Conversation for Social Interaction: Developing a classroom intervention to improve conversation skills in primary schools

Final Project Report, February 2026

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Executive Summary

Conversation skills allow children and adults to form and sustain friendships and to foster positive relationships with peers. In the general population, there is variability in these skills, with consequences for academic and vocational success as well as social and mental wellbeing. To keep a conversation going, children need to be able to listen attentively, provide relevant responses, engage in appropriate turn-taking, consider the perspectives of their conversation partner and repair misunderstandings. These conversation skills in turn support children to engage in classroom learning and curriculum-based discussion with peers. They also predict and precede better mental health and behaviour as children grow older.

Teaching conversation skills is currently a statutory requirement in the English primary curriculum. The recent UK government-commissioned Curriculum and Assessment Review has highlighted the need for additional oracy support and has recommended the establishment of an oracy framework for schools across all key stages. Supporting conversational ability should be central to this oracy framework, to allow children the opportunity to think out loud, debate, collaborate, share perspectives and question. However, currently teachers receive limited training about oral language development during their initial teaching training and conversation skills are notably absent.

Crucially, there are no evidence-based programmes which aim to support conversation skills in primary school pupils. This Nuffield Foundation-funded project has aimed to co-develop with stakeholders a free, school-based conversation skills programme and to test whether teachers would find it easy to use and view it positively. Below are the four objectives of this project and how these were met.

Objective 1. To develop an effective, teacher-friendly programme and materials in collaboration with upper-primary teachers: Creation of the CoSI programme.
Building on prior preparatory work with teachers, we developed the Conversation for Social Interaction (CoSI) programme in iterative steps with input from a Teacher Advisory Group and four Year 4 teachers who trialled the initial programme. The revised programme (available here: https://www.cosi-conversation.org.uk) is intended to run for 12 weeks, for approximately 35 minutes per week. Informed by evidence-based small group social skills and speech and language therapy programmes, the CoSI teaches explicit reflection on the process of social conversation through direct teaching and structured, active learning, followed by unstructured practice with peers to promote generalisation with feedback from the teacher. The core skills, which the CoSI programme teaches are:

- active attentive listening;
- understanding that one's conversational behaviour impacts the feelings of others;
- responding in a way that builds on the conversation topic as it gradually shifts;
- taking turns and allowing everyone to join in;
- understanding that everyone makes 'chatting slip-ups' and that these can be 'fixed';
- accepting and accommodating individual differences in social communication.

Objective 2: To test programme feasibility in classroom settings.
We tested whether it was feasible to deliver the programme in six schools (in Year 4) in Kent and Greater Manchester. We selected four schools in areas of high socio-economic deprivation (two of which had predominately multilingual children) to evaluate feasibility in these contexts. All schools were able to run the six units of the programme, albeit with some taking longer than planned. Most opted to run the programme during lessons for Personal Social Health and Economic / Relationships and Health Education.

Having delivered the CoSI, teachers reported that the direct teaching elements (interactive lessons with PowerPoints) and structured active learning (usually games) were easy to

implement and enjoyable. All teachers said they would run these elements of the programme again, albeit with minor amendments. There was more variability in teacher confidence in providing feedback on peer-to-peer unstructured conversations - one of six teachers did not feel this was viable because her class had a high level of need and no teaching assistant support. The remaining five teachers all provided feedback to individual children / groups during peer-to-peer social conversation practice, although many expressed a preference for feedback in the form of whole-class plenaries at the end of these sessions. While some teachers expressed some concerns (e.g. resulting noise levels) about the peer-to-peer unstructured practice, it appears that in most schools it is feasible to deliver the direct teaching elements, structured active learning and (usually) the peer-to-peer unstructured practice.

Objective 3: To determine teacher views of the programme.
We first examined teacher views of the programme via interviews and a focus group with the group of six teachers who had run the programme in their classrooms. All stated that they would recommend the programme to colleagues (allowing for amendments). Five of the six said running the programme had increased their understanding both of social communication and of the social skills of their pupils. All said the programme should run for considerably longer than 12 weeks (to provide time to consolidate the concepts and practise skills), with most recommending it run over multiple primary school years. Several reported broader social impacts for their pupils including reduced peer conflict. Some suggested further linking of CoSI to the curriculum for Relationships and Health Education (RHE).

We then carried out three focus groups with different groups of teachers who had not run the programme but who accessed the programme materials and lesson plans via our website. These teachers found the CoSI materials well-designed and easy to use. They all felt that there is a need for a programme of this type due to poor oral language (which some highlighted as a significant hurdle for literacy) and social communication skills amongst many Key Stage 2 children. However, their focus group discussions indicated that further co-development work with teachers is necessary for certain elements of the current CoSI programme as well as for the corresponding teacher training materials.

All teachers who used or accessed the materials highlighted the importance of the skills taught in the programme for group work in curriculum subjects and for managing disagreements between peers. They also highlighted an increasing need over the past few years for a programme supporting social communication.

Objective 4: To determine the most appropriate means of assessing child conversation skills with a view to a future study comparing the programme to a control group.
To test whether a programme is effective in supporting conversation skills, it is necessary to have valid, statistically reliable and age-appropriate measures of conversational skills, particularly turn-taking and relevant responding. Test reliability was examined in two ways: inter-rater reliability and test-retest reliability. Inter-rater reliability examines whether two independent raters would obtain approximately the same scores for a given child. Test-retest reliability examines whether child rankings on test scores remain the same if tested at two timepoints.

To identify appropriate measures, we first ran a study with 72 Year 4 children exploring different measures, including a) assessing on-topic responding during a semi-structured conversation paradigm with an adult and b) assessing aspects of turn-taking, topic maintenance and question asking in an unstructured conversation with an adult. This identified that the semi-structured conversation measure was in the excellent range for both types of reliability. Six of the eight scales for scoring unstructured conversation were in the excellent range for inter-rater reliability, and all of these had good statistical test-retest reliability.

To explore the feasibility of using these measures in a future evaluation of the CoSI programme, we then used the semi-structured conversation measure and selected four of scales

for measuring unstructured conversation. These complemented the structured measure on-topic responding by assessing turn-taking and question asking. We assessed 118 children before and after their teachers ran the CoSI programme in their classrooms. The structured conversation measure and two of the four scales for unstructured conversation (assessing turn-taking) showed statistically significant improvements following the CoSI programme. The change for the structured conversation measure showed a medium effect size[1]; relevant responding rose from 44% to an average of 64%. Separately, for two of the four unstructured conversation measures children showed statistically significant improvements following the CoSI. One of these scales assessed conversational 'balance' (use of speaking time relative to the partner), where a higher score indicates better performance. Here, the odds ratio for the effect was 1.97, which means that a child was twice as likely to score higher (for each boundary of the 5-point scale) at post-intervention than at baseline. The other scale assessed conversational reticence scale (where a lower score indicated better performance) and for this the odds ratio was -1.58 indicating that children were 50% more likely to have a lower score (at each boundary) post-intervention. While this is promising, because there was no comparison (control) group, causal inferences cannot be drawn. In addition, the semi-structured conversation measure currently requires researcher time to correct auto-transcription whereas the unstructured conversation measures require approximately a day's reliability training prior to scoring. This means that while these measures could feasibility be used in a large-scale randomised controlled trial, it would be beneficial to explore ways to reduce researcher time as well as potential additional measures. Nonetheless, our summary is that these findings provide clear motivation for running a future study with a control group to robustly test the effect of the programme.

In addition, 87% of the children reported that the programme had helped them with conversation in real life. Many gave anecdotal examples to support their views, citing increased confidence in chatting, awareness of when and how to change conversation topics, the importance of listening to the conversation partner and allowing them to contribute, all skills which were taught in CoSI. A few children spontaneously gave examples of how the programme impacted their home lives, as in the following quote:

> Child 23: "*I used to not chat at all like all I did was chill in my room and then my mum said 'Dinner's ready' and I didn't even barely said anything - I just said 'Ok' [oh really?] but now I just talk to my mum"* 09:41

Of the six teachers who ran the programme in their classrooms, five gave examples in support of their views that the programme had a positive impact on the children, for example:
"*And if you say - if you gave them a stimulus and said talk about this, the number of them who would literally just sit still and stare straight ahead, not even look at the person they were meant to be talking to at the beginning of the year. It was quite staggering and we've come so far from that now. But because I think the "in" was making it a social programme and you can talk about your favourite restaurant or you - whether you want the cat or all the things that they wanted to talk about, that's - now what I'm seeing is if I give them something to talk about in writing or talk about in reading, they've got all the skills to be able to look at each other, make eye contact, and be engaged. So it's had a huge impact*" School 5 teacher 5:18

Next steps

There are three areas where further development is needed:

- *1. Further co-development with teachers*

  First, further co-development of a suite of options for running peer-to-peer unstructured social conversation practice is needed to ensure that all teachers can access materials and

[1] Effect sizes are usually classed as either 'small', 'medium' or 'large'. A small effect means the difference (e.g. between pre and post intervention) is fairly subtle in terms of how noticeable it is in daily life. A medium effect means that the average child showed a meaningful improvement, that is, enough that it would likely be felt in their day-to-day life. In studies with children, it is quite rare to find medium effect sizes due the great variability amongst children.

activities as appropriate to their classroom needs and that noise is minimalised. In addition, as with all aspects of the curriculum, it is essential that each child is aware of which aspects of conversation they might improve. Therefore, further co-development around providing feedback to children is also required. Connected to this, additional training films should be developed to illustrate running peer-to-peer conversation practice and feedback provision.

- *2. Further development of quantitative child assessment measures*

While the measures of child-to-researcher conversation were statistically reliable and age-appropriate, it would be useful to explore child conversation measures, which can be administered and scored with minimal training and without transcription-correction time. In addition, there are further measures which could provide greater insight into the impact of CoSI. For example, given child and teacher anecdotes regarding how the CoSI improved child confidence in oracy with their *peers*, quantitative measures of impact on peer interactions and / or peer relationships could provide a strong evidence base to justify use of CoSI. Finally, assessing children's ability to listen attentively and engage in discussion would provide further evidence of the generalisability of the CoSI programme.

- *3. An investigation of causality*

Finally, we need a robust test of whether the CoSI programme is effective in promoting conversation skills by comparing an intervention to a comparison group.

