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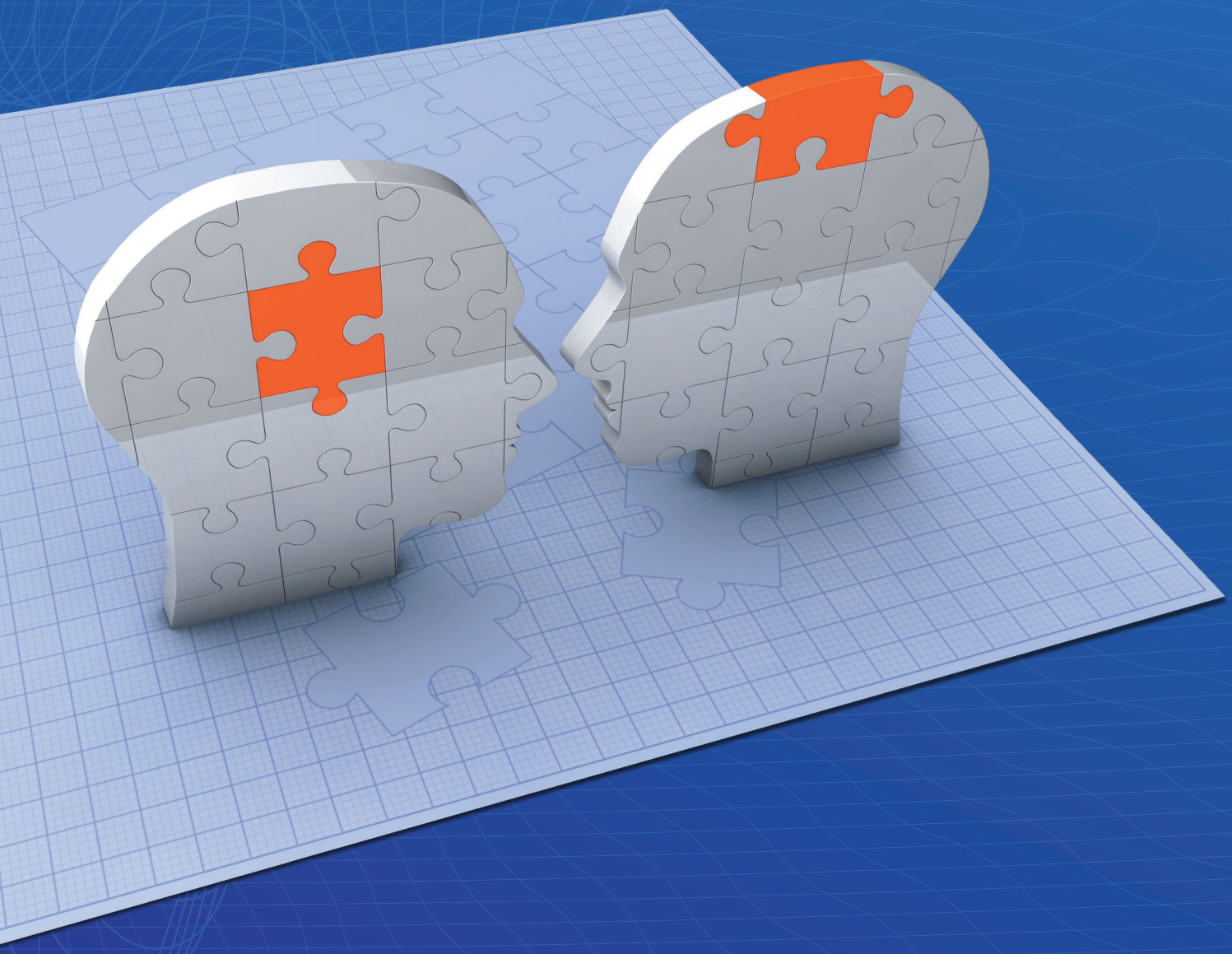
Thinking Together in the Primary Classroom



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WHAT IS THE BACKGROUND TO THE RESEARCH?

