Curriculum Evidence

Probe 2 Report

Dialogue and Curriculum Development

in association with:

curee

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Contents

Introduction

This probe was designed to illustrate how teachers are attempting to structure and promote students' use of dialogue in group work while developing the curriculum. The probe takes the form of five case studies which illustrate teachers' attempts to innovate, evaluate and refine the curriculum across the four key stages. The cases also illustrate a continuum of practices, ranging from a teacher attempting to promote dialogue and group work among students with literacy difficulties to quite sophisticated forms of student talk.

The report is divided into four parts. Part one looks at the existing knowledge base around introducing group work and enhancing dialogue in the classroom. The second part contains details of five case studies, most of which focus on a single lesson. Drawing on all of the cases, the third section then explores some of the implementation challenges faced by the teachers in encouraging students to engage in more effective group work, dialogue and talk. The report then concludes with an outline of the research methodology used in the case studies.

1. The knowledge base

This section offers a brief introduction to group work and dialogue and presents findings from previous research as a framework through which to examine the practice illustrated in the case studies.

Why focus on group work and dialogue?

In recent years, the amount of research into effective talk and dialogue in the classroom has greatly increased and considerable claims have been made about its potential benefits for students. Indeed, Dawes (2008: 16) defines teaching itself as '*the professional expertise to create dialogue in which learning takes place*'. Studies (e.g. Swan, 2006; Payne *et al*, 2006; Hogarth *et al*', 2005; Bennett *et al*, 2005) have found that effective dialogue has a positive effect on student learning, which embraces:

- subject learning
- understanding
- communication skills, and
- students' control over their own learning.

These studies also report on a range of affective changes including:
- increased interest in the subject
- greater motivation towards learning
- improved emotional development, and
- enhanced confidence and self-esteem.

These outcomes for learners link to aims, outlined in the QCA's 'Big Picture' of the curriculum, of enabling young people to become successful learners and confident individuals. As the case studies demonstrate, developing their capacity for talk, dialogue and group work also builds skills in a range of areas outlined in the Big Picture, such as literacy and numeracy, and develops attitudes and attributes such as confidence and risk-taking.

What does effective dialogue in group work look like?

Research (e.g. Wegerif *et al* 2004; Mercer *et al*, 2004; Mercer & Sams 2006) shows how effective learning between students in collaborative small groups arises from students having to explain and justify their decisions or points of view to each other. Building on earlier work by Barnes & Todd (1977; 1995), the researchers involved in these studies used the term 'exploratory talk' to describe this kind of educationally effective talk. They define exploratory talk in the following terms:

> *Exploratory talk occurs when group members engage critically, but constructively with each other's ideas. Statements and suggestions are offered for joint consideration. These may be challenged and counter-challenged, but challenges are justified and alternative hypotheses are offered. In exploratory talk, knowledge is made publicly accountable and reasoning is visible in the talk.*

> (Mercer *et al*, 1999: 97)

Talking in an exploratory way in a group is associated with benefits such as building a climate of trust and collaboration; developing a dialogic space for pursuing creative solutions to problems; and learning ways of reasoning that individuals can use independently (Mercer & Littleton, 2007: 135). The studies distinguished exploratory talk from two other kinds of group talk: cumulative and disputational talk. With cumulative talk, speakers build positively, but uncritically on what others say. Group members use talk to construct a 'common knowledge' by accumulation. Cumulative talk is characterised by repetitions, confirmations and elaborations, rather than by challenge. Disputational talk is characterised by assertions, disagreement, short exchanges and individualised decision-making. There are few attempts to pool resources, or to offer constructive criticism of suggestions. Talk moves in and out of these three categories, but the research suggested that maximising the opportunities for developing exploratory talk led to the kind of benefits outlined above for group members.

An example of exploratory talk is provided below (from Kearney, 2004). The discussion, which took place between a pair of 15 year old students, was prompted by the computer. The computer tasks incorporated video clips of real life events designed to promote discussion of the students' ideas about force and motion. The clips included a tennis ball rolling slowly off a table and an astronaut on the moon releasing a hammer and a feather simultaneously. Pairs of students were asked to predict and discuss what they thought would happen to the flight path of each projectile before watching the video clip. The students were used to group work and had previously encountered similar tasks led by their teacher.

> **Pat**: It's going to go down more than out.
> **Dave**: No. My prediction is it's going to go down heaps faster. It'll go out a little bit and then go down. Not much though. How do you like that? (Dave made a daft drawing showing the ball moving a considerable distance from the table).
> **Pat**: But the thing is it's going slowly – go back a bit – I reckon it's going a lot slower than that Dave.
> **Dave**: Like that? (Dave edited his drawing, reducing the predicted horizontal range of the projectile)
> **Pat**: Yeah – I reckon it's more like that Dave.
> **Dave**: Oh yeah? OK. (Not quite convinced)

Pat: It's going so slow, it'll only get pushed out from the table a little bit before it goes down. (Defending his view).