Potential implications for policy and our longer-term goals

Both policy guidance and indicative evidence from the current study speak to the need to develop children's conversations skills. Further, teachers believed there was a real need for a programme like the CoSI. One reason they gave was that strong oral language skills, and social conversation skills in particular, are essential for classroom learning. They argued that strong oral language is essential for literacy and conversation skills are a pre-requisite for engagement in group work as part of all curriculum subjects. This links to findings from the recent Curriculum and Assessment Review which presents evidence that currently "*attention to oracy is insufficient*" (p42) and highlights "*the need for the English curriculum to make speaking and listening requirements more prominent*" (p43).

The second key benefit concerned managing disagreements in the classroom and playground. Teachers' perceptions across the board were that social communication skills are weaker in current cohorts than in the past. Half the teachers in our sample reported that the programme helped to ameliorate peer conflict. This echoes links between teaching 'genuine listening as perspective-taking' and conflict reduction found in work on communication for peacekeeping (discursive civility). Indeed, most teachers argued that social communication support is needed for all primary school years groups and that a good programme would go even further in helping children to understand the nature of friendships, the importance of turn-taking and the oral language skills required for negotiation and managing disagreements. This would fit well with the Curriculum and Assessment Review's proposal that Citizenship should become statutory at primary level (p59) and should foster "*oracy skills, such as expressing opinions, listening to others' points of view, and agreeing and disagreeing respectfully*" (p58).

Taken together, these findings make a compelling case for the further development of the CoSI programme as a timely response to both classroom realities and a future-ready national curriculum.

1. Background and Rationale

Social communication refers to the use and interpretation of language –and nonverbal communication – for the purpose of social interaction. Once children grow past their early childhood years, social conversation becomes the key means by which people form and maintain friendships as well as collaborate and negotiate with their broader community (see (1) for a review). To be able to engage in social conversation, children have to be able to listen attentively and provide relevant responses (2–4) to what their peers actually say – as opposed to what they *think* they are going to say. Effective conversation requires children to value the contributions of their conversation partners, allowing each member of the conversation an opportunity to contribute (5–7). Proficient conversationalists also monitor the reactions of their conversation partners and use these partner reactions to determine how long their turns should be and which conversational topics to discuss (8).

Even adults vary in their social conversational ability, this variability has consequences not only for friendship formation but also for employability (7,9–11). It is well-established that children with weaker social communication skills are more likely to exhibit both poorer mental health and increased levels of behavioural difficulties as adolescents (12,13). While variability in social communication skills is not new (2), teachers report that recent years have seen an increase in the proportion of children for whom poor social communication is a hurdle to engaging with peers and in collaborative discussion in the classroom (14). In previous work – and as we will see below in the current project – teachers attribute this decline in social skills partly to COVID (15) but also partly to the increase in time which children and their parents are spending on their electronic devices (14).

It has been a statutory requirement in England and Wales for some time that teachers include in their teaching: collaborative conversation as well as attentive listening, relevant responding and the ability to monitor listener interest (16). However, our previous work has established that few upper primary teachers teach or scaffold conversation (14). Because of time pressures (and the focus on assessments such as SATS) upper primary teachers currently spend most classroom time on literacy and numeracy. Yet good oral language proficiency is critical for literacy and is one of the most significant predictors of numeracy (see (17) for a review).

Therefore, we argue that it is essential to allocate some classroom time per week to scaffolding and supporting child social conversational ability. The aim of the current programme was to develop resources for upper-primary teachers to implement these as effectively as possible with the least additional effort on the part of the teachers. The essential philosophy of the CoSI programme derives from established conversation therapy techniques, which have demonstrated effectiveness when applied in small group or clinical contexts (18–22). Such programmes generally involve the following essential elements. First, the educator highlights a particular aspect of social communication, encouraging the children to reflect on this. Second, the children themselves engage in and practice those skills. Third, the educator highlights which aspects of the social conversation went well and which could possibly be improved (which teachers in our focus groups often referred to as 'two stars and a wish').

2. Aim and Objectives

Our project aim was to develop an effective, teacher-friendly programme blueprint for teaching social conversation in mainstream upper-primary classrooms on a whole-class basis (i.e. universal).

Objective 1: To develop an effective, teacher-friendly programme and materials in collaboration with upper-primary teachers.

Objective 2: To test programme feasibility in classroom settings.

Objective 3: To determine teacher views of the programme.

Objective 4: To determine the most appropriate means of assessing child conversation skills with a view to a future study comparing the programme to a control group.

Objective four included the follow sub-elements:

- To compare direct measures of child conversation;
- To trial child self-evaluation of their conversation;
- To investigate teacher-completed measures;
- To estimate potential intervention effect sizes.

3. Achieving objective 1: Developing an effective teacher-friendly programme and materials in collaboration with upper-primary teachers.

To achieve our first objective, a Teacher Advisory Group was formed. This consisted of five highly experienced primary school teachers, who were consulted and with whom the first version of the CoSI programme was co-developed. Following this, four different Year 4 teachers trialled the initial programme. These four teachers (two from Kent and two from the North-West of England) were recruited through a combination of participation in our project launch event together with emails distributed by the Kent County Council Educational Psychology team. Our aim was to recruit schools in areas of social disadvantage to test the feasibility of using the CoSI programme in more challenging education settings. Of the four schools, one Manchester school had a high proportion of multilingual children whereas one Kent school had 44% of children on Free School Meals[2], with 38% on the register for Special Educational Needs and 32% recorded as having English as an Additional Language.

The four teachers implemented the programme in a staggered fashion. Weekly one-to-one consultations on programme content and delivery were carried out with each participating teacher. In addition, one lesson per week for each teacher was video-recorded. This informed iterative amendments to the materials, lesson plans and content with the result that different teachers trialled somewhat different versions. At the end of the programme, one-to-one interviews were held with each teacher to ascertain their views. Following this, participating teacher views were reported, and potential hurdles were discussed in a group meeting with our Teacher Advisory Group. This feedback guided the development of the current version of our CoSI programme as well as the development of the teacher training videos. The current version of the programme is outlined below.

4. The Conversation for Social Interaction programme

The CoSI programme is designed for whole-class delivery to children of upper-primary school age in mainstream settings. Each unit comprises three parts: direct teaching in an introductory lesson, structured learning activities and unstructured practice with peers, for which feedback is provided. The overarching learning objectives for each unit are outlined in Table 1 below. Each unit builds on the preceding one.

[2] At the time of data collection, only those Year 4 children of parents with an equivalent annual net earned income of £7,400 or less were eligible for free school meals. Across the UK, the average proportion of children in a school who are eligible for Free School Meals is 25.9%.

Table 1: Summary of CoSI unit content

Unit	Title	Key aim
1	Social chat is teamwork	For children to understand that conversation's topics are co-constructed by (at least) two people, who acknowledge and build on each other's comments
2	Think about how your chatting partner feels	For children to understand that failing to do the above can make the conversation partner feel ignored – but that we all do this sometimes (and we can rectify this).
3	Step by step from one topic to the next	For children to understand that topics can and do change in small incremental steps. Thus, responding in an 'on-topic' manner does not involve saying something vaguely related to (for example) pets. Rather, it involves actively listening and responding to what the conversation partner has just said.
4	Balance the chat	For children to understand that because conversation is 'teamwork', all partners should be able to and try to contribute. That is, this unit switches the focus towards turn-taking.
5	Checking listener interest	For children to understand that they need to be actively monitoring the impact they are having on their conversation partners (and that they can use this information to decide whether to continue a particular topic or to try to actively involve more reticent conversation partners).
6	Chatting to unfamiliar children	For children to think about how to use visual clues (e.g. what a potential conversation partner is currently doing) as well as shared prior experience to start a conversation. This unit also draws together the key learning points from the previous units.

In addition, the following topics are not specified to particular units but are reinforced across units:

- Learn to accept and accommodate different conversation styles;
- Understand that one's conversational behaviour impacts the feelings of others;
- Learn to respond in a way that builds on the conversation topic as it gradually shifts;
- Learn how to use questions to find out about your conversation partner;
- Learn strategies for involving quieter partners in a conversation;
- Learn how to be an active listener and show you are interested in someone else;
- Understand that everyone makes 'chatting slip-ups' (and be aware of some phrases to use to rectify these),
- Practice using these concepts and skills and generally feel more comfortable chatting to peers.

5.1 Introductory PowerPoint Lessons

To introduce the children to the key concepts, each unit starts with an interactive PowerPoint lesson. The PowerPoint slides include short video clips of children (recorded in East London schools) engaged in spontaneous conversation, which are used to enable the teacher to encourage their class to reflect on key points. For example, the introductory lesson to unit two includes a short video clip in which one child is talking about scoring a hat trick in football and his conversation partner, rather than acknowledging this, replies to say that the two of them have missed their geography lesson. This clip is used in the lesson as a springboard to encourage

children to reflect on how conversation partners might feel when you ignore their contribution. The introductory lessons also introduce icons to represent key concepts (e.g. in this case thinking about how your conversation impacts your partner's feelings). Certain icons were linked to key vocabulary terms. For example, the 'building blocks' icon was used to reinforce the key concept that in conversation we try to use 'connecting statements' to build on what our conversation partner has just said. These icons are then used throughout the programme to reinforce learning.

5.2 Structured Practice

Structured practice activities often took the form of games. These focused on a key taught element of the programme from that week's introductory lesson and broke it down into practicable component parts. These structured activities included the following:

- **People Chat Differently** (unit 1) aimed to help children understand that everyone has a different conversational style (e.g. some are chatty whereas others are quieter but might be good listeners)**.** Children chatted to at least three different other children in their class and then reflected on some of these differences.
- **The Train Game** (units 2 and 3) targeted the skill of providing relevant responses which elaborate on the topic of another child's conversational turn. In groups of three, two children took turns to add to a conversation. One child monitored the conversation to listen out for off-topic responses. Children who made off-topic responses practised 'fixing' their response. Each relevant response allowed the train to move one space along the rails. In unit 3, the game was amended to practise 'connecting' to what the conversation partner had just said while also moving the topic along by a 'small step', i.e. by also adding a little piece of (related) information. Thus, the Train Game required the child to listen attentively to be able to provide an appropriate response.
- **Lemmings in the Lava** (unit 4) highlighted the need for children to contribute to but not dominate a conversation. In groups of three or four, two children would have a conversation. The other children in the group would use a dial (lemmings on a seesaw over lava) to provide continuous visual feedback on whether one of the conversing children was dominating (or not contributing enough). The children succeeded in the game by working together and thinking about how to 'fix' any conversational problems.
- **The Detective Game** (unit 5) focussed on interpreting the listener's emotional expressions and using these to gauge whether they are (or are not) interested - and so whether to stop talking or change topic. Unlike currently existing materials for supporting children to interpret emotional expressions, we used naturally occurring expressions of children from the video footage we had recorded in East London schools. Thus, in some cases, the expressions were subtle and open to a number of interpretations – as is usually the case in real life. Another important point is that in the CoSI, the focus is on teaching children to *use* the information about partner emotions to guide their own conversational behaviour.
- **Starting social chats** (unit 6) in small groups children looked at pictures of children in various locations (e.g. a child in a playground with a bike) to brainstorm how this information could be used to start a social chat.