Research on group-work in class has revealed an interesting paradox. On the one hand, collaborative activity has been found to be a powerful aid to learning, in all subjects including mathematics and science, and for the development of 'transferable' reasoning and communication skills. On the other hand, in most classrooms, most of the time, group work has been shown to be quite unproductive, even a waste of time. The solution to this paradox is that many children, perhaps most, need to be taught how to talk and work together, but are rarely offered that guidance. Just giving them opportunities to collaborate is not enough. The *Thinking Together* research has shown that when students are helped to understand how to use talk as a problem-solving and learning tool, the quality of their talk and group work improves and so do their *individual* learning outcomes.

Detailed analysis of children's joint sessions of work in classroom settings suggest that most of the interactions observed are not task-focused, productive or equitable. In some pairs or groups

one child so completely dominates the discussion that the other group members either withdraw from the activity, becoming increasingly quiet and subdued, or else they participate marginally, for example, as the passive scribe of a dominant child's ideas. In other groups the children seem to ignore each other, taking turns, each pursuing their own particular ideas when 'their turn' comes round. Some groups' talk involves them in unproductive, often highly competitive, disagreements. From time to time these disagreements escalate, with the children becoming increasingly

irritated with each other and engaging in vehement personal criticism. On the other hand, much group talk is relatively brief, somewhat cursory and bland. Particularly when groups of friends work together, the discussions are often uncritical, involving only superficial consideration and acceptance of each other's ideas. Such observations suggest that although grouping children is a common organisational strategy, talk of educational value is rarely to be heard. That said, very occasionally there is evidence of a distinctive kind of interaction that is qualitatively different and more educationally productive. Here the children engage in discussions in which they share relevant ideas and helped each other to understand problems. They are mutually supportive and are constructively critical of each others' ideas, with challenges and counterchallenges being justified and alternative ideas and hypotheses being offered. Based on these observations the following three part typology captures extent to talk partners use language to think together when pursuing joint problem-solving and other learning activities:

- *Disputational Talk,* which is characterized by disagreement and individualized decision making. There are few attempts to pool resources, to offer constructive criticism or make suggestions. Disputational talk also has some characteristic discourse features – short exchanges consisting of assertions and challenges or counter assertions ('Yes, it is.' 'No it's not!').

- *Cumulative Talk,* in which speakers build positively but uncritically on what the others have said. Partners use talk to construct 'common knowledge' by accumulation. Cumulative discourse is characterized by repetitions, confirmations and elaborations.

- *Exploratory Talk,* in which partners 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. Partners all actively participate, and opinions are sought and considered before decisions are jointly made. Compared with the other two types, in Exploratory Talk knowledge is made more publicly accountable and reasoning is more visible in the talk.

This typology is not only meant to be descriptive: it has an evaluative dimension, reflecting a concern with educational effectiveness. Talk of a mainly 'disputational' type, for

example, is very rarely associated with processes of joint reasoning and knowledge construction. Whilst there may be a lot of interaction between children, the reasoning involved is mainly individualized and tacit. Furthermore, the kind of communicative relationship developed through disputation is defensive and overtly competitive, with information and ideas being flaunted or withheld rather than shared. It was common for this type of talk to comprize tit-for-tat 'yes it is', 'no it isn't' patterns of assertion and counter-assertion. Disputational argument of this kind has little in common with the kind of reasoned argument that is represented by Exploratory Talk. Children engaged in a disputational type of talk are not, however, orientated to the pursuit of reasoned argument, they are being 'argumentative' in the negative sense of squabbling and bickering.

In contrast to Disputational Talk, Cumulative Talk characterizes dialogue in which ideas and information are shared and joint decisions are made: but there is little in the way of challenge or the constructive conflict of ideas in the process of constructing knowledge. Cumulative Talk represents talk which seems to operate more on implicit concerns with solidarity and trust, hence the recourse to a constant repetition and confirmation of partners' ideas and proposals.

