

QUEENSLAND COLLEGE OF TEACHERS RESEARCH DIGEST

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The Queensland College of Teachers has commissioned the Australian Council for Educational Research to prepare this series of electronic research digests.

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The Research Digests

This Research Digest is one of a series of periodic digests produced by the Australian Council for Educational Research (ACER) for the Queensland College of Teachers.

Each digest focuses on a single topical issue, and provides a review of major messages from research on the issue. A key feature of the digests is an emphasis on what the research means for teachers and teaching. Over the course of several editions, a wide range of issues will be covered, so that teachers from different areas of schooling will find topics of relevance to their needs and interests.

Previous Issues

- 1 (Oct 2007) *Writing to learn*
- 2 (Apr 2008) *Managing student behaviour in the classroom*
- 3 (Oct 2008) *Using Data to Improve Learning*
- 4 (Apr 2009) *The use of ICT in schools in the digital age: what does the research say?*

Research Digest

Number 5

Talking to learn: Dialogue in the classroom

This Digest is focused on research studies about using classroom talk for improving learning, and particularly on the use of teaching methods incorporating classroom dialogue. A selection of websites is listed and a full reference list provided. Links to those references for which full-text online access is freely available are also included.

Classrooms are full of talk: some commentators have even suggested that schools are 'saturated' with it. There are different types of classroom talk for a range of different purposes. An international research study conducted in primary classrooms in five countries (the 'Five Nations Study') has demonstrated the powerful learning effects of skilfully used 'dialogic teaching'. This approach has been defined as classroom teaching where teachers and children both make substantial and significant contributions through which children's thinking on particular ideas and/or themes is moved forward (Mercer & Littleton, 2007).

Another description of dialogic teaching identifies a number of aspects:

... collective, supportive and genuinely reciprocal; it uses carefully-structured extended exchanges to build understanding through cumulation; and throughout, children's own words, ideas, speculations and arguments feature much more prominently (Alexander, 2005).



Talking to learn: Dialogue in the classroom

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What does classroom dialogue look like in action?

The following extract comes from an extended classroom dialogue amongst a group of children aged 6-7 in an American elementary school class who are attempting to identify Corduroy the bear's missing button from an array of buttons each group has before them (Alexander, 2000).

- T Now we have to help find Corduroy's button. I am going to give you some clues which will help Corduroy find a button [...] Listen carefully to the clues. After I give each clue talk about what you are going to do first in your group. [...] Then after you have agreed, then you may go ahead and do what you have agreed to do. Now listen to the clue. Here's clue number one. Corduroy's button is not yellow. [...]
- C (to her group) Take off, take the yellows off.' [pupils in group do so then raise their hands to notify that they are ready] [...]
- T Okay, I like the way this group has raised their hands. Okay, E., what did your group decide?
- E We decided to take the yellow shapes out.
- T That's a group decision?
- E Yeah, we all ...
- T To class [...] Do we all agree?
- PP Yeah! [...]
- T Clue number two. Corduroy's button is not a triangle. What should you do? Talk about what you are going to do.
- C (to her group) Take off all the triangles!
- T F, what did your group decide?
- F Take all the triangles off.
- T Did every group decide that?
- PP Yeah! [...]
- H corduroy's button is square, four holes, large and red.
- T Good. So we have found out that Corduroy's button has four things, four things that we know about. What are those things called? It's a big word, those things about Corduroy's button. [...]
- T Attri-
- PP Attri-
- T Attributes?
- PP Oh! Attributes!
- T Attributes. SO the four attributes of Corduroy's button are [...]
- A You forgot the sides!
- T I said the size is ...
- A Four!
- T Oh, OK! It has four sides!

Scaffolded dialogue, or dialogic teaching, is very different from practices commonly seen in many classrooms where teachers construct question and answer sessions during which they ask questions, frequently closed questions, and students bid competitively for the opportunity to give generally brief answers. In contrast, dialogic teaching is characterised by comparatively lengthy interactions between a teacher and a student or group of students in a context of collaboration and mutual support. These interactions can occur in the context of whole class, group or one on one learning activities and are designed to help the child to build understanding, explore ideas and practise thinking through and expressing concepts. During these interactions teachers deliberately model and explicitly teach strategies for reasoning, enquiry and negotiation, among others.

dialogic teaching is characterised by comparatively lengthy interactions between a teacher and a student or group of students in a context of collaboration and mutual support

The key question addressed by this Digest is 'What does research tell us about the effective use of classroom dialogue for improving learning?'

The Digest draws on searches of a number of databases and bibliographic resources, including the Australian Education Index, Education Resources Information Centre (ERIC), Education Research Complete, British Education Index and Scopus. ■

Classroom talk:

In the English-speaking world, interest in the role of talk in classroom teaching and learning extends back to the 1960s (Wilkinson, 1971).

