POWERING TEACHERS | A Machine Learning Tool for Instructional Measurement and Feedback

M-POWERING AUTOMATED FEEDBACK COACHING PROTOCOLS

M-Powering Automated Feedback Coaching Protocols was developed by the Center to Support Excellence in Teaching at the Stanford Graduate School of Education.

This work was supported by the National Science Foundation under Grant No. 2241483. The opinions expressed herein are those of the authors and do not necessarily reflect those of the National Science Foundation.

This work draws on CSET's research-based coaching practices as well as scholarship within the field of instructional coaching.

Contact michelereinhart@stanford.edu or cbywater@stanford.edu for information about coaching programs that complement and support teachers' use of the M-Powering measures.

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COACHING PROTOCOL A: TEACHER & COACH TEMPLATE

Guide for Using Protocol A

1. Coach selects a few (2-3) metrics from the M-powering automated feedback tool.
2. Coach adds screenshots of the chosen metrics and generate one or two reflection questions for each.
3. For support:
    a. Review the COACHING PROTOCOL A: SAMPLE for a visual example
    b. See the RESOURCE BANK FOR COACHES: REFLECTION QUESTIONS for a bank of possible reflection questions to get you started.

Date of Coaching Conversation:
Teacher:
Coach:
Class Recorded:
Lesson Goal(s) for Students:
Current Teacher Professional Goal(s):

Overall Reflection (for teacher): *When you look at all of the automated feedback. . .*	**Responses**
What do you *see?*	
What do you *think?*	
What do you *wonder*?	

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Metric #1:
Screenshot:

Reflection Questions:

Metric #2:
Screenshot:

Reflection Questions:

Metric #3:
Screenshot:

Reflection Questions:

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Closing Questions (for teacher)	Responses
What are a few trends you see in your reflections above? *In what ways do these trends align (or not) with your learning goals for your students and your own professional goal(s)?*	
What, if any, adjustments do you want to make to your current professional goal(s)?	
What are one or two things you want to work on between now and our next coaching session?	
What resources or support do you need from me in order to work on these one or two things?	

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COACHING PROTOCOL A: SAMPLE

Date of Coaching Conversation: 2/31/2099
Teacher: SI:
Coach: Coach Coacherson
Class Recorded: Grade 8 Period 2
Lesson Goal(s) for Students: SWBAT describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.
Current Teacher Professional Goal(s): Encourage students to share more of their reasoning

Overall Reflection (for teacher): *When you look at all of the automated feedback. . .*	**Responses**
What do you *see?*	
What do you *think?*	
What do you *wonder*?	

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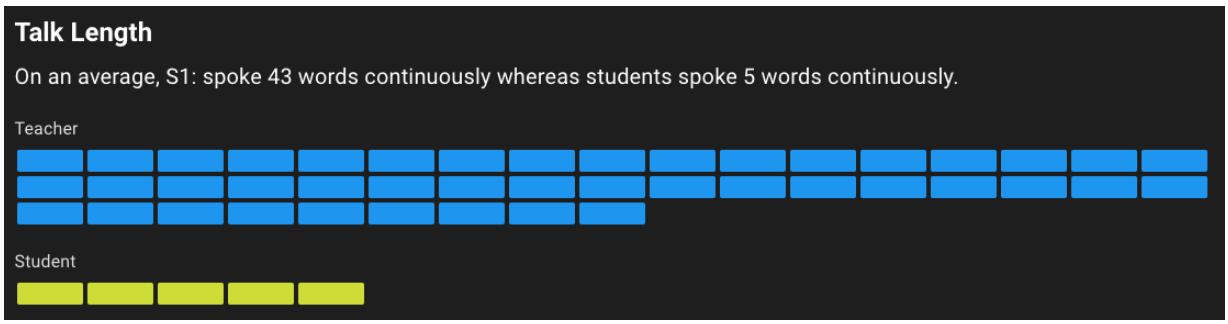
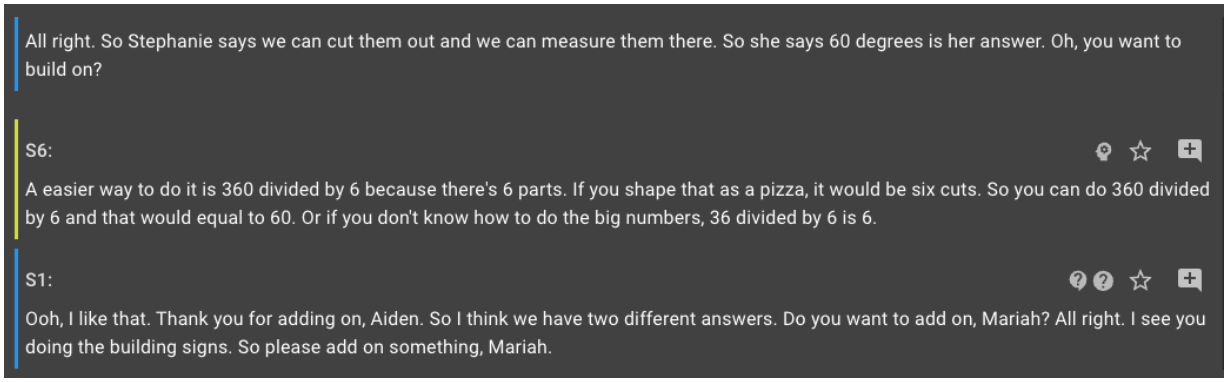
Metric #1:



