MQI for MET

Key points and updates

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Center for Education Policy Research
HARVARD UNIVERSITY

MQI vs. MQI Lite

- In the MET study, you will be using the MQI Lite rubric rather than the regular MQI instrument.
  - Faster and more efficient
- The Lite contains only "overall" codes for each dimension
  - Richness of the Mathematics
  - Working with Students and Mathematics
  - Errors and Imprecision
  - Student Participation in Meaning-Making and Reasoning
  - Classroom Work is Connected to Mathematics
  - Explicitness and Thoroughness in Presentation of the Content

MQI vs. MQI Lite

- For each 7.5-minute segment, rate as you normally would for the “overall” dimension
  - Example: Richness
    - As video plays, keep track of instances of multiple methods, explanations, etc. by using the “comment” feature in the video scoring software application.
    - But you will only be asked to rate the overall richness of the segment. You will not give separate scores for explanations, multiple methods, etc.

Assignment of raters to groups of scales

- As an MET rater, you will be responsible for giving scores for a subset of the MQI dimensions
- You will be assigned to one of the following groups of scales (i.e. groups of dimensions):
  - Group of scales 1
    - Errors and Imprecision
    - Classroom Work is Connected to Mathematics
    - Explicitness and Thoroughness in the Presentation of Content (Algebra 1 only)
  - Group of scales 2
    - Richness of the Mathematics
    - Working with Students and Mathematics
    - Student Participation in Meaning-Making and Reasoning

IMPORTANT: IN ADDITION TO YOUR ASSIGNED GROUP OF SCALES, ALL RATERS WILL GIVE SCORES FOR OVERALL MQI AND MKT

Scoring Overall MQI and MKT for the Lesson

- Assign Whole-Lesson MQI and Lesson-Based Guess at MKT scores as described in the MQI Lite rubric.
- Base your ratings on the teacher's performance on all dimensions of the MQI.
  - Not just performance on the group of scales you have been assigned.
  - E.g., if you are assigned to Errors (etc.), you will also need to consider Richness, Working with Students and Mathematics, and SPMMR in making your assessment of overall MQI and MKT.
- This means thinking back to the dimensions in the group of scales not covered.
  - Factor that into your response.
- If you are in doubt, use the "information" rollover buttons in the scoring software for overall MQI and MKT provide score point guidance.

Scoring the Explicitness and Thoroughness in the Presentation of Content Code

- You will be asked to judge whether the content is Algebra 1 or not
- Use this code only for Algebra 1 lessons
  - 9th grade: Almost certain to be Algebra 1
  - 8th grade: Could be Algebra 1 or general math
  - 7th grade and below: Do not use Explicitness & Thoroughness
- Some general rules of thumb for 8th grade:
  - If you see equations/expressions with variables and/or linear graphs with Cartesian coordinates, it's probably algebra 1.
  - Formulae using letters/variables (e.g. area = L x W) by themselves do not indicate Algebra 1.
  - Exploration of linear growth patterns, without formal algebraic notation, is probably not Algebra 1.

Scoring the Explicitness and Thoroughness in the Presentation of Content Code

- When using Explicitness & Thoroughness code, do not give a score for the Classroom Work Connected to Mathematics.
- For whichever of these two codes you are not using on a particular lesson, score as n/a in the scoring software

Length of Video Segments

- You will only watch 30 minutes of each lesson.
- Our experience suggests that in most cases, lesson quality does not change much after this time.
- The 30-minute video consists of four 7.5-minute segments. Score each segment separately, assigning a score for each MQI dimension you have been assigned as well as lesson-level scores for Whole-Lesson MQI and Lesson-Based Guess at MKT.

Lesson-Level Scores

- After watching the 30-minute video, you will provide a "lesson-level" score for each of the MQI dimensions in your Group of Scales in addition to scoring the overall MQI and MKT.
- These "lesson-level" scores represent your judgment of the overall quality of the 30-minute segment.
- The score points for these "lesson-level" codes are defined slightly differently than 7.5-minute score points.
  - An overall judgment of the quality of the 30-minute segment as a whole
- The document containing these 30-minute codes is attached to the module (click the attachments button in the top right corner).

Lesson-Level Scores: Errors and Imprecision

- Main differences from segment-level codes:
  - Low score can be given for a 30-minute segment containing a few minor errors
  - High score requires persistent errors and/or lack of clarity that distort mathematical content

Lesson Errors and Imprecision		
This code is an overall estimate of the errors and imprecision across the viewed sample. NOTE: In the segment-level scoring, a segment with a minor error would receive at least a mid score. In this version of the code, a low score now allows for the possibility of very minor errors.		
Low	Mid	High
Lesson is clean of all but a handful of minor errors (typically language imprecision or an incorrectly solved exercise). These errors should be infrequent.	Lesson features consistent minor or occasional serious errors; and/or may lack clarity for portions of the lesson. Consequently, important elements of mathematical content are not totally clear, but central ideas or procedures are nevertheless understandable.	Lesson features persistent serious errors and/or lacks clarity for major portions of the lesson. Some or all important mathematical content is distorted, including central ideas or procedures.

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Lesson-Level Scores: Classroom Work is Connected to Mathematics

- Main differences from segment-level codes:
  - Low score means that over half the time is spent on activities NOT connected to mathematics
  - High score means that at least 90% of the time is spent on activities that are connected to mathematics

Lesson Classroom Work is Connected to Mathematics		
Low	Mid	High
Majority (50% or more) of observation is spent on non-mathematical activities (e.g., classroom management, cutting and pasting).	Observation includes significant time (roughly 10-40%) spent on non-mathematical activities.	Observation includes very little time spent on non-mathematical activities (10% or less).

