

ROM Anthology Tasters

Pupil talk

How can pupils’ talk help you to uncover their misconceptions?

Research evidence

According to research, effective teachers believe that pupils can learn a lot from mistakes and learn most when they take the risk of exposing their ideas to others’ scrutiny. In these studies, effective teachers in mathematics and science assessed work carefully and listened to discussion so as to diagnose the thinking that lay underneath pupils’ errors. They then explicitly discussed these misconceptions with the pupils to improve their understanding.

Your evidence

Would you find it helpful to consider the opportunities you offer pupils to expose their thinking and ideas in your lessons? You may find it useful to record a lesson – or part of it – or ask a colleague to observe your lesson. You could focus on the types of questions you ask (distinguishing between factual questions requiring recall of knowledge and more open questions that require pupils to explain their thinking) and the answers your pupils give by recording your observations in a table:

Question	Type of question (factual or open)	Pupil’s response
<i>What answer did you get?</i> <i>How did you work that out?</i> <i>Can you explain why?</i>	Factual Open Open	

Were your questions effective at revealing your pupils’ thinking? What do your pupils’ contributions tell you about their individual levels of understanding?

Next steps

Now you have reflected on how your pupils approach exposing their thinking you might like to work with a colleague on turning your factual questions into more questions so that you probe your pupils’ understanding more often and more deeply. You might also like to list possible answers your pupils may give for some of the questions, including possible misconceptions, and discuss with your colleague how you might respond.

Find out more

RoM Anthology section 1, page 4, What do effective teachers believe about responding to pupil errors?

RoM 22 Learning science, transforming students’ everyday ideas about science and scientific thinking:
www.gtce.org.uk/research/romtopics/rom_curriculum/science_dec04

How can we accelerate pupils' thinking through talking?

Research evidence

"In collaboration the child can always do more than he can do independently." Lev Vygotsky.

The process of working together to solve a challenge or problem, supported by each other and you as the teacher is called social construction, because the conversation between the pupils and the teachers helps them to build new knowledge and understanding together. Engaging in discussion with others, helps pupils create a 'dialogue' within themselves in which they check and refine their own thinking.

Your evidence

You might like to explore how well *you* support your pupils' thinking when working and to focus on a pupil with whom you feel you have extended dialogue. Your colleague could observe a lesson you feel confident about and identify examples of where you talked to a child as s/he was working on a problem. Your colleague could record his/her observations using an observation schedule such as:

Child's problem	Your assistance	Child's response

After the lesson, you could discuss with your colleague when and how you were successful at helping pupils to solve a problem for themselves and to move their thinking forward

Next steps

Now that you have a picture of how teacher pupil conversation can contribute to the development of an extended inner dialogue for pupils you might like to review how you could further develop the support you offer other pupils. You might like, for example, to offer your pupils a "talking frame" on some ground rules for helping each other develop their own inner dialogue. You might also consider opportunities for supporting children to solve more complex problems than they could tackle alone. Could you be missing opportunities where you might address this?

Find out more

RoM Anthology section 2, page 9, How can you provoke your students to think? (Setting up a cognitive challenge).

RoM 15 Social interaction as a means of constructing learning: the impact of Lev Vygotsky's ideas on teaching and learning: www.gtce.org.uk/research/romtopics/rom_teachingandlearning/vygotsky_dec03

How can you help pupils become more aware of their thinking?

Research evidence

The process of articulating their thoughts during a group discussion helps pupils to become more consciously aware of their own thinking. This awareness of thinking is called metacognition. The discussions pupils hold whilst tackling a task may well lead naturally in this direction as they explain their thinking to each other. But sometimes pupils' talk will leave their thinking quite implicit. You can encourage improved metacognition whilst pupils are working together on a task by prompting them to say what they are thinking and why.

Your evidence

You may like to investigate the talk that takes place between your pupils whilst they are working in groups on a task. You could either ask a colleague to observe a group during a lesson or you could make an audio recording for later analysis. You could consider:

- How much speaking is there?
- Who is doing the speaking?
- Do the pupils give and ask each other for reasons?
- Do they pick up on what others have to say and build on it?
- Do they try to encourage each other to join in with the discussion?

You might also like to ask your pupils to reflect on their learning after the task is completed, during a plenary session.