As Smith (2001) notes:

Language is not merely a tool for describing what one already knows. It is a pervasive process through which we learn about our world and develop our creative and problem solving skills.

A similar observation also draws attention to the role of talk in developing relational and emotional skills, as well as those necessary for creativity and problem-solving:

Human intelligence is primarily developed through speaking and listening. The quality of our lives depends on the quality of our thinking and on our ability to communicate and discuss what we think with others. Talk is intrinsic to literacy and to our ability to form relationships with others. It is the foundation of both verbal and emotional intelligence (Fisher, 2007).

Since Wilkinson's time a considerable body of research and writing on classroom communication and interaction and talk for learning has developed. Research conducted in Australia includes the Classroom Discourse Project (Cormack, Wignell, Nichols, Bills & Lucas, 1998), a national study which sought to describe classroom practices that enhance speaking and listening skills across different subject areas. The project results showcased students' ability to use talk for learning and to demonstrate what they had learned. Importantly, the results also showed that teachers can be highly influential in shaping classroom talk so that it aids student learning.

The spoken language and literacy pedagogy showed that by setting the topic and intended directions for talk and keeping talk going in the intended direction, the teacher enabled key literacy outcomes to be achieved. Control by the teacher of talk, topic and direction had a positive effect on students' learning. ...

Effective talk for learning did not just happen. The collaborative research strand showed that the clarity of task setting (e.g., that the students knew what kinds of talk were required) and appropriate selection of topic (e.g., so that it had relevance to students and they had knowledge to bring to the task) had an impact on students' learning.

(Cormack et al., 1998)



teachers can be highly influential in shaping classroom talk so that it aids student learning

Recently, a large study was conducted in five countries – England, the USA, Russia, France and India (Alexander, 2000). This study compared classroom practice in primary schools, with a special focus on classroom talk. The findings have a good deal in common with those of the Australian study above. They also suggest that, while there were many similarities across the different national contexts, French and Russian teachers made considerably more use of dialogic methods, which were associated with benefits for students' learning outcomes, social development and classroom behaviour. ■

Vygotsky's work

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Early work on the vital role of language in development was conducted by the Russian education theorist, Vygotsky

For Vygotsky, language is the medium by which children acquire more than information (Vygotsky, 1962). By participating in guided interactions with more experienced members children also acquire the 'mental tools' of their culture. He observed that tools begin as social products but become the property of individuals by the process of internalisation. In the most conspicuous and significant example, language becomes thought.

There has been a great deal of recent interest in the biological bases of the human mind, particularly in brain-based learning. Vygotsky and those influenced by his work have shown that the human mind is also a cultural product: without the experience of growing up in a human culture, having a human brain will not result in a child reaching his or her potential. Difficulties experienced by children raised in extreme isolation from other people are examples of the necessity for social interaction for successful development.

Interactions with more experienced others are vital for children's acquisition of the key mental tools of their culture. Working with an adult or more accomplished peer allows the child to internalise knowledge, ways of thinking and ways of doing. Guided participation in both learning activities and conversation about these activities helps the child not just to acquire information but to learn how to use this information, to transform it and make it a part of his or her own mental tool kit.

'Scaffolding' is a widely used term to describe the process of supporting learning by a teacher, coach or more experienced peer. The teacher or coach builds a framework to guide the student's own construction of the ideas, skills, concepts and/or processes being learned. Dialogue can be a key part of this process of 'handing over' knowledge and skills. As Game and Metcalfe note: *Dialogue allows participants to have thoughts they could not have had on their own, yet to recognise these thoughts as developments of their own thinking* (2009). ■





The transformation of shared language into private thought begins in infancy and children pass through a number of stages as they transform public talk to internal thought.

The use of 'private speech' is the key characteristic in one of these stages. Laura Berk (2006) observes:

As any parent, teacher, sitter or casual observer will notice, young children talk to themselves— sometimes as much or even more than they talk to other people. Depending on the situation, this private speech (as modern psychologists call the behaviour) can account for 20 to 60 percent of the remarks a child younger than 10 years makes. Many parents and educators misinterpret this chatter as a sign of disobedience, inattentiveness or even mental instability. In fact, private speech is an essential part of cognitive development for all children. Recognition of this fact should strongly influence how both normal children and children who have trouble learning are taught.

