



Recommended Conditions for Use of the Practical Measures of the Classroom Learning Environment

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Introduction to the Practical Measures of the Classroom Learning Environment

Our team is developing a *system* of practical measures, routines for using the measures, and representations of the resulting data to support instructional improvement in middle-grades mathematics. The system includes practical measures of two types.

The first type focuses on *key aspects of the classroom learning environment* (what we refer to as the classroom measures) that prior research has linked to student learning. The second type focuses on *key aspects of the professional development learning environment* that prior research has linked to teacher learning; this type includes measures specific to one-on-one coaching cycles and teacher collaborative time. The professional development measures are still under development.

Our practical measures:

- Are specific to improvement goals
- Use language that is relevant and meaningful to practitioners
- Are easy to implement
- Provide frequent, rapid feedback
- Directly inform efforts to track and improve practice
- Can be easily embedded in professional learning
- Are not meant to be used for accountability or high-stakes, evaluation purposes

Here is a brief description of the four **classroom measures**:

	Rigor of the Task: This short checklist is designed to be used by a coach or district leader with a teacher to discuss the rigor of the task(s) selected for a lesson. This check-list is completed by teachers, coaches or district math specialists before the lesson is implemented.
	Launch of the Task: This short student survey provides insight into students' perceptions of the teacher's introduction to (or launch of) a mathematical task. We designed the survey to be administered immediately after a task is introduced and to take about 1 minute to complete.
	Small Group Discussion: This short student survey provides information about students' perceptions of key aspects of small group discussion in a specific lesson. The survey was designed to take about 2-3 minutes to complete and is administered at the end of small group work time, or at the end of a lesson.
	Whole Class Discussion: This short student survey provides information about students' perceptions of key aspects of the whole-class discussion in a specific lesson. The survey was designed to take 2-3 minutes to complete and is administered at the end of a whole class discussion, or at the end of a lesson.

The data provided by the practical measures are **intended to support improvement in teaching and in professional learning experiences (e.g., one-on-one coaching cycles, teacher collaborative time)**. Specifically, these measures are **intended to a) support teacher inquiry in the context of professional learning about aspects of teaching mathematics that research suggests matter for students' learning; b) support instructional leaders (e.g., mathematics coaches, district math leaders) to make decisions about how to adjust the support they offer to teachers; and c) to support all users to know if intentional changes to their practice are, indeed, resulting in improvements.**

Recommended Conditions for Administering the Classroom Practical Measures

It is **never appropriate** to use these practical measures to evaluate the quality of instruction, or teachers, or schools for accountability purposes. Doing so is counter to the goal of using the measures to inquire into and improve teaching. It is likely that if the measures are used for accountability reasons, teachers may feel pressure to suggest that students answer the questions in specific ways, which would undercut the intended purpose of using the measure, and compromise the validity of the data.

While we continue to gather information about the use of our measures in different contexts, we cannot anticipate all of the possible uses for our measures in your particular context. We recommend these minimal conditions for the use of our practical measures. We also recommend that you engage in an ongoing examination of the appropriateness of the measures within your context.

We recommend that the measures **should** be administered under the following conditions:

District and/or School Context

1. **The use of the measures should explicitly link to a plan for instructional improvement in mathematics.** Administering the measures only makes sense if there is a concerted plan for supporting the improvement of mathematics teaching, if there is a shared understanding of what counts as high-quality mathematics teaching (and thus what counts as improvement in teachers' practice) and if **ongoing support is provided for teachers to improve the quality of mathematics teaching and learning.** These measures will be most helpful to teachers when there are **district- and/or school-level leaders who have expertise** in supporting the improvement of mathematics teaching, **and who have time available to plan and facilitate** professional learning.
2. While individual teachers may find the resulting data useful on their own, **the measures are designed to be integrated in ongoing coaching, professional learning communities, or other professional learning initiatives. The data will be most useful to teachers when they have ongoing, scaffolded opportunities to make sense of students' responses.** For example, coaches may find value in administering the measures as part of one-on-one coaching cycles, so that the resulting data (together with other data, like student work samples) can be used to identify and negotiate improvement goals with individual teachers, to inquire about the impact of current practice on students' learning, and to assess whether subsequent changes in instruction represent improvements. As another example, a teacher leader or coach working with a grade-level team of mathematics teachers may find value in administering the measures when teachers implement a lesson that they co-planned as a team. The team can then use students' responses as one source of evidence to inquire into how the instructional

decisions they made impacted students' learning. As a third example, district leaders may want to ask teachers to administer the student surveys in order to inform the focus of upcoming professional development.

Classroom Context

1. Teachers who administer the measures should have interest in learning about their students' perspectives on a lesson.
2. A classroom culture should be established such that students feel their perceptions are valued. Although rare, we have experienced cases in which students did not perceive that their teachers were genuinely interested in their experiences and therefore did not provide truthful responses.

