

Working Group 3: Rich Learning Tasks: Position Paper

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Rich Learning Tasks are essential for students to play the sense-making game (as opposed to the knowledge game.)

Knowledge Game: stuffing with rules

Sense Making Game: playing with rules

Sense making includes such things as teaching for understanding, learning with understanding, making sense of / with concepts and procedures, making sense of situations, exercising one's intuition / imagination / curiosity, making sense to / of others, learning / applying / refining sense-making procedures, inquiring / investigating / experimenting, problem solving / posing, and using knowledge in an integrated / authentic manner. A learning task is 'rich' if it promotes such activity.

Participants in this working group will have the opportunity to continue the discussion rich tasks begun last year in Sicily. Discussion in this group *could*, in part, focus on questions such as the following:

1. What makes a learning task 'rich'?
2. [*The typical mathematics classroom 'activity sheet' generates lots of student activity.*] Why is this activity typically not sense-making activity?
3. Is there a need, as suggested by Deborah Ball, to convert the teacher's sense of what their work is?
4. Why do we not see the sense making game being played in the typical mathematics classroom?
5. [*Students will not / cannot make sense unless they are motivated to do so, have the opportunity to do so, and are in possession of the means to do so. In short, students will not / cannot make sense unless they have the 'MOM' to do so.*] What factors / forces / dis-incentives are at play in classrooms that contribute to separating students from the MOM to sense make?
6. [*Teachers will not / cannot animate / enable / facilitate student sense making unless they have the 'MOM' to do so, that is, teachers will not / cannot animate / enable / facilitate student sense making unless they are motivated to do so, have the opportunity to do so, and are in possession of the means to do so.*] What are the factors / forces / dis-incentives keeping teachers from animating / enabling / facilitating student sense making?
7. How do the characteristics associated with a successful sense-making episode compare with the characteristics of any good novel?
8. [Students engaging successfully with a rich learning task are thinking like mathematicians.] Is thinking like a mathematician the same as thinking mathematically?
9. [Questions arising from the group.]

Participants are encouraged to bring along samples of (typical, pseudo-rich, or rich) mathematics learning tasks to help focus the discussion.