Berk's research has confirmed Vygotsky's theory that inner speech is one step in the process by which the social tool, language, becomes the private tool, thought. Young children listen to those around them and begin to 'parrot' the observations, instructions and explanations they hear as they take control of their own actions. 'Thinking aloud' is replaced by 'internal speech' and this in turn becomes the automatic internal dialogue we all recognise as 'thinking'. By this method children learn their culture's beliefs and values about knowledge, learning, how the human mind works and how to solve problems, as a few examples. The process certainly does not end in preschool, however, and children – and adults – continue to internalise the speech they hear as they move through school, acquiring knowledge and new ways of thinking, reasoning and interacting as they go. ■

Talk is one of the main media for instruction in schools. A key reason for this is that much of what we intend children to learn is knowledge of an abstract type that lends itself to 'telling' rather than 'showing'. There are other significant reasons why talk is and should be so fundamental to education. As Robin Alexander has noted, the evidence for the importance of talk for learning comes from five areas of research (2006a) and these have significant implications for classroom practice.

- ▶ **Neuroscientific:** recent brain research indicates that during the early years of life talk performs the vital function of physically helping to shape the brain and expand its power, building cells, making new connections, developing the capacity for learning, memory, emotional response and language itself, all on a scale which decreases markedly as the child approaches adulthood.
- ▶ **Psychological:** language and thought are intimately related, and the extent and manner of children's cognitive development depend to a considerable degree on the forms and contexts of language which they encounter and use. Childhood learning is necessarily a social and interactive process: children construct meaning from the interplay of what they newly encounter and what they already know, and talk provides the most effective bridge or 'scaffold' between the two.
- ▶ **Social and cultural:** humans exist and function by relating to others, and talk provides the most universal means whereby relationships are established and sustained, solidarity is developed and confidence is built. It is by relating to others that children gain their sense of who they are and – no less important – who they might become; and thereby of the array of identities and world-views which go to make up their culture.
- ▶ **Political:** the interactive skills which are necessary for learning – listening, asking and answering questions, presenting and evaluating ideas, arguing and justifying points of view – are also essential to the effective functioning of democratic societies. Democracies decline and autocracies flourish when their citizens listen rather than talk, and when they comply rather than debate.
- ▶ **Communicative:** talk is humankind's principal means of communication, even – or especially – in a culture in which people are becoming more familiar with computer screens than the printed page. The skills of conveying and exchanging meaning are of paramount importance in every

aspect of life, from the privacy of domestic relationships to the more formal and public transactions of education and employment.

Talk is one of the main media for instruction in schools

Research into talk in classrooms has demonstrated that, even though students' talk serves vital developmental and learning functions, frequently teachers do most of the talking and children do not often have the opportunity to officially engage in talk that extends for more than a few seconds. For example, research conducted by Smith, Hardman, Wall and Mroz (2004) found that in the typical classroom:

Open questions made up 10% of the questioning exchanges and 15% of the sample did not ask any such questions. Probing by the teacher, where the teacher stayed with the same child to ask further questions to encourage sustained and extended dialogue, occurred in just over 11% of the questioning exchanges. Uptake questions occurred in only 4% of the teaching exchanges and 43% of the teachers did not use any such moves. Only rarely were teachers' questions used to assist pupils to more complete or elaborated ideas. Most of the pupils' exchanges were very short, with answers lasting on average 5 seconds, and were limited to three words or fewer for 70% of the time. ■

The Five Nations study

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Classroom talk has been studied by Robin Alexander and his colleagues in the Five Nations Study.

The ways of organising classroom interaction and the different styles of talk they encountered in primary classrooms in England, the USA, Russia, France and India had much in common. However the balance between organisational principles, learning strategies and types of talk varied between the countries.

Across the countries studied five broad ways of interacting were observed:

- ▶ whole class teaching: the teacher and the class relate to each other as a whole;
- ▶ collective group work: group work led by the teacher;
- ▶ collaborative group work: the teacher sets a task for the group to work on but does not participate;
- ▶ one-to-one teaching: teacher works with individual children;
- ▶ one-to-one activity between pairs of students (Alexander, 2005).

Common strategies for fostering children's learning through classroom talk were:

- ▶ **rote:** the drilling of facts, ideas and routines by repetition;
- ▶ **recitation:** the accumulation of knowledge and understanding through questions designed to test or stimulate recall;
- ▶ **instruction/exposition:** imparting information, explaining facts, principles and procedures, issuing instructions (Alexander, 2005).

Less frequently encountered were:

- ▶ **discussion:** exchange of ideas with a view to sharing information and solving problems;
- ▶ **scaffolded dialogue/dialogic teaching:** achieving common understanding through structured, cumulative questioning and discussion, which guide, prompt, reduce choices, minimize risk and error and facilitate the internalising by students of concepts and principles (Alexander, 2005).