Issues of Data Analysis and Aggregation in Relation to the Focus of Your Instructional Improvement Work

You may have specific questions about the classroom measures given the focus of your instructional improvement work:

1. How often should I administer the classroom measure?
2. Should I use student responses to assess the progress of individual students?
3. Should I disaggregate student responses by student demographics?
4. Should I aggregate student responses across the same grade level? A school? A district?

Responses to these questions depend on your ongoing examination of the appropriateness of the measures within your context. Below, we provide guidance on each of these questions, based on the initial design of the measures, as well as our ongoing examinations of the use of the measures in the context of improvement initiatives in our partner districts.

1. How often should I administer the classroom measure?

How often you administer the classroom measure(s) should be tied to the focus of your instructional improvement work.

For example, in one partner district, the classroom measures were **administered as part of ongoing coaching cycles, in which coaches and their partner teachers would co-plan an upcoming lesson, teach the lesson, and then debrief.** As part of the planning process, each coach-teacher pair focused on a specific aspect of instruction that they had previously identified as an area for improvement. **The teachers and coaches found it useful to administer a survey in each co-planned lesson so that they could assess whether the instructional changes they had made were in fact improvements.** In the debrief of the coaching cycle, the teachers and coaches analyzed students' responses. If there was evidence that the teacher had made progress to the previously identified area for improvement, then the coach and teacher identified a new aspect of instruction on which to focus. The teachers and coaches **engaged in this process on a monthly basis, as this provided the teacher with enough time to test out adjustments in instruction that might constitute improvements.**

2. Should I use student responses to assess the progress of individual students?

No, we do not recommend that you use the student responses to assess the progress of individual students. The classroom measures are designed to be aggregated at the level of a

classroom. We also have concerns about students' anonymity and how that might affect students' responses to survey items.

3. Should I disaggregate student responses by student demographics?

It is possible to disaggregate your student responses but **only if it is tied to the focus of your instructional improvement work, you have a sufficient sample size (we recommend 20 students in a given category), and you take great care in framing how the disaggregated results will be analyzed.**

For example, in one partner district, a math department (seven teachers) had engaged in substantial professional development together focused on improving opportunities for students to engage in whole class discussions of their solutions. Instructional leaders and teachers were interested in exploring whether different groups of students were being **provided equitable opportunities to engage in class discussion**. As a result, after a professional development session focused on improving discussions, grade-level teams each taught the same lesson (organized around a high-rigor task), and each teacher administered the whole class discussion survey (144 total survey responses across the 7 classrooms). The survey was administered electronically and automatically collected student IDs (i.e., students did not enter their names into the surveys). Instructional leaders then matched the student IDs to demographic information, and were able to disaggregate data by the student demographic categories that were of interest to the department (gender, racial, and ethnic background, English language learner status, students who received special education services). Instructional leaders did not share data on any group of students for which there were less than 20 responses across the sample, for both issues of anonymity and concerns that the resulting inferences may not be valid for such a small number of students (e.g., there were less than 20 students who identified as Native American in the school, and so data corresponding to that category was not shared). The instructional leaders also took great care when sharing the data with teachers (at the level of a school, not by individual teacher's classroom) and explicitly framed this analysis as an opportunity to identify school-level goals for addressing issues of equity -- and emphasized that the team should be careful to interpret these data in terms of students' instructional opportunities, not in terms of student deficits.

4. Should I aggregate student responses across the same grade level? Across a school? A district?

It is possible to aggregate student responses across classrooms, a school, and a district. **However, it should also be done in relation to the focus of your instructional improvement work, and with careful deliberation about what makes sense to aggregate, and what does not.**

For example, in one partner district, District Math Specialists aimed to improve the quality of the instructional materials they were developing for teachers. In particular, they aimed to increase the rigor of the instructional tasks and to increase opportunities for students to engage in both small groups and the whole class discussions in which they shared their reasoning. To do so,

the District Math Specialists assembled teams of teachers to write lessons and units (what they referred to as Curriculum Guide Writers), and they recruited teams of teachers to pilot the new lessons (who they referred to as Early Implementers). As part of piloting the new lessons, Early Implementers were asked to administer the classroom measures of small-group and whole-class discussions in particular lessons. Members of the PMRR team then worked with District Math Specialists to aggregate data so that they and the Curriculum Guide Writers could use the resulting data to analyze the impact of the materials they had prepared on classroom discourse and thus improve specific lessons. From this perspective, it made sense to aggregate data across teachers in the same grade level from different schools who were teaching the same lesson (e.g., 7th grade Unit 1 Lesson 3). **However, before aggregating the data, District Math Specialists examined the data separately for each teacher to check if data from any particular classroom was markedly different or unique from others.**

Technical Suggestions / Frequently Asked Questions

Below you'll find brief answers to some technical and frequently asked questions about the use of our classroom measures: rigor of the task (RIGOR), Whole-Class Discussion (WCD), Small Group Discussion (SGD), launch of the task (LAUNCH).