How can group work and dialogue be structured and implemented effectively?

Research (e.g. Mercer & Sams 2006; Hogarth *et al,* 2005; Bennett *et al,* 2005; Wegerif *et al* 2004; Mercer *et al*, 2004, Gillies and Boyle, 2005) has shown that effective talk does not happen by itself. Arranging students into groups will not automatically create productive learning conversations. Without support, students seldom hold good discussions – they rarely pick up on each other's ideas and consider them critically, resolving any differences through further discussion (exploratory talk). Usually, children tend not to listen to each other, one child dominates the discussion, the children argue unproductively (disputational talk) or the children happily go along with whatever another child says without any reflection or debate (cumulative talk).

Studies of primary-aged pupils (e.g. Wegerif *et al* 2004; Mercer *et al*, 2004; Mercer & Sams, 2006) show the value of helping groups of pupils to engage in productive discussions through negotiating ground rules that help to ensure that multiple perspectives are brought effectively to bear. A typical set of such ground rules includes:

Discuss things together:
- Ask everyone for their opinion;
    o ask for reasons why
    o listen to people
- Be prepared to change your mind.
- Think before you speak.
- Respect other people's ideas – don't just use your own.
- Share all the ideas and information you have.
- Make sure the group agrees after talking.

Once the ground rules have been created, it is suggested that they should be displayed prominently in the classroom so that the pupils can refer to them. As the case studies illustrate, the value of teachers' modelling how to work collaboratively cannot be underestimated, particularly where pupils have not developed the speaking and listening skills that are taken for granted in some contexts: '*Few children will achieve their true academic or intellectual potential unless they learn how to negotiate their ideas with other people through talk'* (Dawes, 2008: 42).

The studies (e.g. Wegerif *et al,* 2004) that report on the setting up of ground rules indicate the value of teachers modelling how to use the ground rules during whole class discussions, for example:
- asking pupils 'Why?'
- using 'because' to give reasons for statements
- asking other pupils what they think, and
- checking that everyone agrees before making a final decision.

Another study (Gillies and Boyle, 2005) details how a group of teachers effectively supported their pupils as they carried out group work tasks. They interacted with the pupils in a non-directive way, yet challenged the children's understandings and perspectives with the intention

of helping them to focus more clearly on the problem to be solved. The teachers' interactions included:

- reflecting meaning (for example, commenting 'It sounds as though …')
- tentatively offering suggestions (for example, commenting 'Have you thought about …?')
- reframing statements to enable children to consider an alternative perspective (for example, commenting 'On the one hand, I hear you saying that you're stuck, but on the other, you seem to be indicating that you've found the solution. I wonder what it is?')
- validating efforts and focusing on key issues and solutions (for example, commenting 'You've worked that part out after a lot of hard work. I wonder what you may need to know now if you want to find the solution?')

The study found that the pupils used the verbal behaviours modelled by their teachers in their discussions with each other. They encouraged each other, challenged each other's thinking and sought each other's opinion. In this example, a group of children were working together to write a report about penguins:

> 'What do you think about this? I wrote down [gives information about penguins]'.
> 'That's pretty good'. [Encouragement of another pupil's efforts].
> 'What are you going to write down?' [Challenge to group member].
> 'I found they go further north – north of Antarctica'.
> 'Enemies would be? What do you reckon enemies would be?' [Challenge to group's thinking].
> 'Yeah that's what I'm thinking'. [Validation of idea].
> 'It has many enemies. Put many enemies'. [The children engaged in a discussion about predators].
> 'Any other features? What do you reckon?' [Seeks group's opinion on other information to be included].

The research literature shows how consideration also needs to be given to how the group work activity is organised. Studies (e.g. Hogarth *et al,* 2005 and Bennett *et al,* 2005) have shown a number of effective ways of scaffolding and promoting discussion and participation. These include:

- Envoying – when students work in groups in two stages. During the first stage, the students discuss a common task, which differs for each group. Groups then reform, with new groups containing one member of each of the original groups, who act as envoys to report on a particular task.
- Snowballing – where pairs of students discuss a question or idea and agree on their views, then join with another pair to share what they have discussed. Finally, students work in groups of four (two pairs) to share thinking for a final time.
- Four corners – the teacher chooses a topic and the students then brainstorm related sub-topics. Through a process of elimination, four topics are identified and one each is allocated to students grouped into the four corners of the room. The groups then choose a leader, a recorder and a reporter. The topics are discussed in the groups and the reporter then summarised them for the rest of the groups.

The case studies that follow offer more detailed exploration of how these approaches are being used in the classroom, moving from pictures of how teachers are initiating group work and dialogue through to examples of more embedded practice. Links are also drawn throughout the case studies to elements from the QCA's curriculum big picture.