Each of these strategies has a place in classrooms and is more effective for certain types of learning than others. Rote is an effective way to learn and practise the basic facts and skills on which higher order learning is based. Recitation provides an opportunity for students to demonstrate what has been learned and to reinforce that learning. Instruction or exposition is a means by which new knowledge, skills and procedures can be directly taught. However, none of these is a very efficient method for teaching key thinking skills.

the involvement of the teacher is a vital component of the dialogic technique

The latter two types of classroom talk – discussion and dialogue – were less commonly found during the Five Nations Study but were considerably more common in classrooms in France and Russia than in India, the USA and England. Research suggests that these two techniques can be powerful tools for developing and extending students' mental tool kit.

The purpose of increasing the amount of children's talk in class involves more than simply allowing them to express an opinion, build their confidence or improve their communication skills. The aim of using dialogue in teaching is always to move the child's thinking from his or her own conceptions towards wellformed and mature understanding of and ways of thinking and talking about issues and ideas. Alexander maintains that the evidence supports that dialogic teaching is most effective for the development of thinking skills:

The argument is amply justified by research evidence – psychological, neurological, pedagogical, linguistic – which shows that talk of a genuinely dialogic kind is indispensable to the development of thinking and understanding (Alexander, 2005).

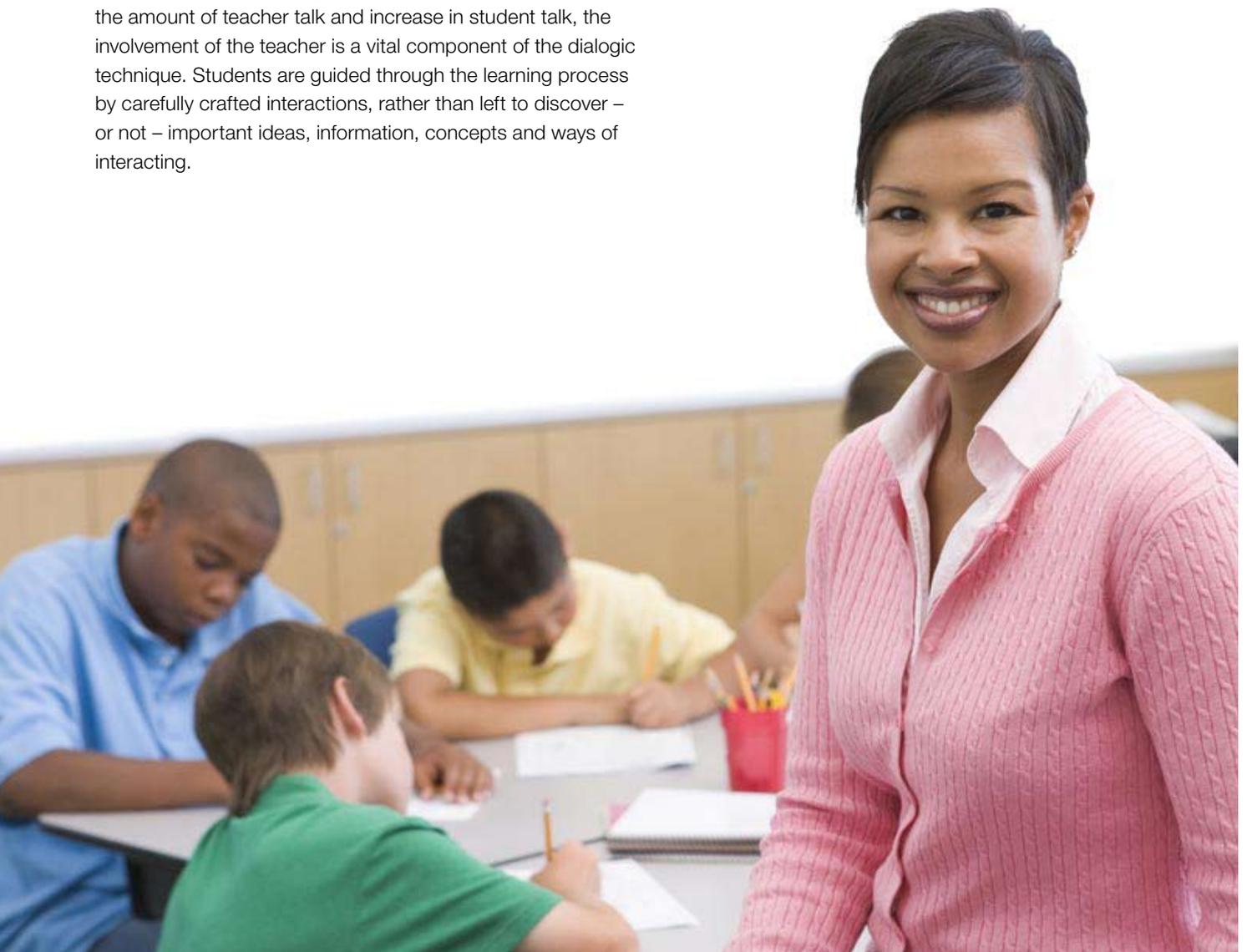
The Five Nations study

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Data from the Five Nations Study showed that teachers in whose classrooms dialogue was a noticeable feature tended to also emphasise a number of important aspects of student talk. These included expressiveness, volume and clarity; precision in vocabulary, grammar and syntax; and the development of the distinctive terminology of each subject area and of the appropriate 'register' – the spoken equivalent of writing genre. Whereas in many classrooms a more conversational or colloquial style was the norm, in classrooms where dialogic teaching was often utilised children had many opportunities to observe, learn and practise different and often more formal styles of talk.

While discussion or dialogue involves a relative decrease in the amount of teacher talk and increase in student talk, the involvement of the teacher is a vital component of the dialogic technique. Students are guided through the learning process by carefully crafted interactions, rather than left to discover – or not – important ideas, information, concepts and ways of interacting.

An important aspect of utilising discussion and dialogue is that children do not have to always be directly involved in these to benefit: watching another student participating in a dialogue with a teacher or a more knowledgeable peer has powerful positive effects on learning. This can partially be explained by hearing concepts and ideas expressed in the language of a peer but also seeing the process of discussing and understanding demonstrated helps the observer to internalise these tools and make them a part of his or her own mental tool kit. In addition, the student witnesses the giving of immediate and targeted feedback on the accuracy or appropriateness of ideas. ■



Dialogue and feedback

New Zealand researcher John Hattie (2009) has described the importance of timely targeted feedback for student learning.

