

Teaching with student participation

Four discursive moves

Revoicing:

It consists of re-uttering a student's contribution in the form of repeating, rephrasing, summarizing, elaborating, or translating someone else's speech.

Repeating provides an additional opportunity for the utterance to be heard and reflected on.

Elaboration allows the teacher or a classmate to reformulate the student's contribution when its author fails to make it explicit to the audience in a clear and coherent way.

At the same time this move opens opportunities for the students to agree or disagree with the teacher's/ or classmate's characterization of the contribution.

Revoicing allows the teacher to mention key terms in a student's contribution and draws attention to whether they are crucial notions in the argument.

Orienting:

It consists of providing opportunities for students to listen and attend to the solution paths of others. It takes place through asking clarifying questions without evaluating, soliciting students' explanations of other students' work or their own, as well as appealing for their evaluation of another student's comment.

Teachers orient students to each other also by creating oppositional structures based on students' contributions and enacting the rules for conducting logical disputes that are not socially disruptive.

Negotiating:

It consists of teachers taking part in exchanges with different students by

- asking them if they had different answers
- commenting on students' solutions by characterizing them as similar or different to other contributions (or asking the students to do the commenting).
- explains what is mathematically different about the different solutions
- suspending judgment on the correctness of a mathematical contribution and participating in finding examples that test the validity of the solution.

In negotiation, the activity shifts from that of giving responses to that of comparing solutions.

Making the structure of the mathematical discourse visible:

It consists of helping the students see the content and form of the mathematical discourse. It depends on shifting between two roles: That of a participant in the discussion and that of a commentator about the discussion. Teachers can point out features of the discussion that are new and representative of mathematical discourse. This can also be done through explicit teaching of the norms, rules and vocabulary associated with the new discourse.