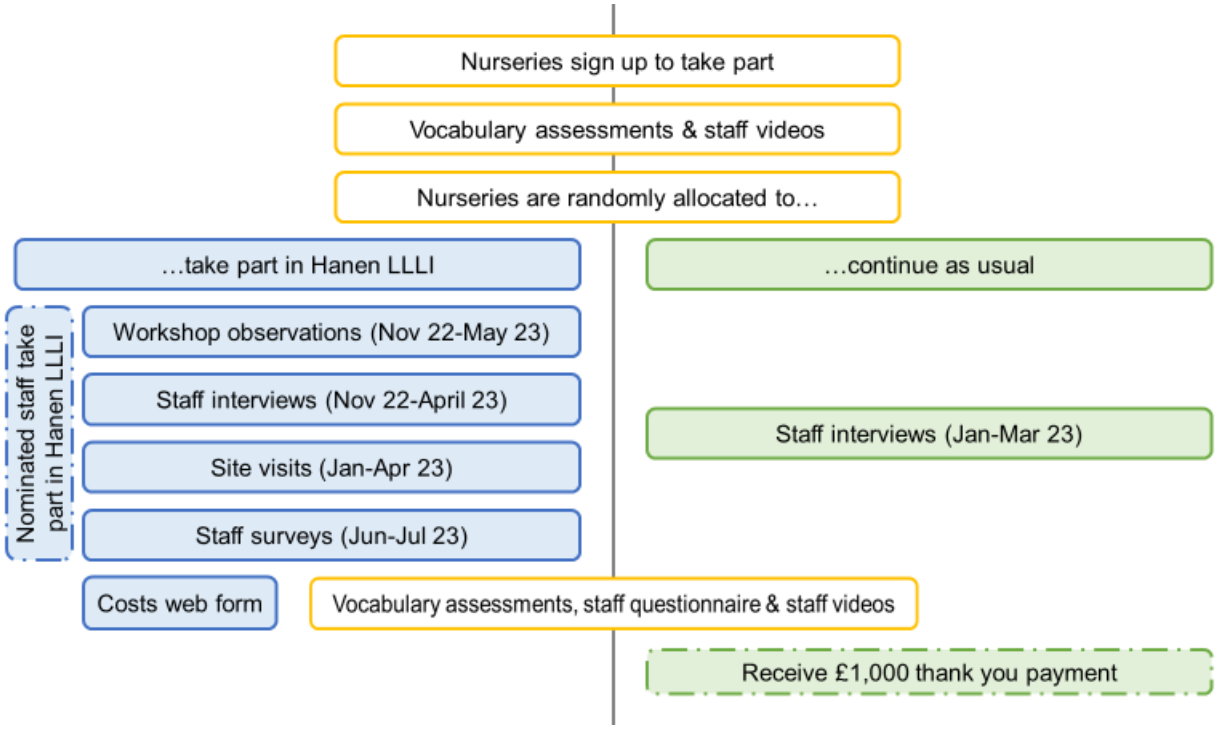
Our evaluation will answer the following key questions:

- What is the impact of Hanen LLLI on the language attainment of 3-4 year-old children?
- Does the impact of Hanen LLLI differ by Early Years Pupil Premium status?
- How is Hanen LLLI delivered, and what are the facilitators and barriers to delivery in maintained nurseries and PVIs?
- What are the perceived benefits of Hanen LLLI for EY practitioners, nurseries and children?
- Is there evidence that Hanen LLLI leads to changes in practitioner practice? How can we better support practitioners towards an effective cascading of knowledge?
- What can be learned for future delivery of Hanen LLLI?
- What is the per pupil cost of Hanen LLLI?

## What does the evaluation entail?

The evaluation will run from October 2022 to July 2023. Participating nurseries will be randomly selected to either take part in Hanen LLLI or continue providing childcare and teaching as usual.

Evaluation activities for all nurseries are similar, with some key differences (more details overleaf).