Feedback that helps a student to answer the important questions of 'Where am I going?', 'How am I going?' and 'Where to next?' has powerful positive effects on student learning. Timeliness is crucial: it is important to correct misunderstandings when they happen, rather than at some time afterwards, as can occur. Participating in or witnessing dialogues or discussions and receiving immediate feedback on accuracy – or otherwise – provides students with feedback before misapprehensions have a chance to become entrenched.

Hattie has also discussed the benefits of 'making learning visible'. He has drawn attention to how these advantages are manifested in successful learning experiences that occur outside the classroom, for instance during programs of outdoor education. He observes that these programs are very effective in enhancing student learning.

Engaging in dialogue with students also provides teachers with vital feedback on the progress of learning

These experiences help problem solving skills and peer and cooperative learning, and there is an enhanced level of immediate feedback. A major reason for the success is the way the activities are structured to emphasise very challenging learning intentions, the success criteria are clear, the peer support optimised, and not only is feedback given throughout the program but it is actively sought by the participants (Hattie, 2009).

Discussion and dialogue bring some of these aspects into the classroom. Engaging in dialogue with students also provides teachers with vital feedback on the progress of learning. ■



The hidden life of the learner

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In contrast to the 'visible learning' John Hattie advocates, fellow New Zealand researcher Graham Nuthall (2007) has investigated the 'hidden life of the learner'.

Nuthall's research in primary classrooms demonstrated that even in classrooms characterised by the 'happy buzz' that apparently signals student engagement little learning may be taking place. There are a number of reasons for this. In part it is because students typically already know 40-50% of what the teacher expects them to learn from an activity. This pre-existing knowledge can influence what learning activities students select or create for themselves, which in turn determine what they learn – or relearn – from classroom activities.

What each student knows is likely to differ from what other students know – or think that they know. Interactions around these differing conceptions of the subject matter are profoundly affected by relations between students, so that the student, say, with the loudest voice or the highest peer group status may influence other students' learning. If students lack the necessary background knowledge to understand the learning tasks they undertake or to check their own and peers' understanding, they are unlikely to extract the intended meaning and may instead 'learn' a collection of misinformation gleaned from peers.

Busy teachers in classrooms with 20 or 30 students cannot monitor everything individual students do or all the interactions between students engaged in group work. As a consequence, teachers can find it difficult to catch misunderstandings as they are formed or to offer timely feedback on individuals' success at learning tasks.

The teacher is largely cut off from information about what individual students are learning. Teachers are forced to rely on secondary information such as the visible signs that students are motivated and interested. They are sustained, however, by the commonly held belief that if students are engaged most of the time in appropriate learning activities some kind of learning will be taking place ... Teachers depend on the response of a small number of key students as indicators and remain ignorant of what most of the class knows and understands (Nuthall, 2005).

