Teacher Supports: Talk Science

Why spend your class time on productive talk?

Solid research evidence and widespread agreement exists that academically productive talk is critical for learning in science (*Taking Science to School 2007* and *Ready, Set, Science* 2008, both NAP). Productive talk addresses important academic content and is a critical component of any science lesson. Through talk, teachers and students explore ideas and use evidence to build and critique academic arguments. Talk in science is similar in many respects to talk in other subject areas, but has certain unique characteristics that focus on generating community-validated explanations of the natural world, based on data and models as evidence or tools in developing explanations.

Talk in science can…

1. provide a window into student thinking, revealing understanding and misunderstanding.
2. support robust learning by boosting memory, providing a richer set of associations, and supporting language development.
3. support deeper reasoning, and encourages students to reason with evidence.
4. apprentice students into the social and intellectual practices of science.
5. support the development of social skills and encourages risk-taking with huge payoffs for learning.

However, much of the talk typically occurring in science classrooms is not academically productive. Teachers at all grade levels often fall back on the kinds of discussions we experienced in our own learning. These discussions were something more like recitation, where the teacher asks a question with a single right answer, calls on a student to respond, indicates whether the answer is correct, and moves on to another question. While this is often helpful for review or for checking what students remember, it fails to create a culture where students take each other seriously, take risks, and build complex arguments together. Orchestrating talk that is focused on key content, where every student is motivated and willing to participate, can indeed be challenging.

What are the elements of academically productive talk?

1. A belief that students can do it
2. Well-established ground rules
3. Clear academic purposes
   a. *Elicitation* discussions uncover students' prior knowledge and piques interest
   b. *Consolidation* discussions help students solidify their understanding
   c. *Data* discussions help students interpret or evaluate data
   d. *Explanation* discussions help students provide evidence to support their claims
4. Deep understanding of the academic content
5. A framing question and follow-up questions
6. An appropriate talk format
   a. Teacher-guided whole group discussion
   b. Small group work
   c. Partner talk
7. A set of strategic "talk moves"

Based on Michaels, S. and O'Connor, C. (2011). Talk Science Primer from TERC's Talk Science Program. Cambridge, MA: TERC

For more information about implementing this approach in your classroom, see TERC Talk Science Primer at: See inquiryproject.terc.edu/shared/pd/TalkScience_Primer.pdf