These structured activities could be used to reflect on learning points as often as required and the teacher could provide feedback to support learning. Active learning through game playing was recommended for effective teaching of social conversation, in early consultations on the CoSI programme development (14).

5.3 Unstructured social Chat and Feedback Provision

There is considerable evidence that children learn language through usage (23) and that this involves extensive repetition (24). Thus, an integral part of the CoSI programme involves providing upper-primary school children with opportunity to actively engage in social conversation. Another essential component of CoSI involves educators providing explicit feedback to children on their social conversation. Practice with peers and the provision of feedback are core components of social communication interventions aimed at clinical populations (22,25,26) as well as within the few existing studies which trained conversation skills in small groups of high need children without a diagnoses (19,27).

In CoSI, peer practice involves at least one 15-minute unstructured conversation exercise each week. For this, the class is reminded of the learning objectives for the current unit. Then children are placed in groups of two or three, shown three to five pictures as ideas for conversation topics, and then allowed time to explore this conversational area with minimal or no scaffolding from the teacher (depending on need). During these unstructured conversation activities feedback may be provided by the teacher, depending on their evaluation of the situation. CoSI training encourages teachers to offer scaffolded support to encourage the child to seek their own solutions. When the child is not successful in independently finding a solution, the training recommends a staged approach for the provision of direct feedback. The first stage involves praising the child for something they have done well. The second stage involves asking the child to reflect on what they could do better. The third stage involves offering teacher's perspective on what could be changed. The CoSI resources for teachers include sheets, which offer phrases linked to each week's learning objectives, with examples of praise points and constructive comments. Finally, at the end of the chat, the teacher asks the class (or certain pairs) to consider if and how their chat related to the learning objectives.

5.4 Training resources

Before using the CoSI programme, teachers are advised to first read through the information on the website including the four-minute 'overview' video: https://www.kent.ac.uk/school-of-psychology/research-media/cosi/Overview-of-the-CoSI-programme.mp4 . It is also recommended that teachers watch the 20-minute recorded talk on the CoSI website about the elements of social communication and conversation, their importance and how the website and training resources provide support to build children's skills.

In addition, the website currently provides two more specific training videos. The first is a four-minute clip about why, when and how to best provide individualised feedback to children on their social conversation (see here https://www.kent.ac.uk/school-of-psychology/research-media/cosi/Training-on-what-is-social-comm-and-key-elements-soc-conv-and-why-important-FOR-TEACHERS.mp4). Another training clip illustrated how to set up and play the Train Game, since two of the teachers in the initial development had found the instructions for this game difficult to follow.

6. Achieving objective 2: testing feasibility in classroom settings

Once the CoSI programme had been revised, the teacher training videos created and the child measures selected, we ran a study examining objective 2, in which six new schools ran all six units of the CoSI programme (see https://www.cosi-conversation.org.uk under 'programme') with their Year 4 classes. The research questions were:

a) Will teachers run the CoSI programme?
b) How will teachers view the CoSI programme once they have completed it?
c) How did participating teachers suggest we amend the programme?

All six participating schools were mainstream, state schools[3]. The three Manchester participating teachers all had class sizes of 29 to 31 children. Two of the Kent participating teachers had class sizes of 31 children each. The third Kent teacher had a class size of 23 children with a high percentage of pupils eligible for Free School Meals (67%). Three of the other schools (one in Kent and two in Greater Manchester) also had a high proportion of children eligible for free school meals, namely 44% - 57%, whereby the national average is 25.9%. Participating teachers were given basic instructions about how to access the online resources. In an initial 45-minute training session, a researcher walked the teacher through slides, which describe the key aims and principles of the programme. (In future versions of the CoSI programme, this initial 45-minute training will comprise a video-recorded talk, which teachers can access on the website). Following this training, teachers were offered a link to an optional online training video on the general principles of social conversation. They then downloaded materials and were encouraged to adapt and use them in a fashion that seemed most applicable to their students.

6.1 Will teachers run the CoSI programme?

All six participating teachers completed the programme, although half took considerably longer than 12 weeks to do so for several reasons including illness or feeling that their class required more practice before introducing new or additional concepts. Timetabling was an issue because in most schools the hours per day on certain curricula topics is stipulated by management prior to the start of the year and there were no or very few 'free' slots. Most schools opted to run the sessions during their timetabled slot for Personal Social Health and Economic (PSHE) or Relationships and Health Education (RHE). To evaluate implementation, each of the six teachers were asked to complete six brief questions per week about which components they had delivered, how long delivery had taken, how long preparation had taken, whether they thought the activities had had an impact and (if yes) to provide notes regarding the latter. Although not every teacher completed these weekly questions every week, it was possible to determine that delivery of the introductory lessons had taken 30 minutes on average (ranging from ten minutes to 40 minutes) and the structured activity (game) took on average 25 minutes.

6.1.1 Methods for data collection: classroom observations

A key focus of this part of the study explored if and how the teachers ran the peer-to-peer social chat practice in a whole class context and if and how they provided feedback. To this end we observed three peer-to-peer conversation practice sessions per participating teacher (except for one participating Kent teacher - details below).

6.1.2 Findings from classroom observations

6.1.2.1 Modelling and provision of positive feedback linked to objectives

In the remaining five schools, the teachers all circulated and managed to listen to at least two groups during peer-to-peer unstructured social conversation practice and some teachers managed nearly half the class at times. In the Kent school with a small class (*N*=23), the teacher and teaching assistant always managed to listen to all the conversations and did so within 15 minutes. All five teachers engaged in modelling and / or scaffolding of social conversation where a pair or group were struggling. In addition, all five teachers provided 'positive' feedback which specifically referenced the unit's learning objectives as well as connecting specifically to what the children had just been saying. For example:

[3] In three of these six schools, the 'other' Year Four teachers (N = 4) voluntarily asked if they could simultaneously carry out the CoSI programme in their classrooms and thus they also participated in the initial training sessions. While we did not have capacity to interview or observe these teachers (or the children in their classrooms), we take it as a very positive indicator that these four teachers were keen to trial the programme.

School 5 teacher "*I loved how your conversation really connected - you were moving in stepping stones; you started talking about cats and ended up on hamsters*".

6.1.2.2 Teacher feedback (to pairs / groups) involving suggestions for improvement
For four of the five teachers, observers noted at least once that the teacher provided the child with suggestions for improvements (see some examples below). However, for one of the Kent teachers this was mainly about joining in and for one of the Greater Manchester teachers this type of feedback was variable as to whether it referenced what the children had been saying.

School 4 teacher "*You noticed there was a big jump. What could you do now?" "You could fix it. What did [FIRST CHILD] say before you started talking about dogs*"

School 3 teacher "*You made a great comment about [TOPIC]. Now you need to listen to the response so you can make another comment"*

School 6 teacher "*You were all asking some great questions there. Did we add onto CHILD's comment about playing in the park?' (C: No) T: 'What could we do?'*

6.1.2.3 The role of teaching assistants
Five of the six schools had teaching assistants (TAs) co-present in the classrooms. In two schools, at least one teaching assistant provided feedback in a similar manner to the teacher and / or who joined in with the children's conversations to model. In the other schools, the TAs generally assisted one or two children with identified high needs. One class did not have any teaching assistants co-present, which made the situation for this teacher particularly demanding given a class of 31 children, the school had twice the national average for Free School Meals and approximately one quarter of the class had an identified Special Educational Need (SEN). The teacher reported that frequently when she circulated to listen in, some behavioural issues arose. This teacher is therefore strongly in favour of running the peer-to-peer conversation element as a small group intervention (i.e. with certain children taken out of the classroom by another educator).

6.1.2.4 Classroom noise levels
In all schools, the level of classroom noise resulting from these peer-to-peer conversation sessions could be problematic, at least some of the time. In one Manchester school the observer noted that the volume made it difficult for the teacher to hear the children's conversations. One Kent school resolved the noise issue when the weather was good by taking the children onto the playground and spacing them out.

6.1.2.5 Other hurdles for feedback provision
In most classrooms a few children initially appeared anxious about engaging in peer-to-peer conversation during the first observation. However, both observers noted improvements in this by their final observation.

Reduced chatting by the children when a teacher arrived to listen was reported by two teachers (one Kent and one Manchester). This was also posited as a possible hurdle in the focus groups with teachers who had not run the programme in their classes (see section 7.2). However, in most schools, as the programme progressed, children became used to continuing their conversations while the teacher was listening.

6.1.2.6 Lesson plenaries

In five of the six schools, teachers ended the sessions with lesson plenaries to discuss what had gone well. However, there were differences in the degree to which teachers successfully enabled children to reflect on their conversations. This worked best when teachers drew children's specific attention to the learning objectives so that children focussed on how they had managed their conversations (rather than mentioning the content of their conversations).

6.1.2.8 Summary of classroom observation findings

In sum, in most schools, it was possible to run peer-to-peer unstructured social conversation practice in a whole class context. Furthermore, even though teachers often expressed anxiety about whether they were 'doing the right thing' during these sessions, the above examples demonstrate that teachers can include this element of the programme. However, implementing this aspect of the programme may require the assistance of a teaching assistant and an understanding of the classroom context. In all schools, solutions regarding noise management are required.

6.2 How did Year 4 teachers view the CoSI programme once they had completed it?

6.2.1 Methods for participating teacher interviews and focus groups

After each of the six teachers had finished running the programme, they participated in an interview via Zoom, which combined forced-choice questions with open-ended follow-up questions. Responses to the open-ended questions were analysed using content analysis (28,29). Transcripts were examined to determine which words or phrases were regularly generated. These were then organised into conceptually related categories.

In addition, we held a focus group with these teachers when they had almost finished the CoSI programme. Unfortunately, it proved impossible to find a day and time when all could attend. In the end, this focus group consisted of the one 'participating' Kent teacher, one participating Manchester teacher and the one 'partner' teacher from Kent (i.e. who ran the programme, but who had not been observed or interviewed). These data were analysed using 'thematic analysis', (30), which differs from content analysis in that it is more interpretative and attempts to determine what the data means in terms of the broader questions of the project.