Plenary discussion or dialogue sessions following group work can be used to provide feedback to the whole class and allow students to check their own understanding and correct misunderstandings if these have occurred. However, the benefits of 'visible learning' do not occur optimally in the atmosphere of competitive bidding between students for the opportunity to answer questions that can characterise more traditional classroom question and answer sessions. During these sessions, it is frequently the 'key students' that Nuthall describes who dominate the responses to questions. ■

It is very evident that in classrooms the way language is used and the learning activities that children undertake do more than convey knowledge. One powerful but unintended lesson that children learn from their school experiences is what learning is.

Students learn not just the curriculum content but also the details of the experience that contained the content. Students learn what they do . . . When students sit listening to a lecture, they learn that learning happens by passively receiving information from others; when students fill in a worksheet, they learn that learning involves filling in the gaps in what someone else has created; and so on (Nuthall, 2007).

In addition, if children repeatedly participate in competitive attempts to showcase what they know, they learn that learning itself is a competition. They can also learn that learning is about being right or being seen to be right, rather than working together to find the best answer for any question or problem.

In contrast, discussion and dialogue is most effective when it is not competitive but collaborative and provides the same sort of peer support witnessed in the outdoor education programs that Hattie describes. For these reasons Alexander (2006b) has described dialogic teaching as:

- ▶ **Collective:** teachers and children address learning tasks together, whether as a group or as a class, rather than in isolation.
- ▶ **Reciprocal:** teachers and children listen to each other, share ideas and consider alternative viewpoints.
- ▶ **Supportive:** children articulate their ideas freely, without fear of embarrassment over 'wrong' answers; and they help each other to reach common understandings.
- ▶ **Cumulative:** teachers and children build on their own and each others' ideas and chain them into coherent lines of thinking and enquiry.
- ▶ **Purposeful:** teachers plan and facilitate dialogic teaching with particular educational goals in view.

'Educational goals' include more than subject content. These are also concerned with teaching students powerful learning, thinking and communication tools: to use talk to reason, explore, evaluate and participate in discussions that are reciprocal, collaborative, respectful and purposeful. These skills can help overcome enduring problems, for instance the tendency for boys to dominate talk, including during group work, and to 'shout girls down' (Godinho, 2007).

discussion and dialogue is most effective when it is not competitive but collaborative

Teachers who practise dialogic teaching give students the language and skills needed to achieve the above goals. For example, in this excerpt, a fifth grade teacher is leading a class discussion establishing the language and skills needed to work successfully in learning groups:

- T This time we are going to be sorting numbers. So that's our objective - sorting numbers. [*Teacher takes on role of child with a grumpy expression*] I'm going to work with Donal and Alan today and in my group I've decided I'm going to sort the numbers by multiples of three, and I don't care what they think. What's the matter, Maya?
- M You should, um, decide as a group.
- T Oh super. There's one of our ground rules already, 'Decide as a group'. OK, how am I going to do that? Because I want to sort my numbers by multiples of three. How am I going to make sure that we decide as a group?
- K Ask them what they think. Also, when you ask them what they think, don't turn your back on them because that is not positive body language.
- T You mentioned positive body language. What other type of language do we need to make sure is positive? Not just our body language ...
- C The way we talk.
- T The way we talk! Am I going to say 'I'm going to sort these in multiples of three!'
- C No. T Maya, what would you say if you were in my situation?
- M Um, 'I want to sort them by multiples of three. What do you think about it?' ...
- T OK, I am wandering around the classroom . . . I wonder what I might hear you saying [...]
- D What do you think?
- T What do you think? Brilliant.
- E Why do you think that?
- T Why do you think that? That's another good one, not just what but *why* you think that. Brilliant (Mercer & Littleton, 2007).

What children learn

12

A second excerpt demonstrates the skilful use of dialogue by a teacher to model exploratory talk. Features of this dialogue include:

- ▶ open questions;
- ▶ comparatively lengthy student responses;
- ▶ encouragement to use clear, appropriate language; and
- ▶ the teacher's use of prompting questions that build on student responses but invite them to take their thinking further.

The discussion is about the effects of 'push' and 'pull' factors on whether a fictional character, Giorgio, will leave his home in southern Italy and move to Milan:

- T O K, who thinks that Giorgio will leave his home and migrate to Milan ... Geoffrey?
- G We all agreed that he would go because he supports Milan and he loves football.
- T Does everyone agree with Geoffrey? Leanne?
- L Yeah, we thought the same.
- T Why? Geoffrey thought it was because of the Milan football team. Have you got another reason?
- P We agreed with that but we thought it would be more important about the job ... you know, the fact that he is likely to get a better job. That's more important than the football. And his girlfriend could get a job in Milan too because of the fashion industry there.
- T Good. Now, do any groups disagree with Leanne and Geoffrey's group? Sam – see if you can use some of the language we discussed in the starter.
- S We didn't, erm ... OK. Although we could see that he would be really tempted by the job prospects we thought that the pull of his family and his friends, who all live in Potenza, would be too much. And his brother had already left home so Giorgio will feel even more guilty about leaving.
- L But his brother sends money home – it says here [reading] 'People earn twice as much on average in Milan than in Potenza' so if Giorgio left he could do the same (Mercer & Littleton, 2007).

