



“What seems like a misconception is often, and perhaps usually, a perfectly good conception in the wrong place.” p.74

William, D. (2011). Embedded Formative Assessment. Solution Tree Press



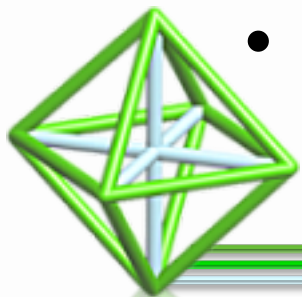
# Reflecting on Practice: Using Formative Assessment to Inform Instruction

## Unit 3 Session 10



# Key Strategies for Effective Formative Assessment

- Clarifying, sharing and understanding goals for learning and criteria for success with learners
- Engineering effective classroom discussions, questions, activities and tasks that elicit evidence of students' learning
- Providing feedback that moves learning forward



Here is a short clip on responding to student work.

Jot down two things that struck you as you watch the video.

[www.youtube.com/watch?v=NWv1VdDeoRY](http://www.youtube.com/watch?v=NWv1VdDeoRY)



- Inside your folders are a package of tests.
- Choose **ONE** of the tests and grade it.
- Each question is worth two points. Write the overall grade at the top.



*... the only feedback that was productive was something that gave the student a way to move their thinking forward.*

*D. Wiliam*

Reflect for a minute on comments that would move **student** thinking forward



5. Solve using the Quadratic

Formula

$$-2x^2 + 5x = -3$$

$$\frac{-5 + \sqrt{1}}{-4}$$

$$\frac{-5 + 1}{-4}$$

$$\frac{-4}{-4}$$

$$= 1$$

$$\frac{-5 - \sqrt{1}}{-4}$$

$$\frac{-6}{-4}$$

$$= \frac{3}{2}$$

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$\frac{-5 \pm \sqrt{5^2 - 4(-2)(-3)}}{2(-2)}$$

$$\frac{-5 \pm \sqrt{5^2 - 4(6)}}{-4}$$

$$\frac{-5 \pm \sqrt{25 - 4(6)}}{-4}$$

$$\frac{-5 \pm \sqrt{25 - 24}}{-4}$$

$$\frac{-5 \pm \sqrt{1}}{-4}$$

... the only feedback that was productive was something that gave the student a way to move their thinking forward.





5. Solve using the Quadratic

Formula

$$-2x^2 + 5x = -3$$

a b c

$$\frac{-5 + \sqrt{1}}{-4}$$

$$\frac{-5 - \sqrt{1}}{-4}$$

$$\frac{-5 + 1}{-4}$$

$$\frac{-6}{-4}$$

$$\frac{-4}{-4}$$

$$= \frac{4}{4}$$

$$= 1$$

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$\frac{-5 \pm \sqrt{5^2 - 4(-2)(-3)}}{2(-2)}$$

$$\frac{-5 \pm \sqrt{5^2 - 4(6)}}{-4}$$

$$\frac{-5 \pm \sqrt{25 - 4(6)}}{-4}$$

$$\frac{-5 \pm \sqrt{25 - 24}}{-4}$$

$$\frac{-5 \pm \sqrt{1}}{-4}$$

“What should a = , b = , c = ?”



5. Solve using the Quadratic

Formula

$$-2x^2 + 5x = -3$$

$$\frac{-5 + \sqrt{1}}{-4}$$

$$\frac{-5 + 1}{-4}$$

$$\frac{-4}{-4}$$

$$= 1$$

$$\frac{-5 - \sqrt{1}}{-4}$$

$$\frac{-6}{-4}$$

$$= \frac{3}{2}$$

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$\frac{-5 \pm \sqrt{5^2 - 4(-2)(-3)}}{2(-2)}$$

$$\frac{-5 \pm \sqrt{25 - 4(6)}}{-4}$$

$$\frac{-5 \pm \sqrt{25 - 4(6)}}{-4}$$

$$\frac{-5 \pm \sqrt{25 - 24}}{-4}$$

$$\frac{-5 \pm \sqrt{1}}{-4}$$

“C should be +3 as it needs to move to the other side”



5. Solve using the Quadratic

Formula

$$-2x^2 + 5x = -3$$

a b c

$$\frac{-5 + \sqrt{1}}{-4}$$

$$\frac{-5 - \sqrt{1}}{-4}$$

$$\frac{-5 + 1}{-4}$$

$$\frac{-6}{-4}$$

$$\frac{-4}{-4}$$

$$= \frac{4}{1}$$

$$= 1$$

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$\frac{-5 \pm \sqrt{5^2 - 4(-2)(-3)}}{2(-2)}$$

$$\frac{-5 \pm \sqrt{5^2 - 4(6)}}{-4}$$

$$\frac{-5 \pm \sqrt{25 - 4(6)}}{-4}$$

$$\frac{-5 \pm \sqrt{25 - 24}}{-4}$$

$$\frac{-5 \pm \sqrt{1}}{-4}$$

“Does this solution work?”



5. Solve using the Quadratic

Formula

$$-2x^2 + 5x = -3$$

a b c

$$\frac{-5 + \sqrt{1}}{-4}$$

$$\frac{-5 - \sqrt{1}}{-4}$$

$$\frac{-5 + 1}{-4}$$

$$\frac{-6}{-4}$$

$$\frac{-4}{-4}$$

$$= 4$$

$$= 1$$

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$\frac{-5 \pm \sqrt{5^2 - 4(-2)(-3)}}{2(-2)}$$

$$\frac{-5 \pm \sqrt{5^2 - 4(6)}}{-4}$$

$$\frac{-5 \pm \sqrt{25 - 4(6)}}{-4}$$

$$\frac{-5 \pm \sqrt{25 - 24}}{-4}$$

$$\frac{-5 \pm \sqrt{1}}{-4}$$

“What are your assumptions when using the Quadratic Formula?”



Students given the scaffolded response learned more and retained their learning longer than those given full solutions or just a grade

Multiple research results involving Formative Assessment



Group yourselves in PAIRS by finding your Test Partner at the opposite table (1-2 and 3-4).

Grade again but this time do not give a grade but instead write at most TWO comments to the student that you think will give the student a way to move their thinking forward.



# Keep in mind....

- Be kind
- Be helpful
- Be specific
- “Hard on content, soft on people”

Anne Paoletti & Team, 2015



Which observations about all the comments you saw might help define a clear pathway for students to figure out how to correct their thinking? Why?





Is there any connection between giving students comments and assigning grades?



*“Students given marks will see it as a way to compare themselves with others; those given comments will see it as a way to improve. The latter group outperforms the former”*

*Black & Wiliam, 2004, pg. 18*



How can we, as teachers, read and comment on every piece of student work in a reasonable amount of time?

Are there some strategies we can use to make sure students understand they are accountable but also that this is an opportunity to learn?



Lets review what we did today:

Take a few minutes and write down the key things we talked about today. What is your take-away?



# Exit Ticket

*On a notecard,*

- What's your biggest take away for your own classroom?
- What's still bothering you about formative assessment?
- What feedback would you give **us** that would move the RoP program forward next week?



# Homework

Read the section from Feedback “Moves Learning Forward”, Wiliam, D. pp 2-3. NCTM Research Brief



# References

- (Black & Wiliam, 2004, pg. 18) from Ruth Butler, “Task-Involving and Ego-Involving Properties of Evaluation: Effects of Different Feedback Conditions on Motivational Perceptions, Interest, and Performance,” *Journal of Educational Psychology*, vol. 79, 1987, pp. 474-82.