Many of the categories from the interviews overlapped with those from the focus group of the teachers who trialled the programme. Therefore, findings are combined in the summary below, which are divided into, positive aspects, then challenges, followed by teacher recommended amendments and finally a summary.

6.2.2 Positive findings from participating teachers

In the post-programme one-to-one interviews, all the teachers said that they would run the CoSI programme again (albeit with some adjustments as outlined below) and that they would recommend the programme to friends and colleagues.

a. *Enjoyable*: All teachers spontaneously said that the children found the programme enjoyable, with some highlighting the videos embedded in the PowerPoint lessons and some highlighting the games.
b. *Increased teacher understanding of social communication*: When asked whether they had learned anything about social communication over the course of the programme, five of the six teachers agreed. The exception was one participating Kent teacher, who already had an excellent conceptual understanding of social communication prior to commencing CoSI. This teacher responded to this question by saying 'Tricky one. I feel like I didn't know everything, but I can't really put my finger on something that I didn't know'.
c. *Increased teacher knowledge of their pupil's social communication skills*: Five of the six participating teachers said that the programme had enabled them to learn a great deal more about the oral

language and social communication abilities of the children in their class. In addition, the remaining teacher (see above) commented that he would not have known at the beginning of the programme which children were in greatest need for this intervention. A common finding across the schools was that it was not always children with diagnoses of, for example, autism, who had the weakest social communication skills.

d. *Supports other aspects of social interaction development*: A theme in the focus group was that the CoSI programme had helped the children to slow down and actively listen, rather than solely focussing on what they wanted to say. In addition, teachers mentioned improvements in social awareness, particularly in recognising and interpreting social cues.
e. *Wider benefits for social wellbeing*: A major theme in the participating teacher focus group was that CoSI helped children to develop skills that had wider social benefits such as boosting the oral communication skills required for participating in other curriculum subjects and adapting language for different audiences.
f. *Reduces conflict*: All teachers in the participating teacher focus group agreed that the CoSI programme led to reduced peer-to-peer conflicts. One Manchester teacher said that prior to the programme, many children did not know how to handle conflict well and many of their social interactions resulted in fighting and arguments. She credited the programme with helping them improve in managing disagreements.
g. *Other positive impacts*: See below under section 8.4.2 teacher's view about the programme's impact. In addition, other positive points raised by teachers included: enhancing the teacher-child relationship, supporting wider learning and increasing future aspirations.

6.2.3 Main challenges when running the programme

a. *Finding time in the curriculum*: The participating teachers' focus group highlighted the difficulty with finding time to deliver the programme, particularly given pre-existing expectations relating to the curriculum. As mentioned above, the teachers resolved this by delivering the CoSI during their timetabled slots for RHE or PSHE. Nonetheless the focus group expressed concerns about needing to catch up on the PSHE / RHE content missed while they ran the CoSI programme. This links to findings from the Curriculum and Assessment review that oracy is currently not sufficiently prioritised by school leadership teams.
b. *Noise levels during peer-to-peer social conversation practice*: Two teachers noted that during the whole class peer-to-peer conversation sessions, noise levels were often very high, which could make it too difficult for the teacher to hear sufficiently to provide feedback and even at times for the child conversation partners to hear each other. In fact, due to the issue of noise - and the Lombard effect whereby people speak louder (and change their pitch and other features) in noisy environments - one Kent teacher took the children to the playground for the peer-to-peer conversation sessions. This teacher also allowed children to walk while talking, which appeared to reduce anxiety for some. However, this solution is weather-dependent and another Kent teacher argued that implementing the playground option would increase behavioural issues in her class. The third Kent teacher said that peer-to-peer conversation worked well in his classroom but acknowledged that this was probably because he had a small class size.
c. *Concerns with providing feedback during the peer-to-peer conversation sessions*: Several teachers raised issues in relation to providing feedback during the peer-to-peer unstructured conversation sessions. Indeed, when asked whether they had seen any adverse effects in children, two Kent teachers replied that they had – and in both cases the adverse effects were child anxiety in response to feedback on their social conversation. One of these teachers believed that this could be detrimental to children's self-esteem; she preferred to provide feedback as a whole class plenary discussion at the end of the peer-to-peer social conversation practice session. In the focus group, another teacher described how some children interpreted one-to-one feedback as a form of reprimand, leading them to feel disheartened or as though they had

failed. We therefore outline below in section 10.1 the need for future funding to allow for further iterative co-development with teachers in order provide a suite of feedback options to reflect the demands of teachers, classes and contexts.

6.2.4 Participating teacher suggestions for improving the programme

a. *More games and quizzes*: As part of the post-programme interviews, we asked each of the six teachers who had run the CoSI programme in their classrooms how we should amend it. We provided a list of options which had arisen from one-to-one interim interviews which we had held with these teachers while they were still running the programme. However, we also emphasised that they could suggest any alternative changes. All six teachers commented that the children loved the quizzes, and they recommended that we include more of these as part of the introductory (PowerPoint) lessons. They also recommended more games for structured practice (i.e. games akin to the Train Game, Lemmings in the Lava and the Detective Game – see section 5.2).
b. *Linking the CoSI programme more closely to the RHE / PSHE curriculum*: Two teachers in the final interviews recommended building in aspects of more general social development. One teacher recommended we teach the basics of turn-taking and the other recommended that we include explicit teaching on how to manage disagreements. In the participating teacher focus group, two other teachers recommended that we link our programme more closely to the RHE / PSHE topic of friendship (partly to resolve timetabling issues). The teachers commented that the children's lack of resilience (e.g. coping with feedback) was a barrier to their learning in all areas and particularly in building their social communication skills and asked if there was a way to include more content that would help to build resilience.
c. *Run the programme for longer*: Five of the six participating teachers argued that we should run the CoSI programme for longer than 12 weeks. One teacher said that the programme should run for the whole school year and two said that it should be run 'for as long as it takes for children to start to implement the key points of the unit'. Importantly, the remaining two teachers argued that the programme should be delivered across the whole school and spread over all year groups, starting with a highly simplified version for reception class children. (This was also one of the most predominant themes in the participating teachers' focus group). In addition to the increased chance of embedding learning, some teachers raised the point that if CoSI were a whole-school programme, all education professionals within a school would know and could reinforce key vocabulary used in the programme to help children reflect on conversation (e.g. 'connect' to what your partner just said).
d. *Amending the peer-to-peer unstructured conversation practice sessions*: Diverse solutions were proposed for amending the peer-to-peer unstructured conversation practice sessions. The Kent teacher without a TA favoured the idea that the social conversation and feedback component of the programme should be run as a small-group intervention. However, three other participating teachers (one from Kent and two from Manchester) argued against this for various reasons. One reason given was that to select children for a small group intervention, one would first need to understand the individual social communication needs of each child and this was not always apparent until the CoSI was run for several weeks in a whole-classroom context. In addition, one of the Manchester teachers suggested that TAs may not be sufficiently skilled to follow the programme instructions. An alternative solution for noise reduction proposed by the participating teacher focus group was a 'carousel' approach (which they argued would work if no teaching assistant were present). This would involve having most of the class engaged in independent activities, such as reading or using devices, while the teacher sat with one small group at a time for peer-to-peer conversation practice. By structuring the session in this way, they argued the teacher could give more targeted attention to specific children without needing to manage the whole class at once, making better use of limited staffing and ensuring more meaningful interactions with smaller groups.

e. *Feedback:* The participating teacher focus group felt that it would be more constructive and inclusive to provide feedback to the whole class during a plenary session at the end. That is, the teacher could highlight some good examples, which s/he had seen – and also discuss some hurdles for conversation but without singling out and saying which pupils had demonstrated these aspects of conversation. Their argument was that providing feedback in this format could help boost confidence and avoid the potential anxiety associated with singling out pupils.
f. *Differentiation materials:* Teacher views were not united regarding the need for differentiation materials. In the interviews, two teachers thought that differentiation materials such as prompt cards or word banks were needed, whereas three teachers strongly argued that differentiation is best left up to teachers since they will know what their individual pupils need. The latter was also the view of the focus group.
g. *Cultural considerations*: One consideration raised by two Manchester teachers was the fact that almost all the children in their classes were growing up in a cultural community, where the children do not attend holiday clubs or play with unknown children at playgrounds. This meant that it was not appropriate or feasible for these teachers to include the part of unit 6 about generalising skills to chatting to children they do not know. However, one of these two teachers suggested that this could be a useful lesson for Year 6 children prior to progressing to secondary school. In addition, certain discussion topics (e.g. pet dogs, roasting marshmallows) were not considered to be culturally relevant. A related issue pertains to eye contact. We had deliberately designed the programme to avoid encouraging children to engage in eye contact because a) some children with Special Educational Needs find this uncomfortable and b) this is not appropriate for certain cultural communities, where (for example) children are discouraged from making eye contact with individuals – such as teachers – above them in the perceived social hierarchy. However, the School 6 teacher nonetheless mentioned encouraging the children to maintain eye contact. We will develop more teacher training resources to clarify these points.
h. *Involving parents as part of the programme:* There was unanimity in the teacher focus group that many of the social communication difficulties they witnessed stemmed from a lack of opportunity or scaffolding in the home environment and not from a lack of potential. They suggested that workshops for parents could be included as part of the programme. They also suggested that some of the structured games could be sent home with children to play with parents. At the same time, the focus group noted it was often the parents of children who stand to gain the most who did not engage - so relying on home activities might not be prudent.

6.2.5 Summary of participating teacher views

The introductory lessons and structured games were feasible and enjoyable. All teachers said they would run these two elements of the programme again. Five of the six participating teachers ran the peer-to-peer unstructured social conversation with feedback as we had suggested, so in principle it seems to be feasible in most schools. However, many teachers would prefer to only deliver 'feedback' to the whole class at the end of the peer-to-peer practice. In addition, solutions are required for noise reduction. These may include either taking the peer-to-peer conversation outside or into school hall or running it as a carousel.

6.3 Teacher views of the importance of the CoSI programme

Most of the teachers who implemented the programme viewed the programme as extremely important. Some example quotes from the final interviews on this topic are below.