Next steps

Now that you have had chance to think about how much talk helps to make thinking explicit, you might like to try to encourage more effective group discussion, by for example:

- agreeing explicit rules for discussion with pupils
- modelling asking questions that encourage others to explain their reasoning, such as 'Why did you think that?' and,
- encouraging pupils to explicitly take note of each other's responses.

Find out more

RoM Anthology section 2, page 9, How can you provoke your students to think? (Setting up a cognitive challenge).

RoM 35 Raising achievement through group work:

www.gtce.org.uk/research/romtopics/rom_managementoflearning/groupwork_nov06

How can you ensure *all* pupils get involved in group discussions?

Research evidence

Some pupils find it hard to formulate and express coherent arguments during small-group discussions. They may get distracted or frustrated and withdraw from the task, especially if a group leader emerges who does not listen well. There is good evidence that simple techniques to promote turn taking and improve listening really help promote pupils' learning.

Your evidence

You might like to observe a particular group of pupils to explore how well they listen and respond to each other during group-work and whether they draw each other into the discussion. You may find it even more helpful to ask a colleague to observe a group too so that you can discuss your observations with each other. You may spot, for example, that some children find it very hard to draw attention to the fact that they want to join in. Others may find it hard to notice tentative moves by group members and therefore may not 'let others in'. Can you spot the specific behaviours of pupils who do help everyone to contribute? Do they notice and build on what other people say? Do they limit new contributions to one or two points at a time?

Next steps

Now you have had chance to reflect on what inhibits and what facilitates contributions from everyone in group discussions you might like to plan to encourage positive habits through explicit teaching. Could you, for example, help your pupils acquire the social and communication skills needed to be effective listeners by modelling the process with a colleague or some pupils in front of the rest of the class? Would it be helpful to their learning for you to 'do it wrong' in order to attract comment from the pupils?

Find out more

RoM Anthology section 2, page 12, Why use collaborative group-work and small group discussion?

RoM 15 Social interaction as a means of constructing learning: the impact of Lev Vygotsky's ideas on teaching and learning:

www.gtce.org.uk/research/romtopics/rom_teachingandlearning/vygotsky_dec03

How deep is the dialogue that takes place in your classroom?

Research evidence

Teachers often leave less than a second after asking a question before asking another question or answering their own question, if no answer is given by a pupil. The only sort of questions that can be answered in such a short time are those needing little thought, so one of the outcomes of this short 'wait time' can be superficial classroom dialogue.

Teachers who use more effective questioning techniques:

- take time to frame questions that develop pupil understanding
- pause after asking a question to allow pupils to think
- discourage the practice of using 'hands up' to indicate that a pupil knows the answer and instead, expect everyone to be prepared to answer, possibly after discussion in pairs, and
- ask pupils to explain the reasons for their answers.

Your evidence

You might like to investigate the quality of the dialogue that takes place in your classroom during question and answer exchanges. You could tape record a ten-minute session. When you review the tape, you could write down the questions you asked and the answers your pupils gave. Or you could ask a colleague to observe a session and note down the exchanges that took place between you and your pupils. You could consider:

- What kinds of questions produced brief, superficial answers (3-4 words) from your pupils?
- What kinds of questions seemed to provoke them to think more deeply and give more extended answers?
- How often did you encourage pupils to elaborate on their answers and explain their reasoning?
- What kinds of questions did you use the most/least?

Next steps

Now you have had chance to reflect on the depth of classroom dialogue, you might like to work with a colleague to brainstorm open-ended questions with a high level of cognitive demand that help pupils to:

- speculate, hypothesise, imagine e.g. 'How do you think the hero would feel if ...?'
- synthesise information and ideas e.g. 'What do you think really happened ...?'
- evaluate, make decisions and judgements e.g. 'Would it be fair if ...?'
- transfer ideas, make connections and apply knowledge e.g. 'How is what we've found out useful ...?' and,
- explain their ideas e.g., 'Can you tell me more about ...?'

Could you plan to use the questions you devise in another lesson and monitor the effect on your pupils' answers?

Find out more

RoM Anthology section 2, page 17, How can you use different questioning techniques to improve classroom dialogue?

RoM 34 Effective talk in the classroom:

www.gtce.org.uk/research/romtopics/rom_teachingandlearning/effective_talk_sep06