Where children are offered opportunities to make substantial contributions to classroom talk and are provided with instruction about relevant skills they are able to develop and practise a range of important speaking and thinking skills. These include the ability to:

- ▶ narrate;
- ▶ explain;
- ▶ instruct;
- ▶ ask different kinds of question;
- ▶ receive, act and build upon answers;
- ▶ analyse and solve problems;

- ▶ speculate and imagine;
- ▶ explore and evaluate ideas;
- ▶ discuss;
- ▶ argue, reason and justify;
- ▶ negotiate.

In addition children develop four vital abilities for interacting productively with others:

- ▶ listen;
- ▶ be receptive to alternative viewpoints;
- ▶ think about what they hear,
- ▶ give others time to think.

The following extract shows fifth grade children using these skills. The excerpt demonstrates the communication competencies the children have developed as a result of the class's establishment of ground rules for discussions. In the excerpt the children are doing maths group work:

- S1 Five, seven and five equals twelve. So put five.
- S2 Do you agree?
- S3 Yes, and then we need to sort this out [A little later]
- S1 I know, why don't we use the seven again?
- S3 What do we do now?
- S1 What do you think we should do now?
- S2 I don't know, it's too hard. I have never done this before.
- S3 I haven't done this before.
- S1 What can we remember? A blank square. All I remember is numbers. Eight plus one is nine (Mercer & Littleton, 2007).

A more disputational style is evident in the interaction between two primary school children, working on cartoon script. In contrast to the collaborative and respectful style of the maths group, the pair uses commands and assertions. Text in inverted commas represents the cartoon characters 'speaking':

- S1 Just write the next letter. 'Did you have a nice English lesson.'
- S2 You've got to get it on there. Yes that's you. Let's have a look at that ...
- S1 You've got to let me have a go sometimes
- S2 You're typing.
- S1 Well, you can do some, go on.
- S2 'Yes thank you.'
- S1 Unintelligible
- S2 You're typing. 'Yes thank you.' 'I did, yeah, yes, thank you I did.'
- S1 You can spell that.
- S2 Why don't you do it?
- S1 No, because you should. (Mercer & Littleton, 2007).

Using dialogue in English primary schools: a trial

Teaching methods using dialogue are being trialled in two English Local Education Authority areas: North Yorkshire and London Borough of Barking and Dagenham. Interim findings from the evaluation of the program have shown that classroom talk is becoming more dialogic in form and substance. Student results on standardised national tests of English and mathematics have also shown 'encouraging trends'.

Findings from the London phase of the dialogic project include:

- Teachers are constructing their questions more carefully. Questions starting with 'What?', 'Who?' and 'How many?' are giving way to those starting with 'Why?' and 'How?' Teachers are balancing factual recall or test questions with those which probe thinking and encourage analysis and speculation. 'Now who can tell me...?' questions, and competitive hands-up bidding to answer them, are being used more discriminately.
- Student-teacher exchanges are becoming longer.
- Student answers are less likely to be merely repeated by teachers, more likely to be built upon.
- Teachers are directing and controlling discussion less, prompting and facilitating it more.
- There is a more flexible mix of recitation, exposition and discussion.
- Information and opinion – rather than yet more questions – are being used to take students' thinking forward, so the balance of questioning and exposition is changing.
- Students are showing a growing confidence in oral pedagogy: more are speaking readily, clearly and audibly.
- Students are offering longer responses to teacher questions.
- Student contributions are becoming more diverse. Instead of just factual recall there are now contributions of an expository, explanatory, justificatory or speculative kind.
- There is more pupil-pupil talk.
- More pupils are taking the initiative and commenting or asking their own questions (Alexander, 2005).

In addition to the promising results from the work of Alexander and his team, outcomes from another program that uses teaching methods incorporating dialogue, the Thinking Together project, show that learning outcomes of children in infants, primary and junior secondary school who participate in the program are significantly higher than children from the

control group, who did not participate (Mercer & Littleton, 2007).

Making any change to routine classroom practice is demanding, and often best attempted in collaboration with colleagues. Techniques used in the schools in Britain where classroom dialogue has been introduced include videotaping lessons to gain an understanding of current practice. This is followed by setting goals for change and monitoring success at introducing these.