"*that's why I've gone to our SLT [Senior Leadership Team] and said I think I think we do need to roll this out next year and decide which classes. And I think it does work in year 4…..and don't think they're too young in year 3 either. I think, get them early*" School 5 teacher 5:56

"*…and they [PARENTS] don't talk children at home the way they should. Erm So, it's kind of made me take a step back and think, oh, these are skills that you think they would have already. But they don't, and they really need a lot of support with it to get them using it*" School 4 teacher 9:26

"*Those children being on the estate and knowing their siblings and their parents and knowing their families, they kind of do need like a really stripped back curriculum because they've missed a lot of their key foundation years and in my eyes most children need kind of circle times. They need to learn about sharing, they need to learn all those kind of key blocks. And in my opinion, they don't need to learn about the Romans or the Greeks. At the moment, I don't feel they have the other parts which are going to then support them for the rest of their lives*". School 3 teacher 23:51

7. Achieving objective 3: investigating teacher views of the programme

7.1 Views of the programme elicited from the six teachers, who ran the revised programme

The reviews of 'participating' teachers, who were observed running the programme in their classrooms are reported in section 6.2 above.

7.2 Views of teachers who did not run the programme

We investigated the views of teachers who did not run the programme in their classrooms with three aims in mind.

- The first aim was *accessibility*; that is, how easy it would be for teachers, who had no further information or guidance about the programme to access it (via the CoSI website), understand the programme and plan a lesson.
- The second aim was to determine how *effective*, *teacher-friendly* and *feasible* teachers would find the programme (and an example unit) if no further guidance were provided.
- The third aim was to have a deeper dive into some concerns raised by some of the six teachers, who were running the CoSI programme in their classrooms.

7.2.1 Participants

Two key methods were used for recruiting participants for the focus groups of teachers, who did not run the CoSI programme with their classes. First, we emailed schools that had participated in research (not related to CoSI) carried out by the Kent Child Development Unit, the Centre for Inclusive Education or with Psychology, Communication and Human Neuroscience at the University of Manchester. Second, we randomly chose two counties outside Greater Manchester, Kent and London, namely Leicestershire and Shropshire, and emailed all state, mainstream primary schools. We verified with school office staff that respondents were current teachers.

Each teacher in the final sample of 10 was currently teaching Key Stage 2 in a state mainstream primary school in England. The mean years of teaching experience was 13.2 years (range 2 – 25). On average, the teachers were currently teaching at schools towards the lower end of the socio-economic spectrum; on average the mean proportion of children on Free School Meals was 38% (in comparison to the national average of 25.9%) and the mean IMD decile of

the schools' postcodes was 3.4[4]. Some teachers taught at schools with a high proportion of multilingual children.

In the end, there were three focus groups of teachers who did not run the CoSI programme with their classes. One consisted of four Kent teachers and took place in person. One consisted of three teachers from North-West England. One 'cross-county' group consisted of three teachers from Leicester, London and Shropshire.

7.2.2 Procedure

For each focus group, activities followed a topic guide involving three tasks.

Task 1:
The task focussed on the accessibility of the website and planning a lesson based only on access to the website with no further guidance.
Focus group participants were asked how easy they found it to register on the website and how easy it is to navigate the website without any assistance. Then they were asked about the specific unit they were asked to read prior to attending the focus group (either unit 2, unit 4) and were asked what they thought of the materials and how easy the instructions were to follow. Each group was then asked to find a consensus regarding how they would use these materials.

Task 2:
Each group then focussed on one of the structured games, which had been developed for the programme. The Manchester focus group discussed Unit 4 and the 'Lemmings in the Lava' game (see section 5.2 above). The Kent focus group discussed Unit 2 and the 'Train Game'. Both these groups were asked to discuss how they would run the activity, whether they foresaw any issues, whether they would make any adaptations. They were asked to reach a consensus on what their top priority would be for improving the game. The 'cross-county' focus group examined the Train Game and were asked to consider some issues which had been raised either during interim feedback meetings with participating teachers or by the Kent non-participating teacher focus group. They were asked whether any of these would be issues for their pupils, whether they could foresee any other issues and were then asked to identify potential alternative administration options. These were:

- Deliver the game as a whole class activity not small groups (e.g. whereby every child in the classroom is asked to listen to and provide a relevant response to what the previous child has said as a whole class activity)
- Teacher sits in with some small groups and models
- Teacher gives explicit instruction on how to respond when in the game one of the players suggests that a given child's response is not relevant i.e. curiosity not defensiveness
- Create a new, longer video clip (aimed at children) showing children successfully playing the game
- Have question cards whereby children are allowed up to three questions in any train game (in order to circumvent solely asking questions).

Task 3:
The third task concerned the provision of feedback on children's social conversation. For this third task, teachers watched the feedback training video (see under 5.4). The focus group

[4] This information is available as part of the publicly available Index of Multiple Deprivation scores for postcode regions (usually averaged over a number of adjacent postcodes). 1 is the most deprived and 10 is the least deprived areas (Ministry of Housing, Communities & Local Government, 2019).

participants engaged in a role play whereby one participant was asked to be positive about giving feedback and the other was not convinced that it is either beneficial or possible. Participants were asked to generate potential barriers and solutions to barriers raised. By the focus group dates, we had already received feedback from the one participating teacher who decided she would prefer the unstructured social conversation plus feedback component to be run as a small group intervention. Therefore, if the concept of a small group intervention was not spontaneously raised by focus group participants, the facilitator explicitly asked whether it would be worth testing this aspect of the programme in this manner.

7.2.3 Analysis and findings

A thematic analysis was undertaken following the procedure outlined by Braun and Clarke (30). Key themes were:

a. *Easy to use and well-designed materials*: Two predominant themes were that the programme and materials were easy to use and well-designed. There were positive comments about the PowerPoint lessons and video clips in them (although the 'cross-county' focus group commented that some of the clips involved children from a 'posh' school (e.g. own clothes) where the children were too 'calm').
b. *Feedback on peer-to-peer social conversation*: A predominant theme was that feedback strengthens communication skills and encourages children to use effective strategies. However, teachers were sceptical both about being able to provide feedback in a whole classroom context (due to noise and only being able to 'visit' one or two groups) and about a teaching assistant being able to manage social conversation and feedback in a separate group. There were also misunderstandings that the teacher would have to provide feedback to all children within a given unstructured conversation practice session. Some teachers appeared to misinterpret the training video as indicating that the teacher would need to take the children to a separate room to provide feedback. (This may in part be because we used the term 'individual feedback'). Therefore, video examples of feedback provision within a whole classroom lesson might be necessary to illustrate implementation.
c. *Feedback potentially reducing child self-esteem*: An additional concern raised was that children might be anxious about making mistakes.
d. *Feedback disrupted conversations*: A predominant theme was general scepticism about the benefits of interrupting the children's social conversation to deliver any kind of feedback. Some teachers were concerned that by doing this, they would interrupt the conversation flow.
e. *Addresses need*: All these teachers were unanimous in their belief that a programme like CoSI is needed. They shared a concern that if such a programme were not rolled out in schools, children might not have the basic skills necessary to access and engage with the national curriculum effectively. The reasons given for the need included the following (with example quotes for each):

    i. Oracy is weak but necessary for literacy
    "*If your oracy isn't strong enough, then you're not going to be able to access the curriculum.*" Manchester Focus Group Task 1 30:05

    "*and we've discovered that we're struggling with children writing well because they don't speak well.*" Kent Focus Group Task 1 22:31

    ii. The skills taught by CoSI are needed for group work for curriculum subjects such as science.

"*So it's almost like this is training them not just to be better humans and better friends, but also hopefully that would link into, you know, paired talk for a science experiment* " Kent Focus Group Task 1 22:54

iii. The skills taught by CoSI lay the basis for the skills needed to manage disagreements.

"*I think it's good to sort of explicitly teach these skills in advance because we usually go through things like this when sort of erm something's gone wrong* [disagreements], *kind of feedback and restorative behaviour to get them to understand at that point that actually this is to prevent those things from happening in the first place*." Kent Focus Group Task 1 16:54

"*I think what really it has struck me and I've only, you know, looked at it all really briefly, but the focus on so how do you think the other child felt is something that the kids I'm working with that just are really struggling to understand that someone else might feel something*." Kent Focus Group Task 1 15:48

iv. Parents are talking less to their children now that so many are on devices
"*How many of them actually speak at home or how many of them go upstairs on a tablet and don't speak to anybody after 3:00 again*." Manchester Focus Group Task 1 22:54

8. Achieving objective 4: determining appropriate means of assessing child conversation skills for a future trial

Prior to the current project, there were few reliable tools for assessing children's conversational ability (31,32). The existing measures typically involved either parental report or a lengthy scoring process. Both would be problematic for a future study investigating the effect of the CoSI programme on children's conversational ability. Such a study would need an outcome measure that researchers could administer to the children who had been randomly assigned (to CoSI programme or control programme) to assess children post-programme without knowing whether they had participated in the programme or solely in a control condition; parental or teacher report is not viable for this purpose. A large-scale future study would also require measures that could be scored quickly. Moreover, the development of a resource which allows children's conversation skills to be mapped in an efficient and effective manner would naturally be highly useful for other studies and applied purposes.

8.1 The 'Measures' study: direct assessment of children's conversations

To address this fourth objective, we selected tools to assess those aspects of conversation that are the focus of the CoSI programme. Our primary focus was on tests which involved 'objective' observation of conversation skills in interaction with another person (rather than teacher reports that can be completed on the basis of general impressions of a child). These types of assessment can also provide a potential control for the conversation skill of the partner, as they are assessed in an interaction with a researcher. Additional requirements for measure selection at this stage included avoiding the need to transcribe whole conversations and avoiding the need for video recordings (given ethical constraints). The final sample of child participants in this study included 72 Year 4 children (43% female, 15% multilingual, 17% with a developmental diagnosis and 19% on the Special Educational Needs register)[5]. No participants were included in any of our other studies. All participants for this study attended one of four mainstream, state primary schools in

[5] These two categories were not mutually exclusive. However, some children had diagnoses without being listed as requiring SEN support and vice versa.

coastal or rural East Kent. Across the schools the mean proportion of Free School Meal children was 28% (school range 19% - 42%).

8.1.1 Measures Study Procedure

8.1.1.1 Semi-structured conversation procedure and scoring

Each child interacted one-to-one with a researcher in an assessment of conversation. This assessment took place twice, approximately two weeks apart. The first part of the assessment followed an elicitation procedure which we have extensively used in other research studies (33). This involves inserting into an apparently naturalistic conversation at topic-appropriate moments a series of pre-planned statements, called 'probes' (e.g. 'I think big dogs are quite scary') (27,34). Recordings were processed through Microsoft Word automatic transcription software. The researcher used words from the probes to search the transcripts to find child responses. After checking those sections of the audio-recording, child responses to these probes were coded in terms of whether they were 'contingent' i.e. both relevant to and furthering the topic of the probe.