[Preparing for Administering the Classroom Measures](#)

[During the Administration of the Classroom Measures](#)

[After Administration of the Classroom Measures](#)

Preparing for Administering the Classroom Measures

1. When should I administer the classroom measures?

We recommend that the RIGOR measure be used to guide the selection of the mathematics task(s).

We recommend that the LAUNCH measure is administered immediately after the teacher launches the task. It is not recommended to administer the LAUNCH at the end of the lesson or the next day.

We recommend that the WCD and SGD measures are administered at the end of class when there was a whole class discussion or small group discussion. We do not recommend administering these measures the next day. We have evidence that some students have difficulty in recalling the lesson from the previous day. If the whole class discussion occurs in the middle of a class period, teachers may decide to administer it immediately after or at the end of the lesson. However, we recommend that teachers prompt students to think back to the whole class discussion.

2. What format should I administer the classroom measures (paper/pencil or online)?

There are advantages and disadvantages to administering electronic or paper/pencil versions of the classroom measures. Your decision will be based on what resources are available.

If students have access to a portable electronic device (such as a Chromebook or iPad) and internet access, the online version of the classroom measures are ideal. One advantage of the using online version is that students are prompted to complete all items before submitting the survey; and students are NOT allowed to select multiple response options for a particular item.

Another advantage is that representations of student responses can be viewed nearly immediately after the measure is completed.

If students do not have easy access to a personal device, a paper/pencil version of the measure is available. Advantage is that this may take less time for students to complete because they do not need to login to their electronic device. Disadvantages include students skipping items or marking more than one response per item. In addition, someone will need to enter the data from the paper copies to an electronic format to create the visual representations. The time and resources to do this in a consistent way needs to be considered.

3. How many students should complete the classroom measure for each administration?

Given that the classroom measures were designed to be aggregated at the classroom level, we recommend as many students as possible complete the classroom measure at each administration. For comparability across administrations, we recommend that as many of the same students complete the classroom measure on each administration. For example, if there are 20 students in one section/period of your math class, we recommend that as many of those 20 students complete the classroom measure at each administration so that you can more confidently compare responses across different administrations.

4. Should the same students complete the survey on multiple administrations?

Yes. We recommend that as many of the same students complete the survey on multiple administrations. We realize that students may be absent or not available for all administrations of the survey, but try to gather student responses from as many of the same students on multiple administrations as possible. This will give you greater confidence in comparing student responses from one administration to another.

5. Do you recommend administering the classroom measure to students in different classes (such as students taught by the same teacher in different periods or sections)?

Yes. We recommend administering the classroom measure to multiple periods if it is tied to the focus of your instructional improvement work. For example, if you are working on improving the launch of rigorous tasks, you might administer the same task to multiple periods/sections. You might modify the ways in which the task is launched in different periods/sections and then compare student responses to the LAUNCH.

6. Do you recommend administering all of the items on the classroom measure? Is it ok to just administer a few of the items in which we are particularly interested in?

We recommend administering the entire survey because student responses to all of the items may help you to contextualize or interpret student responses to the items of particular interest. However, if you are working on a particular aspect of whole class discussions and only have time to administer the relevant items, you should do what makes sense for your improvement efforts.

7. To help me schedule the administration, how many minutes should I anticipate?

Please ensure at least 5 minutes at the end of class to administer the WCD or SGD; or 5 minutes immediately after the teacher has launched the task to administer the LAUNCH. It typically takes students 1-2 minutes to complete the classroom measures. However, plan for a few extra minutes given the use of online classroom measures (to allow for students to login to computers/iPads and navigate to the link to complete the appropriate classroom measure); or to hand out and collect paper copies of the classroom measure.

During the Administration of the Classroom Measures

1. How do I administer the classroom measure to my students?

[Here](#) is a suggested way to introduce the classroom measure to your students. We also created a [video](#) that might be helpful.

2. What should I do when students are completing the classroom measure?

We recommend that you be available to answer any questions students might have about the classroom measure. However, we also recommend that you do not view student responses to the classroom measure while they are completing the classroom measure or do not encourage students to respond to the measure in a particular way. We encourage teachers to remind students that the purpose of the classroom measure is to improve teaching and learning and not for evaluation or accountability purposes.

3. Can I answer questions from students about the classroom measures?

Yes. We have pilot tested the classroom measures in many different classrooms and conducted one-on-one interviews with students about their understanding of the classroom measure items. We hope that the items on the classroom measures make sense to your students. If not, please feel free to clarify or answer any questions students might have about the classroom measure items.

After Administering the Classroom Measures

1. What should I do to represent student responses after the classroom measure is administered?

There are several possibilities depending on how the use of the classroom measure is embedded in professional learning. One possibility is to use [Edsight](#). Depending on how student responses are collected, you might also use different programs to create representations. **We recommend you identify, test, and possibly revise procedures for administering and analyzing student responses to the classroom measure.**