Reflection Questions:

Where were some instances of longer stretches of student talk? Was there anything different about what you did before, during, or after those stretches that could have contributed to students saying more?

Metric #2: Reasoning



Reflection Questions:

At this moment, Aiden/S6 shares his reasoning about how to visualize 60° on the coordinate plane. He used a hand signal to show he wanted to build on Stephanie's answer. How might you build on this practice of getting students to add on to each other's responses to encourage them to share more of their reasoning during their initial responses?

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COACHING PROTOCOL B: TEACHER AND COACH TEMPLATE

Guide for Using Protocol B

1. After lesson has been recorded and uploaded to M-Powering Teachers, but prior to the Teacher and Coach meeting, the Teacher completes Step 1 and Step 2.
2. Teacher and Coach complete Steps #3-5 together during the coaching conversation.
3. Review RESOURCE BANK FOR COACHES: REFLECTION QUESTIONS for a bank of possible reflection questions to get you started.

Date of Coaching Conversation:
Teacher:
Coach:
Class Recorded:
Lesson Goal(s) for Students:
Current Teacher Professional Goal(s):

STEP #1: TEACHER REFLECTION

When you look at all of the automated feedback. . .	**Responses**
What do you *see?*	
What do you *think?*	
What do you *wonder*?	

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STEP #2: TEACHER REFLECTION, ZOOMING IN

1. Given your overall reflections in step #1 and your current goals, what type of talk moment* would you like to focus on in our coaching conversation? Why?

2. Take a minute to skim the transcript from the recording.
   a. Of what are you feeling particularly proud around this type of talk moment ? Why?
   b. Where do you notice missed opportunities?

*Examples: Uptake, Questions, Focusing Questions, Reasoning

STEP #3: TEACHER & COACH: REVISING THE TRANSCRIPT

This step is to ensure that our conversation in step #3 is based on a transcript that is reflective of the data for the metric you chose to focus on in Step #2.

a. Teacher chooses a talk moment related to their professional goal(s) / instructional goals* in Step #2.

b. Teacher and coach work together to review the transcript for:

   i. Instances of talk moment the tool **missed**. Use the Star icon  to mark these missed instances and the Comment icon  to leave brief rationale for why they should be included.

   ii. Tags for talk moment that are **incorrectly identified**. Use the Star icon  to mark these misidentified instances and the Comment icon  to leave a brief rationale for why they shouldn't be counted.

*If using a custom talk moment, Use the Star icon  or Comment icon  to mark instances of your custom metric.

