

Pedagogical Considerations

Some 'ambiguous' terms

- Group Work?
- Whole Class Discussion?
- Out of Class Work?
- When to Tell?

Class Structure

Out of Class Work

- What sort of things can you off load to outside of class time?
- What sort of things should not be off loaded to outside of class time?
- What sort of things do you need students to do outside of class?

Class Structure

Group Work

- It is intended that students work on these tasks in small groups during class time. Why do you think it might be important for students to work in small group in class?

Class Structure

Whole Class Discussions

- It is intended that time is devoted to whole class discussions.
Why do you think it might be important to engage in whole class discussions?

Pedagogical Moves in the Moment

Sometimes students need help understanding the problem

If the conversation (or the small group work) is way off base – is it because they don't understand what the point is?

Refocus the class, try to find student work that gets at what you wanted/expected

Adjust the task or provide “the answer” and ask them to make sense of it

“It sounds like some people came up with $dP/dt = .2P$ while other had $dP/dt = .2e^{-2t}$. Take a few minutes to think about which one of these might best fit the scenario. I'll let you know when you can talk to a neighbor?”

Pedagogical Moves in the Moment

Sometimes students are ready for a resolution – you CAN tell them when you think the class is ready to hear it

they can make sense of what you are saying

they can connect it to what they were doing

the “pay off” is no longer there

You should synthesize the main points, draw closure and connections, and introduce formal language and notation.

Pedagogical Moves in the Moment

Sometimes students need help to appreciate the resolution

Provide a counterexample to deepen or expand their thinking

“Johnny suggested that a closed subset of a group will always be a subgroup, take a couple of minutes to test this idea out with a partner. Does this always work?”

You can capture a useful idea or representation and refocus the class (sometimes with an intermediate task)

“Julie chose to connect the vectors ‘tip to tail’. Take a second with your group and see what you get when you do this? How does this compare with your approach? “

Chris Rasmussen - What Happens in a Typical Day?

As we go to break take a look at this handout.

When we come back we will watch a first day
in IOLA.

4 Components of Inquiry-Oriented Instructors

- 1) Generating Student Reasoning
- 2) Building on Student Contributions
- 3) Developing a Shared Understanding
- 4) Connecting to Standard Mathematical Language and Notation

Day 1 of IOLA

- Video of a whole class on the first day (transcripts in your folder)
- The teacher's second implementation of the IOLA materials
- As we watch, keep notes on when/how the four practices emerge

Day 1 of IOLA