2. The case studies

The five case studies presented here illustrate how teachers have reviewed, revised and developed the curriculum through structuring group work and dialogue. They are intended as a series of portraits along a continuum of practice, moving from the fundamental challenge of getting children to talk with each other about the task and work together as a group to improving students' speaking and listening to helping them to engage in deeper thinking and talk and thus develop quite sophisticated collaborative skills. The case study reports follow a common format: a description of the school context is followed by an outline of the lesson or lessons being examined with example dialogues where possible. This is followed by teachers' reflections on the practice described.

Case study 1: Promoting group work and dialogue with children with poor literacy skills (KS3 functional skills lesson)

This case study shows a teacher who is at the initial stages of promoting the use of dialogue and group work. It involved students from an 11-16 secondary community school located in Stoke-on-Trent in an area of considerable socio-economic disadvantage. The percentage of students entitled to free school meals was above the national average as was the proportion of students for whom English was a second language. Along with the issue of the multiple first languages, the headteacher identified low aspirations within the local community and general weaknesses in speaking and listening as significant concerns for the school.

The lesson described in this study involved a class of 15 Year 7 students, all of whom had been identified as having special educational needs with regard to literacy. The lesson focused on making cakes as part of the new functional skills curriculum being piloted in the school. The teacher put the students into groups of two or three. One student in each group was given a recipe for making cakes (with the intention of empowering that student as leader). The student with the recipe was responsible for negotiating roles and responsibilities with their partner(s) and the groups were expected to work together in measuring and combining the ingredients, without direction from the teacher or learning support assistants. Throughout the lesson, the teacher repeatedly emphasised the importance of effective communication and collaboration in and between groups.

Dialogue 1 represents a sample of dialogue within one of the groups. It demonstrates the distribution of roles within the group and the teacher's role as prompt and facilitator. Student S1 is clearly the empowered 'leader', reading the instructions, assigning tasks to her peers, and even answering the teacher's question. It highlights some of the challenges faced by the teacher in supporting students who had not worked together before, including one student (S3) with only basic English language skills, to communicate and collaborate. Given this context and the lesson's focus on a practical task, communication between students was effective and the dialogue demonstrates how the teacher was able to build a foundation for the development of

skills and processes on which exploratory talk and more sophisticated forms of dialogue could be built.

DIALOGUE 1

T: Should we be using a knife though?

S1: Get us a knife.

S2: What do we do with the knife?

S1: Crack the egg.

T: That's it. Go over your bowl.

S2: Miss, do we need to mix it?

S1: Yeah it says here [*To another student*: Yeah we've done that], "Sieve the flour into a bowl, add all the other ingredients, beat the flour…"

S3: We need the flour.

S1: Would you get us a wooden spoon please?

[*S3 hands her the spoon*]

S1: Thank you [*begins mixing*].

To reinforce the focus on communication and discussion, the students were asked to record on post-its the subject-specific keywords they had used, once they had completed the practical task of making the cakes they. The teacher collected these and posted them on the whiteboard. In the concluding plenary, she invited the students to read out and discuss the assembled keywords in their groups and with the whole class and to evaluate their progress in the lesson.

Dialogue 2 contains dialogue taken from a plenary discussion between the teacher and another group. It reveals how the teacher encouraged productive talk by gently prompting them to choose more appropriate terms to describe what they had done during the lesson. It demonstrates that, although she had been successful in getting them to work collaboratively in groups on the practical task, their literacy difficulties meant that they still needed considerable support from the teacher to refine their language and help them to see that some of their choices were not sufficiently subject-specific. Interviewed after the lesson, the teacher was clear that her refining interventions were designed to model more expressive uses of language to them: "*It's about exploring, it's about using more exploratory language and developing that amongst themselves, rather than me prompting or them copying out of the textbook*".

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DIALOGUE 2
T: 'Slime'. Is that a descriptive word?
S: No.
T: If we were on Jamie Oliver and we were saying 'slime', what would we use as a technical
term instead?
S4: Gooey.
T: Would Jamie Oliver say 'gooey'?
S: No.
T: Somebody's got the word round here, I think. What are you going to do this afternoon?
S5: Run. Runny
T: Run. So it's 'runny', isn't it? It's thin
S6: You know when we stirred the thingy, when you did that, all the team came up and looked
up 'slime'.
T: Well, use another word than slime.
S6: Runny.
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When she was asked why she had taken what might be perceived as a risk in using group work with this class, the teacher was clear that she was motivated by a belief in the value of collaborative and peer to peer learning: "*the lesson and the classroom have been engineered to utilise group work because I feel it's an intrinsic part of education that the students learn from not just me but from each other. And I don't like stifling talk in the classroom, I don't think it's a healthy environment".* She had chosen this approach for this group of children because she felt that the lesson's emphasis on dialogue and collaboration would simultaneously address their difficulties with literacy and improve their group working skills. This was clear in her description of her objectives for the plenary assessment at the end of the lesson:

> *Bearing in mind they're only Year 7, what I was expecting them to say was how well they'd worked together, what they could improve on, what they could improve one another's skills on and to use more complimentary language… and to recognise attributes from those students. So it's about teaching them the social skills as well.*

She also associated this building of communicative and collaborative capacity among the students with the transfer to them of ownership and responsibility for their learning: *If I hadn't got the confidence, or my students didn't have the confidence in their communication [skills], I couldn't use them as a resource. And I do, quite frequently, especially at Key Stage 4.* The use of students as a learning and teaching resource, even when their group work and dialogue skills remain relatively undeveloped, reflects the Big Picture's emphasis on elements such as adaptability and risk-taking, as well as proactive and varied approaches to learning.

Case study 2: Combining individual and group working (KS1 numeracy lesson)

This case study was located in a primary school with 400 pupils on roll. Its headteacher recognised that the school was at the beginning of a period of large-scale change, for example in introducing a new creative curriculum and focusing increasing attention on talk and dialogue. This arose not least because the school had recently had its catchment area widened which had

greatly increased the number of pupils entering with speaking and listening difficulties. It was therefore at the early stages of implementing new approaches in these areas.

The lesson concerned involved a Year 2 class of 19 pupils. The topic was building arrays (multiplication models) as an introduction to multiplication. At the beginning of the lesson the teacher, refreshed the pupils' understanding of arrays by demonstrating how they worked on the interactive whiteboard, inviting some of the children to the board to complete an array. The teacher then divided the class into five groups undertaking three different tasks:

- the two highest ability groups, each made up of four pupils, played a game in which they rolled a dice twice to get two numbers from which they had to make an array. They were encouraged to complete as many arrays as possible on graph paper in the 20 minutes they were given for the task
- two further groups, containing four and five pupils respectively, played a tetris game in which they used counters to fill grids on their paper which they then coloured in to build arrays
- a group of two pupils with special education needs in numeracy worked with number flashcards on building arrays with a teaching assistant.

The pupils were encouraged to read instructions for the task to their shoulder partner and consult with their group colleagues, the teacher and teaching assistants as they undertook the task, but worked individually on building the arrays. The teacher and the two teaching assistants circulated the groups during this period, answering questions and ensuring that pupils kept on task. The pupils helped each other, but also competed with each other to see who would be able to complete the most arrays in the allotted time.

Dialogue 3 illustrates how one of the higher ability groups worked together to clarify the instructions for the task, with one of the pupils taking the lead in both explaining what they had to do and throwing the first dice. The dialogue indicates how the groups negotiated roles to be taken in the task and how careful selection of the groups allowed peers to keep each other focused on the activity. However, their dialogue did not develop beyond clarifying the instructions for the task.

DIALOGUE 3
S1: We've got to get one piece of graph paper. Can you get one for me? Get graph paper. You need graph paper
S2: That's recording us. What we're saying. It's a recorder.
S1: I think we're going to have pencils for this, haven't we? And crayons.
S3: Crayons.
S2: I'll get mine.
S1: Different colours.
S1: We've got a dice, haven't we?
S2: Yeah, two dice.
S1: Two dice.
S2: We're starting first.
S3: We are.
S1: No we are. The one with the dice starts first.
S1: [*Reading instructions*] Roll two dice and then multiply the numbers.

At the end of the lesson, the teacher summarised what the pupils had learned and reiterated the key points with the class.

Asked why she had used this approach to the lesson, the teacher explained that she saw group work as way of offering her pupils a differentiated approach to learning Maths:

> *I've been working on this differentiation lesson for this course I'm taking […] and having been thinking that through the past few weeks for this course, I thought this would be something that would show differentiation, would show them working in groups.*

She also saw dialogue as an integral part of the learning process: '*I think that kids need to talk – as long as they're staying on topic'*. This was echoed by a Year 6 teacher interviewed who emphasised the importance of allowing pupils who were reluctant to speak to rehearse with a partner. She also highlighted the value of using a range of approaches to dialogue and group work:

> *We do a lot of work in talk partners, particularly with children who lack confidence and might want to share their ideas with another person before feeding back in front of the whole class… We try and vary and do as many different types of groupings, pairings, independent work, as possible.*

She also linked the school's increasing focus on talk and dialogue with its adoption of a creative curriculum, both of which were regarded as ways of engaging the pupils more effectively and ultimately improving results. The teacher's recognition of the connection between talk and confidence, especially at this early stage of building group work skills, takes us back to the Big Picture's foci for learning, notably its emphasis on building confidence and taking risks.