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STEP #4: TEACHER & COACH: DIGGING INTO THE REVISED TRANSCRIPT

Digging into the Revised Transcript to Inform Future Teaching
Below are four different options for digging into the metric. Choose one column to guide the conversation.
Thinking about Teacher eliciting moves • What questions/moves are you making to elicit student thinking? In what ways do these support your instructional goals in the lesson? • What happens right before and after the eliciting moment? Any interesting trends there? • What other elements of the overall learning environment could be leading to instances of talk moment? What might be getting in the way? • What else would support more instances?
Thinking about Teacher responding moves • What do you notice about how you responded after instances of talk moment? • Which responses were more effective in meeting your instructional goal? Why/how? • Where did you see missed opportunities? How might these inform future pedagogical moves?
Thinking about Student participation • What do you notice about *which* students are participating when talk moment happens? • What are your hunches about why? • What ideas do you have about how to bring in other voices?
Thinking about Student thinking Sort the instances of talk moment into a subcategory* to further explore student thinking After sorting: • What's jumping out? Why? • In what ways do the instances of student thinking align with your instructional goal(s) during the lesson? What gaps do you see? • What ideas or questions do you have about how to build opportunities for this type of student thinking into an upcoming lesson? **Some example sub-categories: Uptake* - revoicing, affirming, using a student idea for others to make connections. *Reasoning* - conceptual, procedural *Questioning* - advancing, assessing, eliciting, probing, connecting

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STEP #5: TEACHER & COACH: CLOSING REFLECTION & NEXT STEPS

	Responses
What are a few trends you see in your reflections above?	
In what ways do these trends align (or not) with your learning goals for your students and your own professional goal(s)?	
What, if any, adjustments do you want to make to your current professional goal(s)?	
What are one or two things you want to work on between now and our next coaching session?	
What resources or support do you need from me in order to work on these one or two things?	

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RESOURCE BANK FOR COACHES: REFLECTION QUESTIONS

Metric	Possible Reflection Questions by Metric
Talk Distribution & Length	What type of lesson structures were present in this recording that supported student talk (e.g. whole class discussions, pair work, independent practice, etc.)? What were the overall distributions for the lesson between teacher and student talk? How does the overall distribution align with your goals? How might you adapt this overall lesson format to shift the distribution, if it is not aligned with your goals? How would other lesson formats afford other distributions? What were the distributions between teacher and student talk for a specific activity segment? How might you adapt this activity structure, if it did not meet your goals? What other activities might afford other distributions? *Zoom into some specific moments of teacher talk in the transcript & ask the teacher to explore:* - What pedagogical purpose(s) (e.g. eliciting student ideas, probing student thinking, making connections between student ideas, etc.) were they hoping that specific teacher-talk moment would serve? How did students respond? - In what ways was the teacher-talk moment a missed opportunity to support one or more of these purposes? - What might you say differently in a similar situation next time to support your pedagogical goals?
Talk Moments	**Uptake** Where are there moments where you are taking up students' ideas? How do these moments connect with your instructional goals for the lesson? What kinds of student contributions led to this uptake? How do these moments connect with your instructional goals for the lesson? In what ways do you affirm, build on, or otherwise use student ideas? How do students respond? How do these moments connect with your instructional goals for the lesson? How might you build on these moves in future lessons? **Questioning** Are there any patterns between the type of questions you asked and the type of responses you got from students?

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	When did you think your questions were effective (meaning they accomplished what you intended)? What made your questions effective? Which questions would you rewrite or rephrase to get deeper student responses and/or more engagement? **Reasoning** What kinds of reasoning are students sharing? When are students sharing *why* they think something is true or *why* they used a specific strategy? When are students reporting *what* they did? What kinds of things are students reasoning about? When are students reasoning about an idea from the teacher? When are students reasoning about an idea that came from another student?
Common Top Words	What was the main mathematical purpose for communicating in this lesson (e.g. explaining a process, justifying a claim, comparing and contrasting representations, etc.)? Which words were you hoping your students would most commonly use during the lesson to support this purpose? What jumps out to you about the word cloud to this end? Where do you see missed opportunities to support students in learning and using these words? How might you build additional opportunities in an upcoming lesson? (e.g. Comparing two dot plots with similar central tendencies and different variations to give students a reason to need to say things like “distribution” or “spread”, Needing to distinguish between which number is being partitioned and which number is how it will be partitioned to give students a reason to need to say things like “divisor” or “dividend”.)

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