

Selecting and Sequencing Student Solutions

1 Mellina: When Ms. Mossotti asks me to come and present in front of the class, I
2 like presenting because then I can find out if the other students agree with
3 me. It makes me think about my own answer more. It helps me understand
4 it more.

5 Peg Smith: Selecting is the practice of determining which solution strategies the
6 teacher wants to have shared during the whole class discussion. In order to
7 make the selections, the teacher needs to review the data they've collected
8 on their monitoring tool and decide which of the solutions-- and ultimately
9 in what order-- would best help the students access and make sense of the
10 mathematical ideas that she's targeting in the lesson.

11 Selecting can be very challenging, particularly if you are not clear on what
12 it is you're trying to accomplish mathematically. So selecting must be
13 done in light of the mathematical learning goals that you've articulated for
14 the particular lesson. So it's not about letting 1,000 flowers bloom and
15 letting every student share what they've done. It's about trying to decide
16 which solutions are going to allow you to make the mathematics that you
17 want to put on the table visible for discussion.

18 Another thing to consider is who will be the presenter. And this is an
19 opportunity for a teacher to really consider which student, who produced a
20 particular solution, has not had time recently to be seen as publicly
21 competent as a mathematical doer. In this sense, selection can be an issue
22 of equity, making sure that over time, each and every student has an
23 opportunity to demonstrate competence in a public setting of the
24 classroom.

25 Mya: Ms. Mossotti class is like-- it's fun. She like-- we actually-- I understand
26 math more because I never liked math before in the other classes. It's just
27 different. We don't get to-- sometimes you feel left out of things-- not like
28 left, left out, but left out. And in Miss Mossotti class, everyone gets a
29 chance to present what they have to say.

30 Peg Smith: Sequencing is really about the order in which you're going to arrange the
31 solutions that are going to be discussed, such that the first solution that
32 gets talked about is one that every student in the class can access. It may
33 be a solution that uses some sort of a concrete model or representation that
34 makes the mathematical idea clear.

35 And it may then build up to a more abstract or symbolic representation so
36 that what you're doing is you're taking students on a journey. You're
37 beginning with something that everyone will relate to, and then you may
38 be moving to another solution that is slightly more complicated or more
39 abstract. And through this process, what you're doing is you're developing

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40 a mathematical storyline. There is something specific that you want
41 students to learn, and every solution that you have discussed provides
42 some piece of information that helps you get to the end game.

43 The sequence needs to build that understanding so that every piece of
44 work that's examined adds to the understanding in some unique way. If a
45 piece of work isn't contributing something different, then there's probably
46 no reason to talk about it. So I think one of the challenges is being clear
47 about what you're trying to accomplish, understanding the mathematics
48 well enough to see how one piece, one solution strategy, fits with the next.

49 One challenge the teachers often face in selecting and sequencing is when
50 you should feature a misconception. So the first thing to think about is that
51 every error students make may not be worthy of having a class discussion
52 about it. But when a student has a missing piece conceptually, and
53 multiple students in the class hold the same misconception, then it's really
54 important to have a public discussion about it so that students can come to
55 understand not just how to get the right answer, but why it doesn't make
56 sense to do it this way.

57 Crispin: How I feel when she has us present is that I think she has confidence in us
58 that we're-- that either we have the right answer or if we're incorrect, she
59 wants us to come out, kind of explain it. Then as we're doing the process
60 and explaining it, we're like-- we see a couple errors in it, we're like, oh, I
61 messed up on this. Now I see why Ms. Mossotti called me up, so I can
62 figure it out by myself.