Case study 3: Building children's speaking and listening skills (KS2 PHSE lesson)

This case study took place in a primary school situated in a socially deprived council estate in Leicestershire. The school has a large specialist unit catering for pupils with moderate and severe learning difficulties. Within the main school population the proportion of pupils with learning difficulties and statements of special educational needs is much higher than average, as is the proportion entitled to free school meals. Staff at the school recognised that the pupils' generally poor speaking and listening skills was having an impact on all areas of their learning. They consulted with a specialist about a way forwards, who provided them with a summary of Wegerif *et al's* (2004) research which showed the value of negotiating ground rules with the pupils for group talk.. Consequently, the teachers had generated a list of 'I can' statements which was placed in a prominent position in the classrooms. These included:

- I can take a turn
- I can answer a question that's been asked
- I can explain my answer
- I can ask a question about what we are talking about
- I can listen to others
- I can look at the person who is talking to me in a friendly way

- I can listen to everyone's ideas
- We can make a decision!

At the time of this study, the Year 4 teacher was working on group working skills during a series of PSHE lessons. The group work tasks she developed for the PHSE lessons included:
- what makes a good friend? Children worked in groups to develop an ideal friend.
- creating a list of indicators as to when a child might be about to lose their temper and what happens when they lose their temper.
- creating a poster with recommendations on how to stay calm and the best thing to do when tempers flare.

The reinforcement of the I can statement 'I can take turns' reminded the children of the importance of listening to one another rather than talking over each other. The class particularly valued this idea and used it to regulate others. The pupils also demonstrated active listening, both through body language and responses to each other, helped by the 'I can' statement 'I can listen to others'. But many of the responses were limited to one word answers and the children found it difficult to elaborate on their ideas. Also, some children tended to dominate the group; however, on occasions this supported the group in achieving its ultimate goal of reaching a decision, although the decision did not necessarily reflect the whole group's feelings. The teacher recognised that her pupils' ability to probe deeper into ideas by asking each other relevant questions was a key area for development.

Asked why she had focused on PHSE lessons for group work, the teacher commented that she felt that PHSE particularly lent itself to speaking and listening because:

> *Children's own experiences are something that most children are confident with talking about. I think group work will also work well in literacy, especially with the new framework which involves a lot of speaking and listening about different genres they will eventually be writing about. I will also use it for geography and history topic work because it helps children to gain ideas.*

The teacher felt that using the 'I can' statements was successful because they "*gave the children something to focus on. I was hoping that they would all want to be able to say 'I can'…*" She felt that they 'I can' statements had worked best where the groups of children had an adult to oversee and encourage the group rules, but she found that the higher ability children were able to use the 'I can' statements without an adult present. The teacher's reference to building on children's confidence reflects the curriculum big picture's concurrent emphasis on developing skills and attributes. The quotation above suggests that in that case speaking and listening and group work functioned as foundational skills which children applied and honed across a range of curriculum subjects.

Case study 4: Supporting the development of children's group working skills (KS2 mathematics lesson)

In this study, the teacher of a Year 5 class at a primary school in Croydon purposely selected children to work together and provided the groups with support designed to help them develop each other's thinking and discussion skills. The group work task involved playing a mathematical game according to the following rules.

Instructions for playing the game of digits

You need three players – A, B & C
On the count of three, each player displays their hand with either 1, 2 or 3 fingers extended.
Player A gets 1 point if all three players match.
Player B gets 1 point if two players match.
Player C gets 1 point if there are no matches.
Play the game a number of times.
Is this game fair?
If not, how could you make it fair?

Dialogue 4 shows how one group's thinking developed during the activity

DIALOGUE 4
Tom: I don't think this is fair
(Mark agreed and gave reasons)
Mark: I don't think this is a fair game 'cos there's only three possibilities of you getting a point
(Tom started to think aloud and explore ideas for a fairer game)
Tom: I get a point 'cos she puts up the same as me, she gets a point 'cos she puts up the same as me, you didn't get any points 'cos no one's the same …
Teacher: So what's wrong with your instructions?
(Mark sums up the groups thinking)
Mark: I didn't get any points 'cos there's only one possibility … so I don't think it's fair
Teacher: So what are you going to do, are you going to re-write the rules or re-state the rules?
(Mark and Tom start to develop their thinking)
Mark: Not re-write them, re-state them, 'cos that would be a different game.
Tom: Or you take it in turns … so I'm A the first game and B the second …
Mark: Actually that's quite good.
Annabel: Yeah, try it.

The response Mark gave on the group's behalf when their teacher asked what they thought they had got out of the activity provided evidence that they developed their mathematical understanding through playing the game together: '*Well, it was only by doing it that we realised it was about probability*'.