All nurseries participating in the evaluation will take part in:

- **Short vocabulary assessments with children.** NatCen will randomly select around 17 children to take part in a short vocabulary assessment at the beginning and end of the year. The assessments:
  - Will be delivered by trained speech and language therapists (SLTs) or nursery staff;
  - Will use two age-appropriate, child-friendly and standardised assessments that are regularly used by SLTs to assess young children's language development; and
  - Will take 15-30 minutes per child (but we will leave plenty of time for set up and reassurance).
- **Videos of nursery staff (one per setting).** These will be produced by the same member of staff at the beginning and end of the year and will aim to capture changes in their practice.
- **A short questionnaire for nursery staff** that will measure children's social and emotional development.

*If your nursery is randomly selected to take part in Hanen LLLI*, evaluation activities will also involve:

- **Observing some of the Hanen LLLI training workshops that nursery staff attend.** NatCen researchers will observe 8 workshops across the course of the program to understand how the training is delivered and the strategies that staff are taught. These observations will take place between November 2022 and May 2023.
- **Conducting interviews with some nurseries.** NatCen will select a subgroup of nurseries to take part in interviews. A senior member of staff will be invited to take part in telephone interviews with a NatCen researcher in November-December 2022 and in March-April 2023. These interviews will explore experiences of Hanen LLLI and perceived impacts.
- **Carrying out site visits with 8 nurseries.** NatCen will select a subgroup of nurseries for a visit in January-April 2023, to:
  - Observe the video feedback sessions that your staff receive as part of Hanen LLLI; and
  - Conduct interviews with a senior manager and one or two trained practitioners about experiences and perceived impacts of Hanen LLLI.

- **A short online survey with nursery staff members** in June-July 2023. This will ask about the strategies they use to interact with children. We won't be assessing individuals' behaviour – the survey is just to help us understand whether taking part in the Hanen LLLI program leads to any changes in practice.
- **A short online survey of nursery staff who have not taken part in Hanen**. This will take place in June-July 2023 and will aim to get a better understanding of the cascading of the programme.
- **A short web form to gather cost information.** At the end of the year, NatCen will circulate a web form to gather information on the costs of taking part in Hanen LLLI which will be used to calculate a per pupil cost of the programme.

*If your nursery is randomly selected to continue providing childcare and teaching as usual*, evaluation activities will also involve:

- **Conducting interviews with some nurseries.** NatCen will select a subgroup of nurseries to take part in telephone interviews to find out more about priorities for children's language and communication development in January-March 2023.

If you are randomly selected to continue providing childcare and teaching as usual, your nursery will be given up to a total of £1,000 as a thank you for taking part at the end of the trial (the total amount is conditional on the final vocabulary assessments, staff questionnaire and staff videos being completed).

**What does my nursery need to commit to doing?**

To be eligible for the trial, your nursery should:

- Ideally, have 17 or more pre-school children (those turning 4 between Sept 2022 – Aug 2023) on roll this Autumn. Settings with 12 or more children may still be able to take part; and
- Be located in one of three Department for Education regional school commissioner regions: 'The North', 'East Midlands and the Humber' or 'West Midlands'.
- Not agree to take part in any other EEF research trial in 2022/23 such as PALs, English Mastery or 5Rs.

By agreeing to take part in the trial, you are committing to taking part in all relevant aspects of the evaluation as described above. All participating nurseries must also agree to helping facilitate our evaluation activities as described below:

- Name a key contact for your nursery who will help the NatCen research team schedule and carry out evaluation tasks;
- Hand out parent information leaflets explaining the project in September 2022;
- In September 2022 provide the nursery postcode and the names, dates of birth, Early Years Pupil Premium Status (EYPP) and home postcode of all of the children registered with your nursery who turn 4 years old in the academic year 2022/23 to NatCen[38]. This is so that we can randomly select around 17 children to take part in the assessment;
- Commit to taking part in all stages of the evaluation as specified above, including NatCen's interviews, surveys, site visits, practitioners' videos and the administration of the assessments;
- Be responsive to NatCen's requests for information and the completion of evaluation tasks within agreed timeframes; and
- Commit to participation for the full duration of the evaluation (until July 2023), unless there is a significant reason for not doing so.

