

Oracy is a set of skills which allow us to communicate effectively and encompasses learning to talk and learning through talk; both involve **speaking and listening**. Learning **to** talk should lead to learning **through** talk. The aim is for learners to articulate their mathematical thinking, to make it clear to themselves and others, and to make sense of the mathematical thinking of others, developing a relational understanding of the mathematics¹. To achieve this, teachers will need to support exploratory talk², use dialogic teaching³ and 'orchestrate productive mathematical discussion'⁴.

Learning to talk includes:

- Establishing the psycho-social conditions which encourage and support exploratory talk; a classroom ethos that supports communities of learners where everyone's voice is valued, all learners have the potential to influence others and consensus building is central to lessons. This may involve:
 - Supporting all learners by addressing/removing feelings and thoughts that act as a barrier, by saying:
 - What's your **first** thought?
 - What **could** you do? What **might** work?
 - Imagine you are the sort of person who could do this, what would you do?
 - What would Batman/Elastigirl do?
 - In response to other learners, learners use sentence starters and questions:
 - I agree/disagree because...
 - I think differently...
 - I'm not sure but ...
 - Can I make a suggestion?
 - Can I ask a question?
 - Do you mean...?
 - Deliberate positioning of both the teacher and the speaker during episodes of both 'private talk' and 'public conversation'⁵:
 - During private talk (in pairs/trios) teachers:
 - Provide space for talk without intervening, sitting and noting from a distance
 - Move around, listening in to select and sequence contributions for public conversation
 - Prime learners so that they can rehearse their thinking before speaking publicly
 - During public conversation (large group/whole class)
 - Speakers stand up in their place or come to the front so that they are prepared to speak publicly, and other learners know where to focus their attention
 - Teachers position themselves across the class from the speaker to encourage projection so that everyone can hear
 - Talking about talk, explicitly identifying aspects of talk useful to the group:
 - I am listening out for people who...
 - Reproposal⁶: I heard...say...
 - Praising talk, distinctly from mathematics: I like the way you started by saying...
- Being supported to articulate thinking in full sentences. This may involve:
 - Using sentence starters such as:
 - I notice...
 - I think...because...
 - I know...
 - I wonder...
 - Repeating well-structured sentences spoken by other learners and adults.
 - Attend to precision in repeating before rephrasing. Ask 'Is that exactly what you said?'
 - Creating meaningful sentences employing both mathematical and everyday vocabulary.
 - Requiring use of given words and phrases such as:
 - Describe the fraction using the word 'divided'.
 - Explain what you notice about the pattern using the word 'multiple'.
 - Being specific and avoiding the use of pronouns:
 - Saying 'The numerator is seven' rather than 'It is seven'.

Learning **through** talk includes:

- Establishing the cognitive conditions where there is something mathematically worthwhile to talk about by providing mathematical experiences that provoke thinking. This will involve:
 - Teachers providing time and space for children to think and articulate their thinking:
 - Allowing thinking time before talking
 - Expecting all learners to share their mathematical thinking
 - Asking authentic questions⁷
 - Praising thinking distinctly from correctness
- Teacher modelling thinking aloud with careful, precise use of language.
- Exposing, accessing, and understanding mathematical structure. This may involve:
 - **Careful use** of stem sentences, spoken in full by learners, with a focus on mathematical structure such as:
 - To find one ... of a shape you divide it into ... equal parts.
 - I have...one tenths. I have... tenths.
 - There are ... rows of... There are...altogether.
 - Repeating
 - Drawing attention to a response that exposes something about the mathematics and ask the class or an individual to repeat this response word for word.
 - Rephrasing
 - Can you explain what Megan said in your own words? Megan, is that what you meant?
 - Consensus building⁸:
 - Making sense of the appropriateness of strategies that are presented
 - Examining how presented strategies are both meaningful and efficient
 - Connecting different strategies presented
 - Extracting the general rule that can explain the differences in the presented strategies
 - Creating generalisations together such as:
 - For unit fractions, the larger the denominator, the smaller the fraction.
 - Angles which meet at a point on a straight-line sum to 180 degrees.
- Mathematical questions arising from students. This may involve:
 - Clarifying understanding linked to the learner's responsibility when listening.
 - Using sentence starters and shared questions such as:
 - Why does...?
 - Can I ask a question?
 - What do you mean by...?
 - Clarifying understanding linked to the learner's responsibility when speaking:
 - Does anyone want to ask me a question?
 - Questions prompted by the mathematics:
 - Will it always be ...?
 - Does that always happen?
 - What would happen if...?

Reference notes:

- ¹ Skemp, R. R. (1976). Relational understanding and instrumental understanding. *Mathematics Teaching*, 77, 20-26.
- ² Mercer, N. & Dawes, L. (2008) *The Value of Exploratory Talk* in *Exploring Talk in School: Inspired by the Work of Douglas Barnes*, Sage Publishing
- ³ Alexander, R. (2008) *Towards Dialogic Teaching: Rethinking Classroom Talk*, Dialogos
- ⁴ Smith, M. S., & Stein, M. K. (2011). 5 practices for orchestrating productive mathematics discussions. Reston, VA: National Council of Teachers of Mathematics.
- ⁵ Askew, M. (n.d.) Private Talk, Public Conversation available online: <http://mikeaskew.net/page3/page5/files/PrivateTalkPublicConverse.pdf>
- ⁶ Parker, C. (2001) In *Experiencing Reggio Emilia: Implications for pre-school provision*, ed. L. Abbott, and C. Nutbrown, OUP.
- ⁷ Schaffalitzky, (2022) [What makes questions authentic](#), 428- 2022-02-03 Dialogic Pedagogy
- ⁸ Noriyuki Inoue, Tadashi Asada, Natsumi Maeda, Shun Nakamura, (2019) Deconstructing teacher expertise for inquiry-based teaching: Looking into consensus building pedagogy in Japanese classrooms, *Teaching and Teacher Education*, Volume 77, 366-377