But the group gained more than mathematical understanding. In previous lessons, the teacher had noticed how Annabel had tended to play a dominant role in group discussions, establishing her own ideas and 'steamrolling' those of others. The teacher had made a point of praising Annabel each time she saw her actively listening to her peers. For the observed lesson, she had deliberately grouped Annabel with two other children who had equally forceful ideas to give Annabel the experience of learning from and building on other people's ideas. The strategy was successful. Annabel's active listening encouraged Tom to think aloud and Mark to build on his ideas.

The teacher was aware that Tom was used to following his own line of thinking in mathematical investigations. By thinking aloud in this activity, he offered his ideas to the group and was able to build on their ideas of fairness and feasibility. The teacher was also aware that Mark found it difficult to make positive, helpful contributions to group discussions. In this investigation he demonstrated how he had learned to wait for appropriate moments to make contributions, building on and valuing the ideas of others and summing up the group's thinking.

This case study represents a refinement of some of the practice captured in the previous case studies with teachers and pupils being able to build on the groundwork they have done to achieve more sensitive approaches to turn-taking and deeper forms of collaboration. This reflects the big picture's recognition of the importance of proactive and independent learning, along with the risk-taking attitudes highlighted in some of the earlier cases.

Case study 5: Deepening and refining students' discussions (KS3 mathematics)

This case study focused on three mathematics teachers in an 11-18 secondary school in Gloucestershire. Group work was already well established in their mathematics lessons. Like the previous case study, the teachers set out to refine and improve their students' mathematical conversations in terms of deepening their thinking and enhancing the quality of their talk. They aimed to achieve this through asking the students to:

- explain their thinking
- convince their partner, and
- ask their partner to convince them.

The teachers also modelled particular phrases that would facilitate good conversations during whole class interactive sessions:

- Convince me …
- How would you convince another student that …
- Explain why you think that …

The teachers decided the groups the students would work in and provided ready made materials which the students could use to support their arguments, such as 'convincing shapes' – shapes ready cut out that the students could fold to help with their explanations and glue to their posters. As part of the group work activity, the students were expected to make posters which showed their explanations.

During these lessons, many students were observed using the same language their teachers had used. The approach was effective for students throughout the ability range. The following examples from a top set Year 8 class capture the depth of their conversations:

- "So from that one to that one it's a reflection"
- "Don't turn it around. It's in the y-axis"
- "But that's not the opposite".

These next examples were from a bottom set Year 7 class:

- "What do we do with these anyway?" (a student asked of her partner, when trying to engage with the task at the start of the activity)
- "It's a right angle here" (student pointing to a corner)
- "This goes here" (student folded shape to demonstrate line of symmetry)
- "Just count the corners" (Student to partner who was trying to find number of lines of symmetry in a hexagon)
- "coz when you twist it, it fits two times, look" (Student demonstrates by turning the object).

Many of the weaker students were also observed making convincing arguments and communicating effectively not so much with words, but by showing and pointing.

A point particularly worthy of attention was that during one of the lessons, one group convinced each other incorrectly. This suggested the importance of having a plenary where "answers" can be given and misconceptions can be addressed.

When asked why they had felt the need to develop their students' dialogue during group work, when the students were already working well together, one of the teachers (the head of the mathematics department) commented that reading articles on the Internet and in professional magazines had made him more conscious of the way the students talked and made him want to get the students to talk more deeply. The teachers worked together to share ideas for improving the students' conversations then refined their approaches through peer observation. As a result, they now plan lessons that offer opportunities to talk at a deep level – planning not only the activity, but how the students are to talk about the activity and what resources etc they could provide to help.

> I think one of the main things we have all learned is that students don't naturally know how to talk with each other. We have to tell them how to do it. Even weaker children can do that, if you show them how.

The teachers always ensured that the activity involved writing explanations, providing writing frames, tables and other creative ideas (such as the 'convincing shapes' in the lesson described) for those who were likely to find this difficult. They saw it as important to model good practice. They frequently found themselves conscious in all their other lessons of asking students to explain an answer or convince another person in the class and would ask another person in the class if they were convinced. They were also careful to point out and praise good conversations when they occurred.

Like the previous case study, the practice captured here demonstrates how teachers have built on and refined good practice in dialogue and group work to take it further. This links to the curriculum big picture's emphasis on developing successful learners who are both challenged and supported and encouraged to take responsibility for their learning.

3. What did the teachers do to promote the effective use of group work and dialogue?

Get pupils to talk and work together

The first challenge was getting students to work and talk effectively in groups and build the kinds of learning skills and attitudes identified in the curriculum big picture. Case study 1 illustrated the importance of the teacher's role in prompting and supporting students in their use of language and in modelling productive and exploratory talk, especially when working with students with speaking and listening difficulties. Taken together, the case studies suggested that speaking and listening needed to be used regularly and embedded in all subjects so that students felt confident about speaking in front of others and commenting on what they had heard as well as understand the importance of listening and taking turns. Similarly, students needed to be given regular opportunities to work collaboratively on a range of activities in different subject areas to build their collaborative skills. This may be easier to achieve in a primary setting, where a pupil will typically have one or two teachers delivering a range of subjects, than in a secondary school.