[38] NatCen will provide a link to a secure system for uploading pupil details. Please **do not** send pupil details via email.

*If your nursery is randomly selected to take part in Hanen LLLI*, you must also:

- Select a **minimum** of half (preferably two-thirds) of your nursery staff, including a senior member of staff (e.g. nursery teacher or room lead), to take part in the Hanen LLLI training program. These staff members should not have taken part in Hanen LLLI before;
- Ensure that these staff attend the entirety of the Hanen LLLI training 2.5 hour workshops (eight fortnightly workshops [some virtual and some in person] between November 2022 and May 2023);
- Help facilitate scheduling and space for setting staff to meet [sometimes online and sometimes in person] with Hanen LLLI program leaders to deliver eight video feedback sessions to each participating member of staff;
- Ensure nursery staff have access to, in order to participate in the workshops when they are offered online, an email address and a computer or tablet with high speed internet, a microphone and webcam (at least 1 device per 2 staff members taking part).
- Ensure nursery staff, in order to particpate in the individual video feedback sessions, will have onsite access to a video recording device (e.g. tablet or camera with a microphone for sound) and technology (e.g. tablet or computer) for uploading recorded videos to a secure platform. If your nursery does not have an appropriate device to record videos one can be provided.
- Work closely with Communicate who will support implementation of Hanen LLLI.

### What do NatCen promise to do in return?

The research team at NatCen commit to:

- Providing information about each stage of the evaluation in a timely way;
- Collecting and analysing information from the evaluation to provide an assessment of the effectiveness of Hanen LLLI and how it was delivered to the EEF and Communicate;
- Storing information about your nursery and children securely;
- Ensuring the confidentiality and anonymity of all findings; and
- Being a point of contact for any questions about the evaluation.

### And what do Communicate SLT promise to do?

Communicate SLT commit to:

- Providing eight Hanen LLLI workshops and eight video feedback sessions to all participating nurseries randomly allocated to receive the training;
- Refunding early years settings for 50% of their cover costs if they attend the workshops
- Providing early years settings with a tablet or recording device to particate in the video feedback sessions, if a setting doesn't have a device.
- Providing up to a total of £1,000 as a thank you payment to those participating nurseries randomly allocated to continue with teaching and childcare as usual on completion of the evaluation activities (the total amount is conditional on the final vocabulary assessments, staff questionnaire and staff videos being completed); and
- Being a point of contact for any questions about Hanen LLLI and providing appropriate support.

### How will our data be used?

All data will be treated with the strictest confidence – your nursery, staff and the children you look after will not be identified in any report arising from the research.

NatCen is the data controller and data processor for this evaluation. Our legal basis for the evaluation is "legitimate interest". More information can be found in our privacy notice, which you can online at: https://www.natcen.ac.uk/taking-part/studies-in-field/evaluation-of-hanen-learning-language-and-loving-it/privacy-notice/

All personal information and any other data held on the project will be securely deleted after one year from project completion in December 2023.

For the purpose of research and archiving, NatCen will share pseudonymised assessment data with the Department for Education, the EEF's archive manager, the Office for National Statistics and potentially other research teams.

At the end of the research project, this data will be submitted to the ONS SRS in the EEF data archive (this is managed by FFT). This will include data only identifiable to the Department for Education and no information will be archived that could be used to directly identify individual pupils (for further information, see EEF's archive privacy notice). Further matching to National Pupil Database (NPD) and other administrative data may take place during later research.

### Who do I contact for more information?

If you have any questions relating to the evaluation, please contact the NatCen research team at LLLI@natcen.ac.uk or on 0808 168 0239.

If you have any questions about Hanen LLLI, please contact Helen Laycock (Project Manager) at LLLI@communicate-slt.org.uk or by calling 01253 462 123.

# Letter to parents and carers

Dear parent/carer,

We are writing to let you know that your child's nursery is taking part in an evaluation of Learning Language and Loving It™ - The Hanen Program® for Early Childhood Educators (Hanen LLLI), which is being run in your area by Communicate SLT CIC (Communicate). This is a programme designed to help nursery workers to support young children to build their language and social skills.