Exploratory Talk represents a joint, co-ordinated form of co-reasoning in language, with speakers sharing knowledge, challenging ideas, evaluating evidence and considering options in a reasoned and equitable way. The children present their ideas as clearly and as explicitly as necessary for them to become shared and jointly analysed and evaluated. Possible explanations are compared and joint decisions reached. By incorporating both constructive conflict and the open sharing of ideas, Exploratory Talk constitutes the more visible pursuit of rational consensus through conversation. Exploratory Talk foregrounds reasoning. Its ground rules require that the views of all participants are sought and considered, that proposals are explicitly stated and evaluated, and that explicit agreement precedes decisions and actions. It is aimed at the achievement

of consensus. Exploratory Talk, by incorporating both conflicting perspectives and the open sharing of ideas, represents the more visible pursuit of rational consensus through conversations. It is a speech situation in which everyone is free to express

their views and in which the most reasonable views gain acceptance. Given this, in recent years we have, together with colleagues, undertaken a series of classroom-based research projects explicitly designed to foster the use of Exploratory Talk in classrooms and thereby improve the educational quality of children's collaborative activity and talk.

WHAT WERE THE OUTCOMES OR IMPACTS?

Children aged between 6 and 13 years have been involved, but we will here concentrate on the research with the age group 8-11, which has been the most substantial. This was pursued by designing a programme of planned intervention focused on the use of talk which integrated teacher-led whole class dialogue and group activity. Its main aim was to ensure that children would enter collaborative activities with a shared conception of how they could talk and think together effectively.

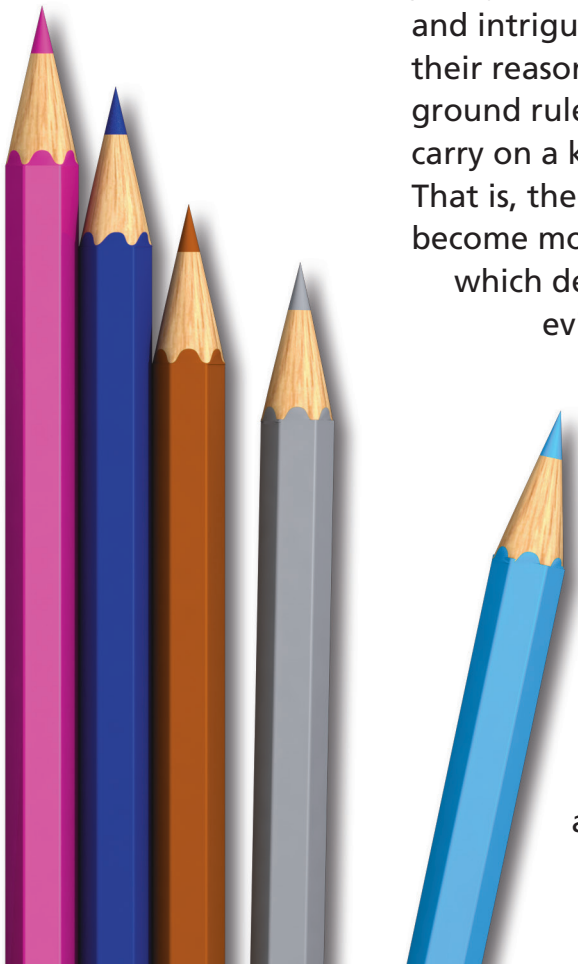
This research has produced three main findings.

First, a qualitative and quantitative analysis of the children's talk showed that children in intervention classes came to use significantly more Exploratory Talk than those in control classes.

Secondly, by examining the recorded talk of the groups in conjunction with their scores on a non-verbal reasoning test, we found that groups who used more Exploratory Talk tended to

solve the problems more successfully. Thus when we compared groups in the intervention classes who had failed on specific problems in the pre-lessons test with their successes in the post-lessons test, we could see how the 'visible reasoning' of exploratory talk in the transcripts had enabled them to do so.