Lesson-Level Scores: Working with Students and Mathematics

- Main differences from segment-level codes:
  - When high score is based on teacher's response to student productions, it represents consistent use of those productions in instruction, throughout the 30-minute segment
  - When high score is based on teachers' response to student error, they must be conceptual remediation of errors

Lesson Working with Students and Mathematics		
This code is an overall estimate of the teachers' interactions with the students around the content.		
Low	Mid	High
Few substantive interactions between teacher and students. Errors may occur but teacher addresses briefly and procedurally. OR Substantive student mathematical productions or errors do occur, but teacher usually does not respond to or use those productions. OR Teacher responses to student productions lead the lesson off-track.	Some conceptual remediation of errors and/or use of student productions. OR Extended and detailed procedural remediation throughout lesson.	Strong and significant conceptual remediation of errors and/or consistent use of student productions.

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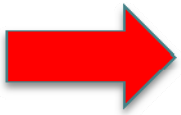
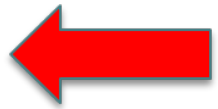
Lesson-Level Scores: Richness of the Mathematics

- Main differences from segment-level codes:
  - Low score may represent a segment that includes a few rich elements
  - High score represents consistent use of rich elements in an integrated way, leading to a coherent focus on meaning-making and/or practices

Lesson Richness of the Mathematics		
This code captures the depth of the mathematics offered to students. In all cases, ignore incorrect elements of richness in assigning a score.		
Low	Mid	High
Elements of rich mathematics are not present or only minimally present. May be an occasional explanation, connection, or multiple methods, but mathematical meaning is not focus of lesson.	Elements of rich mathematics are present in moderate quantity. Mathematical meaning is somewhat a focus of lesson. This may include many instances of "local" meaning or several rich elements (e.g., multiple methods and links) used individually or without consistent contribution to development of meaning or practices.	Elements of rich mathematics are consistently present, with *coherent* focus on mathematical meaning and/or practices throughout the lesson.





Lesson-Level Scores:
Student Participation in Meaning-Making and Reasoning

- Main differences from segment-level codes:
  - Similarly to some of the other codes for 30-minute segments, a high score here indicates *consistent* student participation in meaning-making and reasoning or extended student work on a challenging task.
  - A lesson with a few, limited examples of SPMMR can be rated low

Lesson Student Participation in Meaning-Making and Reasoning		
This code attempts to capture evidence of students' involvement in "doing" mathematics and the extent to which students participate in and contribute to meaning-making and reasoning. • During ***active instruction segments***, this mainly occurs through student mathematical statements: reasoning, explanations, question-asking. • During ***small group/partner/individual work time***, this mainly occurs through work on a non-routine task.		
Low	Mid	High
There are only a few or no examples of student participation in meaning-making and reasoning. Tasks are largely procedural in nature. Also score as low if there are unproductive explorations in which *the majority* of the students are off-track, mathematically.	There are several examples of student explanations and/or mathematical questioning and reasoning. AND/OR Students engage in a task with a moderate level of cognitive activation. May also include tasks with variable enactment (both high and low during observation).	Students participate by contributing consistently to meaning-making and reasoning. Such participation is a significant feature of the lesson, with many student contributions and/or extended work on a challenging task.

Lesson-Level Scores:
Explicitness and Thoroughness in Presentation of the Content

- Main differences from segment-level codes:
  - A lesson with some brief or infrequent high elements is rated mid; if such elements are sustained and/or frequent, the lesson is rated high

Lesson Explicitness and Thoroughness in Presentation of the Content		
This code indicates how explicit, complete, detailed, and thorough the teacher's (or a student's) presentation of the content is when outlining or describing mathematical procedures, describing the steps of a procedure used to solve problems, describing mathematical properties or providing mathematical definitions. **Only use for Algebra lessons.**		
Low	Mid	High
There are no examples of presentation of procedures, properties or definitions. OR The teacher's presentation of the content is poor, as indicated by the omission of critical steps/pieces of content, incorrect content, incomplete presentation of content, or unclear presentation of content.	The presentation of the content is acceptable and mostly clear, but not exceptionally explicit, detailed or thorough. OR Mathematical content may be largely well presented, but the lesson includes some "sloppy" presentation of the content (high and low elements). OR It meets some of the criteria for high but only briefly and/or infrequently.	The presentation of the content is not only clear, but also exceptionally *explicit*, *detailed,* and *thorough*. Presentation includes some combination of careful and systematic organization, emphasis on key pieces or key decision points, emphasis on meta-features, and generalization beyond specific problems. Occurs more often than briefly/infrequently.

When issues arise in assigning a fair score…

- In some cases, the 30 minutes you see will not be an accurate representation of the quality of the whole lesson:
  - When first 20 minutes are spent in a quiz or similar non-interactive activity.
  - When camera was turned on too long before start of official math lesson.
  - When you feel that you would need to see the end of the lesson to properly evaluate it.
    - E.g. "Reform" instruction in which students spend 20-30 minutes working on a challenging or complex task, with the assumption that there will be some sort of wrap-up discussion in which the big ideas are articulated. The quality of this sort of lesson depends strongly on what (if anything) happens at the end of the lesson.
- <u>In these cases you will need to defer the video, and request that scoring leader view the whole recording.</u>
- Use the "defer" button and enter the reason for deferral.
  - No more than 5% of lessons you view should be deferred because the end of the lesson is critical for evaluation.

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When you are ready please move on to the post-training questionnaire and the certification exam.

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