The evaluation of Hanen LLLI is being funded by the Education Endowment Foundation (EEF) and carried out by us, the National Centre for Social Research (NatCen). Our evaluation will answer two main questions:

- What is the impact of Hanen LLLI on the language attainment of 3-4 year-olds?
- Does the impact of Hanen LLLI differ by Early Years Pupil Premium status?

We will also address the following questions:

- How is Hanen LLLI delivered, and what are the facilitators and barriers to delivery?
- What are the perceived benefits of Hanen LLLI for EY practitioners, nurseries and children?
- Is there evidence that Hanen LLLI leads to changes in practitioner practice? How can we better support practitioners towards an effective cascading of knowledge?
- What can be learned for future delivery of Hanen LLLI?
- What is the per pupil cost of Hanen LLLI?

The evaluation is a randomised control trial. This means that staff at half of the nurseries taking part in the evaluation will attend the Hanen LLLI program and staff at the other nurseries will carry on with their normal teaching and childcare. At the end of the year, NatCen will compare children's language, communication and socio-emotional development across nurseries that do and do not attend the programme, to see if there is any difference.

## What does the evaluation mean for my child?

NatCen's evaluation will include three key activities that affect your child:

1. **Running vocabulary assessments with children.** Your child may take part in a short, child-friendly vocabulary assessment at the beginning and at the end of the year. The assessments will take between 15-30 minutes. They will be carried out by a qualified Speech and Language Therapist (SLT). NatCen will select a small group of children at random to be assessed in each nursery. In case your child is not selected, this will not affect the support received within the nursery.
2. **A short questionnaire for nursery staff** that will measure children's social and emotional development at the end of the year.
3. **Videos of nursery staff interacting with children.** Two videos will be produced by the same member of staff, one at the beginning and one end of the year, with the aim to capture changes in nursery staff practice. Your child may be visible in the videos, however no information about any child is noted. All videos are stored safely by Communicate CIC, are watched only as part of the training and evaluation activities and are deleted when the evaluation ends.

## How will my child's information be used?

Your nursery will share the following information about your child with NatCen:

- Name
- Date of birth
- Home postcode

- Unique Pupil number (UPN) (if applicable)
- Eligibility for Early Years Pupil Premium
- Days child does not attend the nursery (if applicable)

NatCen will randomly select children to take part in the vocabulary assessments in October 2022 and June/July 2023. In June/July 2023, nursery staff will also complete the short questionnaire to measure children's social and emotional wellbeing. We will remove children's names and compare children's results across nurseries that do and do not attend the programme, to see if there is any difference in their language, communication and socio-emotional development. At the beginning and end of the year, nursery staff will share the videos of them interacting with children with qualified SLTs, who will score the staff's practice. No child data from these videos will be used for the evaluation.

At the end of the evaluation, NatCen will share the data collected with the Department for Education, the EEF's archive manager, the Office for National Statistics and potentially other research teams for the purpose of research and archiving. No information will be archived that could be used to directly identify individual pupils (for further information, see EEF's archive privacy notice). Further matching to National Pupil Database and other administrative data may take place during later research. NatCen will securely delete all personal information about your child no more than one year after the evaluation is finished (by December 2024 at the latest).

For more information about how we use information, please visit our privacy notice: http://www.natcen.ac.uk/taking-part/studies-in-field/evaluation-of-hanen-learning-language-and-loving-it/privacy-notice/

### What if I don't want my child's information being used in the evaluation?

You have the right to object to your child's information being used in this evaluation. If you object, please tell your child's nursery by **Friday, 09 September 2022**. After this, you can still choose to withdraw your child from the evaluation by contacting NatCen, using the contact details below.

### Who do I contact if I have any questions?

If you would like more information, please get in touch with the NatCen research team at LLLI@natcen.ac.uk or by calling 0808 168 0239.