As a starting point compare the characteristics of dialogic teaching with current practice, and identify the aspects that might make the largest immediate difference. Choose two or three of these and trial their use in the classroom. Colleagues can observe and track progress over the first and subsequent weeks (Mercer & Littleton, 2007).

Godhino & Shrimpton (2003), in a study of exploratory talk in the classroom, conclude that *for students to engage in exploratory talk they need to be familiar with the discussion process, and teachers must enact enabling strategies that support student talk*. They identify three factors upon which exploratory talk is dependent:

- teacher and student knowledge of what constitutes a discussion*
- teacher enactment of strategies that support dialogic talk, and*
- classroom pedagogy that embraces collaborative inquiry (Godhino & Shrimpton, 2003).*

What strategies can teachers use to support this kind of productive classroom dialogue? When the role of the teacher in a particular stretch of dialogue is teased out, we can see how a range of strategies come into play.

To conclude this digest, a transcript of one phase in a longer discussion indicates learning opportunities that dialogic inquiry can provide. This example is found in the work of Wells (1999), who demonstrates how the role of the teacher in dialogic exchanges is responsive and flexible, changing as a discussion proceeds. His exploration of a science discussion in a Grade 4/5 science lesson shows how the thinking develops. In this class, students were used to working within a collaborative community of inquiry, and where the discussion was focussed on the question, 'Does mass change as matter changes state?' At an early stage of this discussion, the focus was on the predictions made by different groups. The discussion

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then moved on to focus on students' explanations about their predictions, in terms of their beliefs about the factors likely to be responsible for the predicted effect. Wells points out that here we can see how *the teacher chooses to emphasise the thinking involved in the prediction rather than simply the act itself, so she invites students to explain why they made the predictions they did* (Wells, 1999).

T ... Now, those people who say it decreased, why do you think it decreased? .. Phillips, that day you offered some reasons. Why do you think it would decrease ... when it changes state from solid to liquid ... the ice?

P Um . because like when it's – ice has some air in it and it's melted the air will go so it's . um <lighter>

T Uh huh . So the air . there's air that's trapped in the block of ice will escape as the ice melts and therefore you think the mass will decrease, right?

P Mm

T Any other reasons behind those who say it will decrease?

T Any other reasons behind those that say it will decrease? Yes, Benjamin?

B I said that it will decrease because there was a little bit of air inside the ice and it would um - um it would melt so the more <more than . greater than air ..>

T You say it would decrease so then it would mass MORE? .. I didn't follow, can you repeat what you said, Benjamin?

B Um . when- . it decreases because the air comes out and that means it would . weigh less (softly) . mass less

T Are you agreeing with Phillips or disagreeing with Phillips?

B Agreeing

T You're agreeing with Phillips that it would decrease? Now Mr Wells also raised the point – now when the ice melts. Say we froze that water again, what would you predict?

An I have something to say . The first thing is if you left it long enough <while> it was melted, some of the water could evaporate . and then, when you froze it, it would add um . it would probably have more air left <then> it might be slightly different or it might be – er or it might increase . depends if you left it <long enough> for the water to evaporate

(Note: the conventions of transcription used here use full stops to mark perceptible pauses, with each full stop corresponding to a one-second pause.)

At this point in the discussion, the discussions and thinking are moving forward, and alternative reasons are offered and critically examined.

The transcript of this stage in a longer discussion indicates the learning opportunities that dialogic inquiry can provide. ■



Adding classroom dialogue to the teaching repertoire

Adding a new technique to the teaching repertoire is challenging. Classroom dialogue that serves the purpose of building on children's answers to guide them towards deeper understanding has proved the most challenging aspect of using scaffolded dialogue to learn and practise. To be effective practitioners of this aspect of dialogue, teachers need to know the subject matter well, be aware of common difficulties experienced by students when learning the subject, and understand the current level of understanding of each of their pupils.

For teachers to succeed at applying dialogic methods where these are appropriate depends upon collaborative work in teams of teachers, within the context of support from school leadership. Robin Alexander suggests that the process should be a two stage one: first 'get the ethos right' by making classroom talk collective, reciprocal and supportive. Once this has been mastered the more challenging aspects of classroom dialogue can be added to the repertoire of professional practices.

useful websites

An example of dialogic teaching methods: a tutor and student discussing physics concepts:

<http://www.hscphysics.edu.au/resource/Dialogue.flv>

Department for Children, Schools and Families,

UK. Video: Staff meeting to review progress of speaking and listening

<http://www.thelearningfederation.edu.au/default.asp>

Robin Alexander Dialogos website:

www.robinalexander.org.uk/dialogos.htm

Abbey, N. Developing 21st century teaching and learning: Dialogic literacy

<http://www.newhorizons.org/strategies/literacy/abbey.htm>

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