The third main finding was that the before-and-after comparisons of children's collective performance on the non-verbal reasoning test confirmed that the *Thinking Together* lessons were changing the quality of children's joint reasoning. But the results also showed that the children participating in the intervention (target children) improved their *individual* scores much more than the children in control classes. It seemed, therefore, that the target children had not only learned more effective strategies for using language to think collectively (and so become better at collaborative working), but also as a result of taking part in the group experience of explicit, rational, collaborative problem-solving had improved their *individual* reasoning capabilities. (It should be noted that the target children had no more or less experience or training in doing the non-verbal reasoning test, together or alone, than the control children.). However, it is not clear what the target children learned from their experience that made the difference. It may be that some gained from having new, successful problem-solving strategies explained to them by their partners, while others may have benefited from having to justify and make explicit their own reasons. But a more radical and intriguing possibility is that children may have improved their reasoning skills by internalising or appropriating the ground rules of exploratory talk, so that they become able to carry on a kind of silent rational dialogue with themselves. That is, the Thinking Together lessons may have helped them become more able to generate the kind of rational thinking which depends on the explicit, dispassionate consideration of evidence and competing options.



WHAT WAS THE INTERVENTION/TEACHING AND LEARNING PROCESS?

The intervention programme consisted of a set of twelve *Thinking Together* lessons created by researchers working with teachers (as included in Dawes, Mercer and Wegerif 2000; Dawes and Sams 2004; Dawes 2008). The programme was then, in collaboration with teachers, implemented with children aged 8-11 years in primary schools, and evaluated using a quasi-experimental method

in which children in the experimental or 'target' schools (those who followed the programme) were matched with children of the same age in other local 'control' schools with similar catchments (who pursued their normal curriculum activities). This method permitted a systematic evaluation of the programme while ensuring that the normal contextual factors of school life were still in play.

At the start of the intervention, each participating teacher received a basic training in the *Thinking Together* approach and was introduced to the *Thinking Together* lessons. The first five core lessons provided teachers with activities for collectively negotiating and establishing with their classes a set of 'ground rules' which embody the essential qualities of Exploratory Talk (in which alternative solutions to problems are generated and allowed to develop and compete as ideas without threatening either group solidarity or individual identity). That is, these lessons were mainly aimed to develop children's understanding and use of Exploratory Talk. The complete programme included lessons which related to specific curriculum subjects and consists of both teacher-led sessions and group activities (some of which use specially designed computer based tasks based on curriculum topics).

HOW WAS THE RESEARCH CARRIED OUT?

In order to evaluate changes in the quality of children's talk, we video-recorded groups of children carrying out activities. This was done in both the target classes and in the control classes.

The research was designed to test the effects that the intervention had on children's ways of talking, on their curriculum learning and on their individual reasoning skills. To assess effects on reasoning, the *Raven's Progressive Matrices* was used. This is a test which has been commonly used as a general measure of non-verbal reasoning. Both target and control sets of children were given this test before the target classes began the experimental programme, and then again after the series of lessons had been completed.

Using two sets of the Raven's test items, we were able to assess the children's thinking both collectively (as they did the test in groups) and individually (when they did the other version of the test alone).

WHAT MIGHT THE IMPLICATIONS OF THE RESEARCH BE FOR POLICY MAKERS/ PRACTITIONERS

Our research highlights the importance of teachers providing guidance for children's collaborative activity, and doing so in three main ways:

- Taking an active role in guiding their pupils' use of language and modelling ways it can be used for thinking collectively.

  Teachers could, for example, ask children to give reasons to support their views, engage them in extended discussions of topics, and encourage them to see that responding need not simply mean providing the 'right' answer. The aim should be to create, to an extent which would be unusual in most classrooms today, more of the kinds of interactions which are indicative of 'dialogic' teaching.

- Establishing an appropriate set of ground rules for talk in class.

  This can build on children's own raised awareness of how language can be used so that the children treat the ground as their own. These rules can then become part of the common knowledge of the class, to be invoked in all relevant activity.

- Ensuring that curriculum-related group activities are well designed to elicit debate and joint reasoning.

  Not all joint activities require much reasoning: only those that do will provide the kind of impetus that is required for learning and development. The best activities will stretch the joint intellectual resources of a group to the extent of their pooled knowledge and understanding, but be ultimately achievable.

Thinking Together in the Primary Classroom

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Key Publications

Dawes, L. (2010). *Creating a Speaking and Listening Classroom.* London: Routledge.

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