Why “Talk”—and What is It?

• Language is, historically and individually, the foundation of being human.

• And talk — direct exchange between humans who can attribute intentionality and understanding to each other — is the foundational act of language.

• Without talk social communities are not possible.

• Without talk minds could neither grow nor be disciplined.
Roots: Philosophers of Mind and Democracy

• John Dewey:
  – ‘The method of democracy’ is organized intelligence that brings competing interests into the open…
  – Democratic deliberation is not merely as a mechanism for decision making, but a mechanism for individual and collective learning.

• Jürgen Habermas:
  – “Discourse ethics”: Norms and practices of a procedural and discursive form of democracy that relies on reasoned public deliberation.
  – “Dialogical rationality” through which participants advance arguments and counterarguments.

Reasoned Discussion on Public Issues: What Does It Look Like?

• Formal debates?
  – Highly patterned
  – Organized to “win,” rather than “understand”
  – Issues are often not “joined”

• Topical conversations?
  – Appear disorganized
    • Topics not explored in orderly ways
    • Interruptions and “talkovers”

• Are such conversations “reasoned?”
Salmon & Resnick: The Social Distribution of Arguments on Public Policy Issues

- Individuals do not complete arguments; instead, arguments are co-constructed
- Themes are distributed over time
- This makes normal logical analysis (even “informal logic” as in Toulmin) difficult to apply.
- Need to take into account structures of conversation and detect the logic within them. Key features:
  - Don’t say everything you know, rely on fellow arguers
  - Argue about (hidden) assumptions more than conclusions

How Are These Reasoned Discussion Skills Learned?

- Socialization, over extended periods of time.
- Deanna Kuhn: extensive studies on the development of argumentation skills
- Clark Chinn, Richard Anderson (and others) studies of students discussing children’s books, ecology problems, etc., trying to reach common understanding
- Discussion abilities are partly in the culture (perhaps in the human genetic code?), but they also need to be cultivated systematically
Taking Discussion-Based Reasoning to School

• The most promising place to cultivate skills and habits of discussion across all segments of populations (rich and poor, well educated and minimally educated, native and immigrant…)

• To do this…to socialize these habits of mind…requires extensive time. Discussion must permeate schooling.

• Apprenticeship in the core disciplines of schooling can provide the necessary time and structure.

• Each discipline—mathematics, science, literature, history—has its own genres of talk/argumentation.

Discussing Existentialism in High School

• 12th grade IB English class

• Two main texts under discussion:
  – Jean Paul Sartre, Existentialism; James Baldwin, Sonny’s Blues
  – This discussion follows four weeks of teacher led discussion modeling specific talk formats and behaviors, extensive note-taking, and other preparatory work by students.
  – Students here are grappling with Sartre’s definition of forlornness and attempting to decide whether Baldwin’s Sonny is forlorn according to Sartre’s and/or the dictionary definition.
  – Notice how students keep the discussion focused on the forlornness question, pressing for reference to texts and expressing puzzlement—all strategies modeled earlier by the teacher.
Starting Earlier, Including a Wider Spread of Student Abilities


- As in the preceding example, extensive preparation and practice (using a library of books, not just one) prepared students to conduct a discussion without direct teacher guidance.

Teaching Mathematics Discursively

- A well-developed instructional approach, cross national agreement on a conversational “technology” of teaching.

- 3 elements
  - **Task** that requires “mathematization” and for which several solutions are mathematically correct.
  - **Social organization** that evokes participatory discussion with demands for evidence and justification.
  - **Structured “debriefing”** that formalizes the mathematization.
This is Costly. Is It Worth It? Does it Really “Build the Mind”? Growing Evidence That It Does

Elementary Mathematics: Case Studies on Accountable Talk
- Pittsburgh: Bill et al
- Chelsea, Massachusetts: O’Connor and colleagues

![Graph showing the progression of mean percentile rank in intervention cohort B from kindergarten to third grade.](chart.png)
Project Challenge

• Four-year intervention led by Suzanne Chapin and Catherine O’Connor of BU
• Challenging mathematics taught discursively to potentially talented middle-school students in MA.
• More than 70% of these students qualified for lunch aid, and more than 60% spoke languages other than English at home.
• One-hour class every day, TERC Investigations, Connected Math Logic problems.
• Expanded homework and weekly quizzes
• Monthly in-service teacher professional development

After Two and a Half Years…

The class average on the California Achievement Test math portion was at the 90th percentile of a national norming sample.
Challenge Students Compared With a Post-Hoc Matched Control

Challenge students outperform control in math and ELA. Intellectual capability is transferring to another discipline, thus "building the mind."

Middle School Science: “Far transfer” on a Larger Scale

Adey & Shayer (England)

Multiple teachers and classrooms

12 year old science classes, 1 or 2 times/week, 1-2 years

Piaget’s “formal operations” assessments used as teaching tasks

At age 15, significantly better performance than control students on the national test in science, math, and English.
And More…

• Mercer, Wegerif, England, Mexico.
  – Primary science discussions
  – Significantly better performance than controls
  – Improvement of performance on an “unteachable”
    intelligence test (Raven's Progressive Matrices)

• Philosophy for Children
  – Transfers to reading

• More coming…

Why Does It Work? Multiple Claims

• Cognitive explanations: deeper processing, more
  content….

• Social explanations: student self confidence, effort
  orientation (instead of ability)

• Sociological explanations: positioning, the right to be
  heard, to have an opinion

• And multiple others. The next phase of research will
  have to be multidisciplinary
Reaching Many Students: A Large Challenge

- Doesn’t fit many teachers’ implicit theory of learning
- Many teachers believe that only “top” students can participate effectively
- Teachers and supervisors worry about accountability testing: A struggle for time in the teaching program
- To lead this kind of discussion teachers must themselves know the content deeply