8.1.1.2 Unstructured conversation procedure and scoring

During the second half of the assessment (the 'unstructured conversation'), the conversation solely followed the child's lead. This was scored in terms of the eight sub-scales shown in Table 2 below. Four were from the pre-existing Conversation Skills Rating Scale (CSRS) (35). Four scales were from our own Conversational Turn-Taking Scale (CoTTs), which we devised primarily for the purpose of distinguishing verbosity (talking too much) from reticence (talking too little) since these are two important targets of the CoSI. Two graduate research assistants (one of whom was a qualified Speech and Language therapist) scored the unstructured conversations. This required several rounds of inter-rater reliability training during which a more detailed manual was co-written.

Table 2: Explanation of scales used to score 'unstructured' conversation

Measure	**Sub-scale**	**Aspect of conversation measured**	**Example extreme point on scale**
Conversation Skills Rating Scale (CSRS) (35)	Maintenance of topics and follow-up comments	Topic maintenance	Provides no extension of topics once initiated; follow-up comments are unrelated to previous topics.
	Encouragements or agreements	Supporting the conversation topic	Provides no verbal encouragement or agreements, or provides it incessantly.
	Asking of questions	Supporting the conversation topic / showing interest	Never seeks information from partner, or constantly barrages partner with questions, or asks questions of excessive intimacy or privacy
	Use of time speaking relative to partner ("Balance")	Turn-taking	Virtually does not speak, or uses only brief utterances, or speaks constantly and does not allow partner speaking

			turns or turns of any duration.
Child Conversational Turn-taking Scale (CoTTs)[6]	Quantity ("Verbosity")	Turn-taking	Consistently gives excessively long responses.
	Tangentiality	Topic maintenance	Almost entirely off-topic. This may include a) returning to previous topics b) switching to unrelated topics c) unclear content or bizarre utterances or d) addressing something else in the environment
	Dominance	Turn-taking	Doesn't allow for reciprocal exchange, primarily led by the child and difficult to break the flow. Cannot be redirected.
	Reticence	Turn-taking	Ignores conversational overtures entirely

8.1.2 Measures Study Analysis

Test reliability was examined in two ways. We examined whether two independent raters would obtain approximately the same scores for a given child (i.e. 'inter-rater reliability'). We also examined whether child rankings on test scores remained the same if tested at two timepoints (i.e. 'test-retest reliability').

8.1.2.1 Analysis of responses to conversation probes in semi-structured conversation

When two raters independently determined the proportion of conversation probes children responded to contingently (relevant and building on the topic), we found excellent inter-rater reliability (k = .92). This 'conversation probes' measure was also highly reliable in terms of test-retest reliability (r = .55, p < .001), i.e. whether child test scores were similar if tested at two timepoints. Furthermore, the distribution of scores indicated that this tool was age-appropriate for Year 4 children. Previous research has established that children's contingent responding is significantly related to a standardised, widely-used, parental-report measure of children's social communication (34). Therefore, we selected this semi-structured conversation probes measure for the next stage.

8.1.2.2 Analysis of scales used to score unstructured conversation

Table 3 below shows that of the eight scales we used to score the 'unstructured conversation' phase of the children's one-to-one conversations with the researcher, only two (CSRS 'encouragements' and CoTTS 'dominance') showed less than excellent inter-rater reliability. For test-retest reliability (whether child test scores are similar at two timepoints), all measures were

[6] More information about this scale and its psychometric properties can be accessed in our forthcoming manual (aimed at speech and language therapists), which will be available through our website.

significantly related across the two timepoints and showed at least moderate reliability (with one measure – CoTTS 'quantity / verbosity' – bordering on strong test-retest reliability).

All measures except CSRS 'questions' showed a distribution of scores that indicated that this tool was age-appropriate for Year 4 children. (The CSRS 'questions' measure scores indicated that a large proportion of children found it difficult to ask questions in interaction with an adult.).

Table 3: Reliability of scales used to score 'unstructured' conversation

Sub-scale	**Aspect of conversation measured**	**Inter-rater reliability** (ICC)	**Test-retest reliability** (Kendall's tau)[7]
CSRS Maintenance of topics and follow-up comments	Topic maintenance	.88 / .94[8]	.33
CSRS Encouragements or agreements	Supporting the conversation topic	.77 / .66	.31
CSRS Asking of questions	Supporting the conversation topic / showing interest	.93 / .86	.32
CSRS Use of time speaking relative to partner ("Balance")	Turn-taking	.92 / .91	.32.
CoTTs Quantity ("Verbosity")	Turn-taking	.97 / .85	.45
CoTTs Tangentiality	Topic maintenance	.92 / .87	.35
CoTTs Dominance	Turn-taking	.88 / .69	.38
CoTTs Reticence	Turn-taking	.95 / .84	.38

8.2 The 'Measures' study: teacher questionnaires

Teacher questionnaires would not be useful as an outcome measure for a future evaluation of the programme because teachers will know whether children have participated in the intervention (i.e., they would not be blind to condition). However, we were interested in developing a short teacher questionnaire, which focuses on the skills taught in the CoSI because we reasoned that this might in the future be useful to help teachers track improvements relating to their delivery of the programme.

We developed a 10-item questionnaire, which the four teachers in the 'Measures' study completed for the 72 children. It had good internal consistency, which means that all the questions were measuring similar or related abilities (Cronbach's $\alpha > 0.8$ for initial and repeat responses). Confirmatory factor analysis with three factors corresponding to our three multi-item target constructs was carried out. A fit to all questions approached adequacy (RMSEA = .17[9]; CFI[10] = .763). There was one item which did not load well onto the 'Maintaining a topic' factor and one which did not load well onto the 'Verbosity factor'. When those items were removed, we obtained a good fit (RMSEA = .09; CFI = .96) suggesting good construct validity. Test-retest reliability was very good for all constructs, both multiple (Reticence r = .87; Topic maintenance r = .63; Verbosity r = .85) and single item (Initiation r = .58; Reciprocal conversation r = .67).

[7] For Kendall's tau 0.49 or more is considered 'strong' and 0.26 or more is considered 'moderate'.
[8] ICC for time 1 is reported prior to and the ICC for time 2 is reported following the slash.
[9] This indicates how well the model matches the real data, with smaller values indicating a better fit.
[10] CFI indicates how much better a statistical model fits the data compared with a poor baseline model, with higher values meaning a better fit. A score of 1 would indicate a perfect fit.

However, none of the questionnaire factors were related to the measures of child conversation derived from interaction with a researcher. Furthermore, many of the teachers reported that they did not feel sufficiently confident of the social conversation skills of the children in their classes since they do not hear them engaged in social conversation. This reflects comments by teachers who ran the programme in their classrooms (see section 6.2), namely that before running the programme, they would not have known which children had the weakest social communication skills. Therefore, this - or any – teacher questionnaire is highly unlikely to be of utility for assessing whether the CoSI impacts child conversation.

8.3 Examining potential impact of the programme

Following guidance from our advisory group, we adopted a mixed-methods approach to evaluate the potential impact of the programme across the classes of the six teachers who trialled our revised programme (see Section 6 above).

- First, we conducted *quantitative* assessments of targeted conversation skills with participating children before and after their classes had completed the CoSI programme.

- Second, before undertaking the post-programme quantitative assessment, we gathered *children's views* on their experience of the programme.

- Third, we asked the *teachers* who delivered the programme to comment on any perceived impacts – positive or negative – on their pupils.

Sample sizes differed across these three components: children in one Manchester school could not be assessed quantitatively because this school did not permit opt-out consent. However, their teacher still provided feedback. In two other schools (one Kent and one Manchester), we were only able to test approximately 65% of children both prior to and following the CoSI programme because the teachers started the programme late and ran it for longer than predicted. This left too little time to assess all the children post-intervention prior to the school holidays.

8.3.1 Quantitative measures before and after CoSI participation

8.3.1.1 Procedure for the quantitative measures

For the quantitative measures, we assessed children in conversation with a researcher before their class took part in the CoSI intervention (i.e. at baseline) and then again after their class had completed the final unit of the programme (i.e. post-test). For this we used a subset of the child conversation measures from our 'Measures' study (see 8.1 above).

8.3.1.1.1 Semi-structured (probe) conversation

First, we used the semi-structured conversation (probe) procedure as outlined in 8.1.1.1 above, since this had excellent inter-rater as well as test-retest reliability. To reduce testing time, we reduced the number of probes per testing session from eight to six.

8.3.1.1.2 Unstructured conversation

Second, we carried out an unstructured conversation. We reduced the number of scoring sub-scales we used from eight to four. That is, to assess the impact of CoSI we neither used the CSRS 'encouragements' nor the CoTTs 'dominance scales because inter-rater reliability was not in the 'excellent' range for either. We also did not use the CSRS 'Maintenance of topics and follow-up comments' or the CoTTs 'Tangentiality' sub-scales, since these assess topic-maintenance (see Table 2), which was assessed by our semi-structured (probe) measure.

Thus, the scales we used to score unstructured conversation was CSRS 'Use of time speaking relative to partner' (which we call 'balance'), CoTTS 'quantity / verbosity, CoTTS 'conversational reticence' and CSRS 'questions'.

Table 4 below summarises the measures we used to assess child conversation before and after children had participated in the CoSI programme.

Table 4: Summary of child conversation assessments

Measure	**Measure**	**Sub-scale**	**Aspect of conversation measured**
Paradigm for semi-structured conversation	Conversation 'probe' paradigm	NA	Topic maintenance
Child Conversational Turn-taking Scale (CoTTs)	Conversation Skills Rating Scale (CSRS) (35)	Asking of questions	Supporting the conversation topic / showing interest
Child Conversational Turn-taking Scale (CoTTs)	Conversation Skills Rating Scale (CSRS) (35)	Use of time speaking relative to partner ("Balance")	Turn-taking
Rating of unstructured conversation	Child Conversational Turn-taking Scale (CoTTs)	Quantity ("Verbosity")	Turn-taking
Child Conversational Turn-taking Scale (CoTTs)	Child Conversational Turn-taking Scale (CoTTs)	Reticence	Turn-taking

8.3.1.2 Participating child sample for the quantitative measures

Our final sample consisted of 118 children at post-intervention. Thirty-three percent had English as an Additional Language (the majority from one of the Manchester schools). Three schools (two in Kent) and one from Greater Manchester had very high proportions of children on Free School Meals (44%, 67% and 45%) plus postcode IMD deciles of 1 or 2.