Create and maintain effective groups

The case studies also highlighted the importance of spending time creating and maintaining, effective groups. Some common sense findings from the wider interactions that were exchanged in these case studies included keeping groups small enough to allow all members opportunities to speak and enjoy learning, as well as ensuring a mix of personalities so that individuals did not dominate. Establishing and displaying ground rules for talk and group work in the classroom were also effective. It was important that teachers modelled good dialogue too. The teacher's professional judgement was key for deciding on which students should work together. The teacher depicted in case study 1 for example, used a combination of data and professional nous to determine the groupings in which the students worked in order to try to maximise the independence with which they could operate. She also used data on the students' performance and from Individual Education Plans, as well as her knowledge of their social groupings, to allocate them: '*I was quite creative in my grouping to get the best out of them*'. However, she was also happy to allow one student who had behavioural issues to work independently and he was still able to contribute to the plenary discussion at the end of the lesson.

In all the case studies, teachers were concerned with doing the groundwork in terms of maintaining effective group work and dialogue which would enable their students to progress in their use of talk as they moved through the school and beyond. Transferring the ownership of learning to the students was part of this process, so that the teacher increasingly moved into a more facilitative role.

Take on more facilitative and less directive roles

The case studies gave practical examples of ways in which the teachers had been able to create a more facilitative supportive classroom environment in which talk was encouraged. These included teaching explicit rules for group work and dialogue, creating speaking, listening and ideas frames to support classroom interaction which encouraged students to engage in and assess dialogue and take ownership of their learning. However, other teachers in some of the

case study schools, notably at Key Stage 4, felt that they were being pulled in two directions. On one hand, they found the increased maturity of the students who were more experienced in using talk enabled the students to work more proactively and effectively, particularly in optional subjects. On the other hand, they felt that the pressure to deliver results at GCSE left less space for them to take risks and forced them to revert to a more directive approach.

It should also be noted that the schools and teachers involved in this probe had access to a range of internal and external support in their promotion of group work and dialogue. This ranged from senior management support (case study 2) and peer support from their colleagues (case studies 3 and 5) to local authority projects (case studies 1 and 4) and input from academic experts (case studies 1 and 3). These kinds of support enabled teachers to create and preserve the kinds of space for taking risks and building students' confidence that some teachers felt were restricted by the pressure to maintain or raise attainment levels.

Develop a clear rationale for linking group work, dialogue and curriculum development

It was apparent that some of the case study schools had developed a clear rationale that linked increased attention to the effective use of group work and dialogue with curriculum developments, such as the introduction of a creative curriculum or a vertical curriculum. These schools had created ways of integrating the curriculum and effective approaches to dialogue. But this wasn't universal. For example, one teacher interviewed felt that her experience of the secondary curriculum, and in particular the pedagogies often used to deliver it, militated against the promotion of group work and dialogue:

> *From the Foundation years right the way through to Year 7 the students are taught at a table, they're taught personalised learning, they have different tasks. And then all of a sudden they come into high school, they then sit in rows and they're delivered [at] from the front with one hat fits all and then they expect to see massive attainment and change. Well I question that because it's something the students aren't used to.*

This was related to her emphasis on the importance of engaging the learner, especially lower ability learners who are often rendered passive and uninvolved by what she regarded as traditional teaching approaches. She felt that integrating and building on, rather than discarding, the approaches used in Key Stages 1 and 2, including greater emphasis on group work and dialogue, would engage students more effectively in their learning and build on the successful learning skills they had developed in primary school.

4. Methodology

The case studies were approached at a number of levels:
- live probes
- initiated and managed experimental work
- retrospective interview, and
- a case study selected from recent published work.

The first two case study schools were visited in July 2008 to observe teacher's practice in six lessons and explore the beliefs which underpinned teachers' approaches through a series of reflective interviews. All lessons were recorded using digital recorders to capture a range of classroom dialogue and subsequent interviews with the six teachers used a stimulated recall

approach to help the teachers to articulate the rationales and principles which underpinned their practice.

The third case study was the outcome of experimental work initiated and managed by CUREE. At the request of the teachers, CUREE provided a research activity designed to help them improve their pupils' speaking and listening skills during group work, as this was an area of concern within the school. The research activity was based on research by Wegerif *et al* (2004) which showed how teachers can improve children's access to education through teaching them how to interact and reason with each other It emphasised the importance of negotiating ground rules and of the teacher modelling the ground rules when talking with members of the class. Later, CUREE provided the teachers with support for writing up their enquiry.