Best wishes,

**Sehaj Bhatti**
Project Manager
NatCen - Social Research that works for society

# Evaluation of Learning Language and Loving It™ – The Hanen Program® for Early Childhood Educators

## Privacy Notice – September 2022

In line with the UK General Data Protection Regulation (GDPR), there are certain things that we want to let you know about how information will be processed in the evaluation of Hanen LLLI. In this privacy notice, we explain the legal basis for data processing, who will have access to participants' personal data, how data will be used, stored and deleted, and who you can contact with a query or a complaint.

### Who's who?

This evaluation is being carried out by independent evaluators, the National Centre for Social Research (NatCen), commissioned by the Education Endowment Foundation (EEF).

You can find out more about NatCen at www.natcen.ac.uk.

You can find out more about the EEF at www.educationendowmentfoundation.org.uk

### Who will access personal data?

NatCen are carrying out this evaluation and will have access to nursery and practitioner information, recordings and transcripts of interviews with nursery staff and program leaders, survey responses, children's assessment data and sample files including nursery name and postcode, staff contact details and children's names, dates of birth, Early Years Pupil Premium status (EYPP) and postcode. All assessment data, videos and interview and survey responses will be anonymised before being analysed.

McGowan Transcriptions (www.mcgowantranscriptions.co.uk) is the transcription service we use to transcribe our interview data. They will have access to recordings and transcriptions from all interviews. McGowan Transcriptions is on our approved supplier list and compliant with all our information security policies.

Qualified speech and language therapists (and possibly nursery staff) will conduct assessments with children. They will have access to pupil names, dates of birth and pupil assessment scores only for the nurseries where they will conduct assessments.

### How will the data be used?

The data collected will be used for research purposes only.

Assessment data from the vocabulary assessments and staff questionnaire on children's social and emotional wellbeing will be used to inform our impact evaluation. All assessment data will be anonymised before being analysed.

Information and opinions gathered from videos, interviews and surveys with practitioners, managers and program leaders will be used to inform our process evaluation. All videos, interview and survey responses will be anonymised before being analysed.

All data will be treated with the strictest confidence – no nursery, staff or children will be identified in any report arising from the research.

For the purpose of research and archiving, NatCen will share data from the impact evaluation with the Department for Education, the EEF's archive manager, the Office for National Statistics and potentially other research teams.

At the end of the research project, this data will be submitted to the ONS SRS in the EEF data archive (this is managed by FFT). This will include data only identifiable to the Department for Education and no information will be archived that could be used to directly identify individual pupils (for further information, see EEF's archive privacy notice). Further matching to National Pupil Database (NPD) and other administrative data may take place during later research.

In addition to the evaluation of the Hanen LLLI programme, the EEF will fund an evaluation team to work on an overarching evaluation of the EEF's Accelerator Fund activity, of which Hanen LLLI is one aspect. The focus of that work will be determined once the team has been appointed. The team may contact the headteacher and school staff participating in this project to ask if they would like to take part in that evaluation, for example completing a survey or taking part in an interview. This is not a requirement of taking part and will not be designed to be labour-intensive. If you have any concerns, please let us know.

NatCen will securely delete personal information about participants no more than one year after the evaluation is finished (by December 2024 at the latest). NatCen will securely delete the data of pupils who are not selected to take part in the evaluation in October 2022.

### The legal basis for processing data

For this evaluation, NatCen is a data controller who also processes data. This means that we are responsible for deciding the purpose and legal basis for processing data. The legal basis for this project is "legitimate interest". This means that we believe that there is a genuine reason for us to process this data (to evaluate the impact of Hanen LLLI), that this data is needed to fulfil this purpose (we couldn't evaluate Hanen LLLI without this information), and that using this data won't interfere with individuals' interests, rights or freedoms.

### Who can I contact with a query or a complaint?

You have the right to raise any concerns with the Information Commissioner's Office (ICO) via their website at https://ico.org.uk/concerns/.

You also have the right to object to your child's information being used in this evaluation. If you object, please the NatCen research team know by emailing LLLI@natcen.ac.uk or by calling 0808 168 0239.

### Contact information

If you have any questions about how your personal information will be processed, or about the evaluation, please contact the NatCen research team at LLLI@natcen.ac.uk or by calling 0808 168 0239.

This document is available for download at https://educationendowmentfoundation.org.uk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