8.3.1.3 Findings for the quantitative measures

8.3.1.3.1 Analysis: semi-structured conversation

Prior to taking part in the CoSI programme, children provided relevant responses which built on the conversation topic around 44% of the time. After taking part in the CoSI programme, children were able to provide these types of responses on average 64% of the time. This difference was statistically significant, with a probability of having occurred by chance of less than 0.0001, with a medium effect size[11] (Cohen's d=0.58). While we did not have a control

[11] Effect sizes are usually classed as either 'small', 'medium' or 'large'. A small effect means the difference (e.g. between pre and post intervention) is fairly subtle in terms of how noticeable it is in daily life. A medium effect means that the average child showed a meaningful improvement, that is, enough that it would likely be felt in their

condition and children had of course grown older between pre- and post-test, these results are promising in suggesting a quantifiable benefit of the CoSI programme.

8.3.1.3.2 *Analysis: unstructured conversation scales*

Changes for the 'quantity / verbosity' and 'questions' subscales did not reach statistical significance. However, as can be seen from Table 5 below, two (half) of the unstructured conversation scales showed statistically significant improvements between baseline and following the CoSI programme. Child scores were on average significantly higher for the CSRS 'conversational balance' scale (where higher scores indicates better performance) after taking part in the programme (Odds ratio: 1.97[12], $z = 2.767$, probability of occurring by chance < .005). 'Conversational Reticence' showed a significant decrease (where lower scores indicate better performance) after the programme (Odds ratio=-1.58; $z = -1.892$; probability of occurring by chance < 0.05). Again, these results suggest CoSI has promise.

Table 5: Baseline vs post-programme comparison for the unstructured conversation measures

Measure	**Baseline Mean (SD)**	**Post-programme Mean (SD)**	**Odds ratio**	z
Questions *(Higher score is better Max = 5)*	1.5 (.95)	1.49 (.87)		n.s.
Balance *(Higher score is better Max = 5)*	3.14 (.89)	3.47 (.87)	1.97	2.767
Verbosity *(Higher score is worse)*	2.36 (1.5)	2.20 (1.4)		n.s.
Reticence *(Higher score is worse)*	2.40 (1.35)	2.05 (1.15)	-1.58	-1.892

8.3.2 Participating teacher views of programme impact

In the post-programme one-to-one interviews, we asked the six teachers who had run the full programme in their classrooms for 12 weeks each whether they had seen any positive effects in any of the children. All teachers except one[13] said that they had noticed positive effects in some of the children and indeed they stated that this was the case for most of their pupils, with estimates ranging from 70% to 100% of the children. Of the five who agreed, all gave anecdotal evidence of the children demonstrating improvements that the teachers attributed to the programme. Two examples (both from the high multilingual schools) are listed below:

*"They just don't have the stimulus at home. They just don't have these kinds of conversations or they just don't have, you know, the libraries at home …so they don't have the language to talk creatively. So that really was my primary reason for wanting to do this programme. I knew that the social side [*of the programme*] was brilliant but I just needed them just to be able to talk. And if you say - if you gave them stimulus and said talk about this, the number of them who would literally just sit still and stare straight ahead and not even look at the person they were meant to be talking to at the beginning of the year. It was quite staggering and we've come so far from that now. But because I think the "in" was making it a social programme and you can talk about your favourite*

day-to-day life. In studies with children, it is quite rare to find medium effect sizes due the huge variability amongst children.

[12] Odds ratios indicate how much more likely post-intervention scores are to be higher than baseline (prior to intervention) scores. For example, this odds ratio of 1.97 means that it is approximately twice as likely that a randomly chosen child in our sample will score higher at post-intervention than at baseline.

[13] This was the teacher who decided not to run the unstructured peer-to-peer conversation component.

restaurant or you whether you want the cat or all the things that they wanted to talk about, that's now the - what I'm seeing is if I give them something to talk about in writing or talk about in reading, they've got all the skills to be able to look at each other, make eye contact, and be engaged. So it's had a huge impact on learning and that's the hub of it for me" School 5 teacher 4:48

"*They understand that everyone talks differently, so if someone's more of a questioner or someone's more quiet, that's not a bad thing. There's always things we can do to even out our conversation asking questions how they understand how their partner's feeling as well, if they're not listening and things like that, connecting statements as well, yeah.*" School 6 teacher 03:27

8.3.3 Children's self-evaluations of programme impact

After the children's classes had completed the CoSI programme, a researcher met with each child one-to-one in a quiet area and carried out the following measures prior to the assessments outlined above in 8.3.1. The aim was to determine whether children showed any evidence of remembering the taught content, whether they had enjoyed it and potentially to see whether children thought the programme had changed anything in their daily lives.

8.3.3.1 Introductory (PowerPoint) Lessons

The researcher first showed the children a short clip taken from the introductory lesson in unit 2 (which involved one child providing an off-topic response – see section 5). The researcher reminded the child that they had watched lots of videos of children like this in their lessons and asked them (showing them three face emojis) whether they had liked these lessons a lot (smiley face), a little bit (neutral face) or not at all (frowning face). 49.59% responded with 'a lot' and half responded with 'a bit'. Two children said, 'not at all'.

The researcher then showed the child seven icons used in various lessons and asked the child whether they help them remember anything about what they learnt in the lessons. The children's open-ended responses were scored in terms of whether they showed evidence not only of remembering the term used but also what it meant and 85% clearly did so by giving a clear example of the concept in practice.

8.3.3.2 Free peer-to-peer conversation

The researcher then showed the child a picture of two children chatting in a classroom and said "you have also spent some time chatting with children in your class. Did you enjoy the lessons like this?". Here 67% replied that they enjoyed this component of the programme 'a lot' whereas 37% said they enjoyed this 'a bit' (and three children said they did not enjoy this at all).

8.3.3.3 Do the children believe the programme impacted them?

The researcher then showed the child photos of two pairs of children who featured in unit 1 to illustrate the idea that people have different chatting styles, but they all have their advantages. The researcher also showed the child the icon for 'people chat differently'. Here she said '*You've learnt that people chat differently. Can you tell me how you chat?*'. Finally, she asked the child whether there was anything they sometimes find difficult about chatting and whether they thought the lessons helped with this. Here, 86% said they thought that the programme had helped them with their own chatting 'a lot', in real life. Only 6% said they thought this was the case 'a bit', 5% said 'not at all' and 2% were unclear. We then asked children how it had helped, and example quotes are below.

> P1 "*I let other people talk and I don't speak loads so like I'm not taking over the whole conversation and not listening to other people*" 3:34

P23 "*I used to not chat at all like all I did was like chill in my room and then my mum said 'Dinner's ready' and I didn't even barely said anything I just 'Ok' but now I talk to my mum"* 09:41

P25 "Y*eah. With like not paying attention.....and letting them speak back*" 05:38

P71 "*if you got into a fight with your best friend you could chat about why you went into that fight and you can apologise*" 5:41

P74 " *Well, you have to try and look out for body language to know if they if you're chatting partners, enjoying your conversation"* 1:13

P76 "*I think it's helped me be more confident when I talk to other people*" (1:15)

P82 "*They've helped me think how to build on a chat*" 03:20

P86 "*to err to maybe like not dominate the chat and connect the statements and like just don't change the sentence straight away*" 02:45

P97 " *I was like the quiet kid, I didn't I didn't like to talk. Now I'm not really scared to talk in public*" 5:50

P139 "*If I'm talking to multiple people, I have to talk to all of them instead of one person*" 3:47

9. Project Summary and Conclusions

All four objectives of the project were met. We co-created and developed the Conversation for Social Interaction (CoSI) programme, designing it for whole-classroom delivery to children of upper-primary school age in mainstream settings. Year 4 teachers, who ran this programme in their classes, were teaching in mainstream state schools including in schools with a high proportion of children from the lowest end of the socio-economic spectrum and / or a high proportion of children who hear a language other than English at home. We also ran focus groups with upper primary mainstream teachers, who had not trialled the programme in their classes, but who had accessed the programme via our website. In the main, teachers found the CoSI programme to be broadly feasible, useful and teacher-friendly. The introductory (PowerPoint) lessons received a universally positive response from teachers, although some suggested minor amendments such as more quizzes or more interactive elements. In general, teachers who ran the programmes in their classrooms found ways to make the structured practice (games) work for their classes. Future versions of the programme will more clearly outline these options.

Almost all teachers who ran the final version of the CoSI programme ran peer to peer social conversation practice sessions in their classrooms and delivered feedback. However, this aspect of the programme generated the greatest number of challenges both for the teachers, who trialled the programme, as well as for focus groups of teachers who solely accessed the programme via our website. Many teachers were concerned about the potential for unsustainable noise levels during peer-to-peer conversation. In addition, many teachers had concerns about delivering feedback to individual children when they are engaged in conversation. Moreover, for some classes with specific constellations of challenges it may not be viable to run the peer-to-peer practice component without two adults present in the classroom. Interestingly, the participating children tended to express more positive views of peer-to-peer conversation practice (67% liked this aspect 'a lot') than of the introductory lessons (49.5% liked this aspect 'a lot'), possibly because of the somewhat didactic format of the front-of-class PowerPoint lessons.

Thus, there is possibly a disconnect between the aspects of our programme preferred by teachers and those preferred by the participating children.

During this project, we also established reliable, valid and age-appropriate means for assessing child conversational ability when conversing one to one with an adult researcher. This is important because, to date, although there exist several means for assessing child social communication more broadly (e.g. including measures of nonliteral language - understanding that words can be used to have multiple meanings), there exist scarcely any non-questionnaire-based measures of child conversation. We found that the 'semi-structured conversation with probes' (33) measure (which assesses children's ability to provide relevant responses, which build on the topic of a 'probe' statement) was in the excellent range for both types of statistical reliability. These are, first, whether two independent raters would obtain approximately the same scores for a given child (i.e. 'inter-rater reliability') and, second, whether child rankings on test scores remained the same if tested at two timepoints (i.e. 'test-retest reliability'). Of the eight scales, which we selected for assessing unstructured conversation, six met these criteria (see Table 3). Furthermore, all these measures were determined to be age-appropriate for Year 4 children.

We carried out one-to-one conversations in a quiet area to assess 118 children on both their unstructured conversation as well as on a semi-structured conversation measure at baseline (before their class teacher started the CoSI programme) and at post-test (after their class teacher had completed the final unit of the CoSI). The semi-structured conversation (i.e. 'probes') measure and two of the four scales for rating unstructured conversation (namely a scale for turn-taking and a scale measure of whether the child was contributing enough to the conversation) showed statistically significant improvements at post-intervention in comparison to baseline (see Table 4). In addition, five of the six teachers believed that the programme had had an observable positive impact on many / most children (and they all provided anecdotal evidence of this). Finally, 87% of the children stated that the CoSI programme had helped them with conversation in real life and at least a third of these provided examples of how exactly it had impacted them.