Case study 4 was selected from a range of published teacher research because it gave a clear account of why the teacher had decided to put certain pupils together in a group, as well as how she had supported them – providing an alternative approach to grouping pupils than identified in the other case studies. Case study 5 arose through an interview with one of the teachers concerned after they had written up an enquiry into enhancing the quality of talk during group they had recently carried out.

The data used in developing the case studies comprised observations of lessons and general school activities; field notes; textual analysis of documentation relating to the curriculum; and interviews with headteachers and teachers. Teachers' names have been changed to preserve their anonymity.

Conclusion

The case studies included in this probe report offer a series of pictures of the ways in which teachers are structuring the use of group work and dialogue to develop the curriculum and meet the curriculum aims captured in the QCA's big picture of the curriculum. Viewed as a continuum of practice, from initiating group work and dialogue to maintaining and refining their use in learning, they suggest that in some cases teachers have used group work and dialogue to manage the curriculum more effectively and develop and hone the independent learning, enquiry and thinking skills that the big picture highlights.

However, the case studies also demonstrate that teachers face a number of challenges and pressures. The first two cases in particular underline the difficulty of developing group work and dialogue in contexts in which students' speaking and listening skills are poor. In such contexts, focusing on group work and dialogue may be high risk and ambitious, but the teachers concerned believed strongly that it could make a difference for their pupils in contrast with other, more directive approaches to learning and teaching, which they believed would not be effective. The other cases also reveal many variations in both input and output in promoting group work and dialogue, but some themes emerge, such as:
- the need to scaffold tasks to facilitate speaking and listening
- the importance of teachers modelling effective talk, and
- the need for specialist support (which took a range of forms from expert support to working with colleagues and consulting published research).

It seems clear, in particular, that students have to be taught ground rules for speaking and listening if its full potential is to be harnessed to the curriculum. Teachers, especially in challenging contexts, cannot assume that students will have picked them up elsewhere. The evidence from these case studies suggests that developing and continually refining students' group work and dialogue skills is one of the ways in which they can build the skills and attributes to become the successful learners, confident individuals and responsible citizens identified by the curriculum aims on the QCA's big picture.

References

Barnes, D. & Todd, F., (1977) *Communication and Learning in Small Groups*. London: Routledge and Kegan Paul

Barnes, D. & Todd, F., (1995) *Communication and Learning Revisited*. Portsmouth, NH: Heinemann

Bennett, J., Lubben, F., Hogarth, S., Campbell, B., & Robinson, A., (2005) *A systematic review of the nature of small-group discussions aimed at improving students' understanding of evidence in science* In: Research Evidence in Education Library. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London
http://eppi.ioe.ac.uk/cms/Default.aspx?tabid=326

Dawes, L (2008) *The Essential Speaking and Listening: Talk for Learning at Key Stage 2.* London: Routledge

Hogarth, S., Bennett, J., Campbell, B., Lubben, F., & Robinson, A., (2005)
A systematic review of the use of small-group discussions in science teaching with students aged 11-18 In: Research Evidence in Education Library. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London
http://eppi.ioe.ac.uk/cms/Default.aspx?tabid=324

Gillies, R.M. & Boyle, M (2005) Teachers' scaffolding behaviours during co-operative learning Asia-Pacific *Journal of Teacher Education* 33 (3) pp.243-259

Kearney, M. (2004) Classroom use of multimedia-supported Predict-Observe-Explain tasks in a social constructivist learning environment. *Research in Science Education* 34 pp. 427-453

Mercer, N., Dawes, L., Wegerif, R. & Sams, C. (2004) Reasoning as a scientist: ways of helping children to use language to learn science. *British Educational research Journal 30 (3) pp.359-377*

Mercer, N. & Sams, C. (2006) Teaching children how to use language to solve maths problems. *Language and Education 20 (6) pp. 507-528*

Mercer, N. & Littleton, K. (2007) *Dialogue and the Development of Children's Thinking. A sociocultural approach* (London: Routledge)

Mercer, N., Wegerif, R. and Dawes, L. (1999) Children's Talk and the Development of Reasoning in the Classroom *British Educational Research Journal* 25, 1*, pp.* 95-111

Payne, F., Gooday, M., Coutts, N., Duncan, A., & Wolfe, A. (2006) An evaluation of the use of videoconferencing in the Global Learning and International Classroom Project. *Paper presented at the British Educational Research Association Annual Conference, University of Warwick, 6-9 September 2006* www.leeds.ac.uk/educol/documents/163965.doc

Swan, M. (2006) Learning GCSE mathematics through discussion: what are the effects on students? *Journal of Further and Higher Education,* Volume 30, Issue 3 August 2006, pp. 229 – 241

Wegerif, R., Littleton, K., Dawes, L., Mercer, N. and Rowe, D. (2004) Widening access to educational opportunities through teaching children how to reason together. *Westminster Studies in Education 27 (2)* pp.143-156