Finally, an important finding from our teacher interviews and focus groups was that teachers strongly believed that there is a high need amongst their recent and current cohorts for a programme akin to the CoSI. Key reasons they outlined in support of this include the views that a high proportion of children in their classes exhibit insufficient oral language and social communication skills to be able to negotiate peer relationships and to successfully learn literacy, numeracy or scientific thinking.

10. Recommended next steps

The findings from the current project underscore the strong potential of the core 'backbone' of the CoSI programme, namely the provision of ready-to-use materials that support teachers in facilitating children's reflection on conversation skills, alongside dedicated time for peer-to-peer conversation practice. Looking ahead, our aim is to integrate these core elements with a suite of implementation options to allow the CoSI to be adapted flexibly to meet the diverse needs of teachers, classes and particular contexts. We believe there are three key strands required as next steps for the development of the CoSI. Some of these strands could potentially be carried out simultaneously.

10.1 Further co-development with teachers of universally feasible and /or school-adjustable options for peer-to-peer conversation practice and feedback delivery

10.1.1 Development of strategies for minimising noise plus options for peer to peer practice

Given the importance of feedback for learning, a key issue which requires further exploration is the dual hurdle outlined by teachers in relation to running peer-to-peer social conversation practice. Teachers reported issues relating to overall classroom noise levels. Many reported an aversion to interrupting children's peer conversation to comment on conversational performance 'in the moment'. Some teachers without co-present TAs experienced logistical issues with combining personalised feedback with classroom management. This aspect of the programme will need iterative development together with teachers, to trial different options for peer-to-peer conversation (and feedback provision) in the classrooms.

10.1.2 Development of further online teacher training materials

Once the options have been finalised, additional training films for teachers would be developed. These would illustrate running peer-to-peer conversation practice with a wider range of feedback provision options. This would help prevent some of the misunderstandings observed amongst the teachers who did not run the programme. Such training videos would need to illustrate some of these options in practice in a whole classroom context.

10.1.3 Further development of programme units and materials

Most teachers who ran the CoSI programme in their classrooms suggested that it would be beneficial to make the introductory (PowerPoint) lessons more interactive through the inclusion of quizzes, which the children enjoy. In addition, these teachers requested more 'structured' games such as the Train Game, Lemmings in the Lava and the Detective Game (see section 5 above). This is in part because some of the teachers felt that their classes needed to spend longer than two weeks on particular units to consolidate the concepts, but they wished to avoid solely repeating these games.

In addition, as discussed above, many teachers argued that some of the key precursor socio-cognitive skills – such as turn-taking – needed to be embedded first (perhaps in some cases with younger year groups). By Year 4 most children accept the need to 'wait their turn' in traditional board games (including our Train Game) since the cue for the next turn is visual and follows a preordained pattern. Understanding turn-taking in conversation is more difficult, particularly in multi-partner conversation, especially as some overlap between speakers is common even in adult conversation, and indeed in many cases can even be a positive encouragement for the current speaker to continue (9).

Finally, in line with the Curriculum and Assessment Review recommendations for citizenship (36), there would be value in developing a unit – possibly aimed at Year 5 or Year 6 children – which further develops children's understanding that successful conversations can involve the conversation partners holding very different opinions. This unit would not only teach verbal strategies for expressing differences of opinions in a calm and inoffensive manner but would also teach the importance of accepting that we will not always convince others to share our opinions.

10.2 Further development of quantitative child assessment measures

10.2.1 Child-to-researcher conversation measures

With a very long-term view with regards to programme assessment, it would be useful to explore whether it is possible to develop researcher-delivered child conversation measures that can be administered and scored quickly with only minimal training.

10.2.2 Peer-to-peer measures

Given child and teacher anecdotes regarding how the CoSI improved child confidence in oracy with their *peers*, and given the importance of this for social wellbeing, further investigation should consider either how to efficiently capture this or whether it is possible to determine the

relationship between measures of child conversation skills in conversation with a researcher, on the one hand, and how the same children converse with their peers.

10.2.3 Does CoSI improve child listening comprehension for extended discourse and /or capacity for participating in discussions around curriculum topics?

Given the Curriculum and Assessment Review's (36) proposal that there should be an oracy framework to complement the frameworks for Reading and Writing, it would also be useful to investigate whether the CoSI programme has an impact on (1) listening comprehension for extended discourse (e.g., narrative comprehension) and (2) oracy as measured by the ability to give a convincing and coherent short talk (such as simpler version of one of the GCSE English Language speaking tasks). In addition, it would be revealing to examine whether the CoSI also enhances children's capacity to participate productively and collaboratively (e.g. listening to and respecting the contributions of others) in discussions around curriculum topics, as suggested by one of the teachers who ran the CoSI in her classroom.

10.3 Does the CoSI improve child conversational ability?

Once a comprehensive suite of options has been developed to cater for the needs of all teachers (and classes) regarding unstructured peer-to-peer social conversation practice, the crucial question is whether the CoSI programme is *causally* linked to improvements in child conversational ability. To test a causal link, an evaluation would need to compare differences at baseline versus post-intervention between a group who completed the CoSI programme and a group who did not. Importantly, the assessment of child conversational ability at post-intervention would need to be carried out by researchers who are unaware whether each child has participated in the CoSI intervention versus the comparison group.

11. Implications for policy and practice

The teachers who participated in our project identified a pressing need for a programme such as CoSI because they were concerned about the current state of pupils' spoken language and social communication skills. These concerns link directly to the recommendations emerging from the recent Curriculum and Assessment Review (36) that there should be an oracy framework, which not only develops spoken English but also links to key goals within Citizenship and related areas (RE, Personal, Social, Health and Economic (PSHE) education).

11.1 Key Findings from Teacher Feedback

***Weaknesses in oral language*:** Teachers reported that oracy skills were underdeveloped across many schools, despite being foundational to literacy and indeed all aspects of formal learning. In this light it would be extremely concerning if there were not an increased focus on oral language during Key Stage 2 (17).

Weaknesses in social communication: A large proportion of teachers noted a decline in social communication skills amongst current cohorts, which they attributed to reduced parent-child interaction potentially due to several factors including increased pressures resulting from socio-economic disadvantage as well as increased digital device use.

***Collaborative learning*:** Teachers highlighted the importance of programmes such as CoSI in developing the conversation skills essential for group work, particularly in subjects requiring dialogue, reasoning and joint problem-solving. This ties in with the findings that explicitly teaching and scaffolding 'academic' conversation skills improves children's ability to think critically, build on one another's ideas and engage in meaningful, equitable classroom dialogue (37).

***11.1.4 Conflict resolution*:** Many teachers argued that CoSI equips pupils with the skills to manage disagreements constructively. They argued that this reduced disruptive behaviour and increased on-target collaborative classroom-based learning. This is particularly important given the rising levels of poor pupil conduct in schools (38).

11.2 Social conversation as central to an oracy framework

The current UK National Curriculum for Primary Spoken English (16) requires teachers in England and Wales to develop the following three statutory skills (p17):

1. Gain, maintain and monitor the interest of the listener(s)
2. Listen and respond appropriately to adults and their peers
3. Maintain attention and participate actively in collaborative conversations, staying on topic and initiating and responding to comments

In practice, however, pressure on Key Stage 2 teachers to secure required literacy and numeracy outcomes often means that the oral language skills and other spoken English language objectives receive limited or no attention.

We therefore strongly support the Curriculum and Assessment Review's call for a structured oracy framework comparable to existing frameworks for reading and writing (36). Oracy underpins key competencies such as reasoning aloud, debating, collaborating and questioning and the National Foundation for Educational Research (NFER) identifies communication and English language skills as amongst the most in-demand now and in the future (39). Conversation skills in particular should be central within any new oracy framework. To give one example, our recent work has highlighted that children's ability to maintain topics in everyday conversation overlaps with the skills needed to construct narratives (40). More broadly, social communication– and conversation especially – is fundamental to most careers and vocations, not least because these skills are essential for workplace relationships, collaboration and success in job interviews, that open the door to employment.

11.3 Social conversation as the key to core components of Citizenship and Relationships and Health Education (RHE)

Half the teachers who implemented CoSI spontaneously reported that the programme reduced peer-to-peer conflict. In the context of recent findings showing rising behavioural challenges in schools (38) – and given that such issues are frequently cited as a factor in teacher attrition – this potential link between improved conversational and better behaviour warrants further investigation.

These observations echo research on discursive civility, which emphasises the importance of teaching 'genuine listening as perspective-taking' (41). Conflicts among pupils often stem not from disagreement itself but from failures to listen accurately to one another's viewpoints (42) or to express alternative views appropriately. Strengthening these skills is therefore highly relevant to both RHE and Citizenship education.

Two of the six participating teachers recommended that the CoSI be expanded to include explicit units on turn-taking, managing disagreements and negotiation. Such additions would directly support the pre-skills identified in the Citizenship curriculum, including *"expressing opinions, listening to others' points of view, and agreeing and disagreeing respectfully*" (p58) (36).

11.4 Take-home message for policy

1. *Curriculum Integration*: The CoSI could form a key part of a forthcoming oracy framework as part of English but also linking to Citizenship and integrated into other key subjects for which for spoken language across the curriculum, in line with recommendations from Dockrell & Marshall (17). This would strengthen the role of spoken language as both a cross-curricular skill and a building block for PSHE.

2. *Progression Across Key Stages*: Teachers advocated for versions of CoSI across all primary year groups. Early embedding would support learning objectives such as understanding friendship, practising turn-taking, and learning negotiation skills.
3. *Addressing Inequalities*: By targeting social communication skills, CoSI has potential to reduce the impact of socio-economic disadvantage as well as Special Educational Needs and Disabilities and support levelling-up in educational outcomes, in line with wider DfE policy objectives.

11.5 Conclusion

Teachers' perspectives, supported by robust evidence, indicate that our Conversation for Social Interaction (CoSI) programme has the potential – if further developed – to form a core part of an oracy framework, particularly for Key Stage 2. As the Curriculum and Assessment review notes "*oracy can support active learning, critical thinking, and enhance students' engagement and understanding*" and "*improves workplace cohesion and productivity*" (p42) (36). Back-and-forth conversation is the primary medium through which children learn the vocabulary, sentence structures and social norms of their language (43). Furthermore, the potential for CoSI to be integrated into aspects of the curriculum which teach the understanding of relationships (RHE), debate, collaboration and questioning would contribute to the National Curriculum's overarching aims of promoting social cohesion and democratic participation.

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