



Format and Mode of Instruction

MQI Plus



National Center for
Teacher Effectiveness



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Format and Mode of Instruction

- This module describes codes related to two aspects of mathematics instruction:
 - Format of the Segment
 - Active Instruction
 - Small Group/Partner/Individual Work
 - Mode of Instruction
 - Direct Instruction
 - Whole-Class Discussion
 - Working on Applied Problems





Format of the Segment

- *Definition:* This code records the format in which mathematics instruction takes place
- Active instruction
 - Teacher leads the whole class
 - Focus may be on teacher talking, demonstrating, questioning, etc.
 - Or teacher may be facilitating discussion among students
- Small Group/Partner/Individual Work
 - Students work individually or with each other; e.g., practicing a procedure, working on an extended problem solving activity
 - Teacher may circulate, checking work or helping individual students
 - Or teacher may not interact with students during this time (e.g., watching silently, grading papers)





Format of the Segment

- Recording the format of the segment
 - Active Instruction
 - Small Group/Partner/Individual Work
 - Both
 - Record as both when each format occurs for at least 1 minute.
- If class splits into two or more groups, record all applicable formats.





Format of the Segment

- *Notes:*
 - During Small Group/Partner/Individual Work time, if the teacher addresses the whole class:
 - Record **only Small Group/Partner/Individual Work** if teacher says a sentence or two without interrupting the flow of independent work
 - Record **Both** if the teacher calls for/gets everyone's attention (students stop working to listen) and then active instruction occurs for more than 1 minute
 - Active Instruction may include brief interludes in which students solve problems independently:
 - Record **Both** if there is at least one instance of independent work that lasts for 1 minute or longer
 - Record **only Active Instruction** if the interludes of independent work are each shorter than 1 minute (even if they might cumulatively add up to more than 1 minute)





Mode of Instruction

- *Definition:* Used to indicate whether certain instructional methods are used in a segment. Three possible modes of instruction are considered:
 - Direct instruction
 - Whole-class discussion
 - Working on applied problems





Direct Instruction

- *Definition:* Teacher leads the presentation of mathematical content
- *Examples:*
 - Teacher presenting new material
 - Going over homework or other problems, reviewing, launching a task
 - Inquiry-Response-Evaluation (IRE) type exchanges
 - During small group/individual work time: teacher remediating, re-teaching, or walking through problems with one or a few students





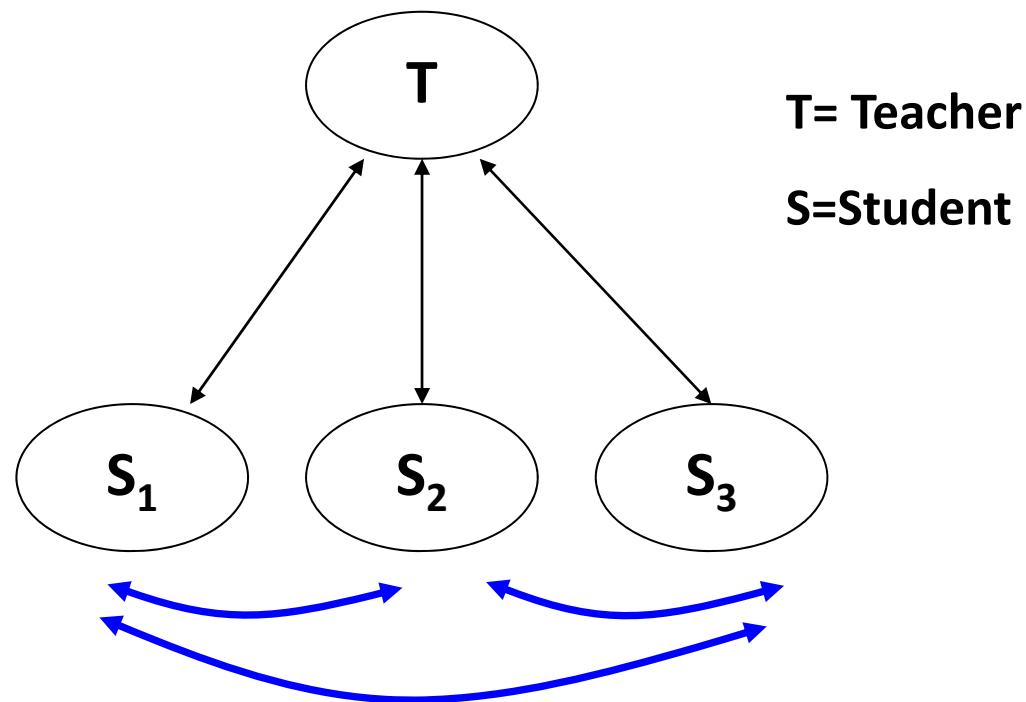
Whole-Class Discussion

- *Definition:* Students comment on *each other's* contributions; student ideas drive the conversation
 - May be teacher-facilitated, e.g., “Johanna, what do you think of Denise’s comment?”
 - Or student-student
- *Distinguish from:*
 - Inquiry-Response-Evaluation type exchanges
 - Students speaking at length (e.g. presenting a solution at the board), but only interacting with the teacher





Whole-Class Discussion





Working on Applied Problems

- *Definition:* This code captures whether the teacher and/or students work on contextualized problems
- *Examples:*
 - Short word problems that take a moment to finish
 - Longer investigations that may take a class period
- Key feature: contextualized
- *Non-Examples:*
 - Mentioning a past contextualized problem but not working on it
 - Story problems used to illustrate a situation, but that are not actively worked on during the segment.





Mode of Instruction

- Recording the mode of instruction:
 - Record separately whether each instructional mode occurs for
 - **None** of the segment
 - **Some** of the segment
 - **Most/All** of the segment
 - Judge based on the amount of time spent in that instructional mode, or if one format is the *key* feature of instruction in that segment.





Mode of Instruction

- *Notes:*
 - The three modes are not mutually exclusive
 - A single lesson segment may contain multiple modes of instruction
 - E.g., a whole-class discussion of a real-world problem could conceivably be scored as:
 - Direct instruction: **None**
 - Whole-class discussion: **Most/All**
 - Applied problems: **Most/All**





Mode of Instruction

- *Notes:*
 - These modes are not exhaustive: some lesson segments may receive a **none** for each instructional mode.
 - *Examples:*
 - Extended passing out of papers with no teacher mathematical talk and no student quiet work
 - PA announcements





General Notes

- What's the difference between Active Instruction and Direct Instruction?
 - Active Instruction: Is the class working as one group, led/facilitated by the teacher?
 - As opposed to students working in small groups or alone, even if teacher is interacting with them.
 - Direct Instruction: Is the teacher doing the talking and controlling the direction of the conversation?
 - As opposed to students exchanging ideas and driving the content of the conversation, even if teacher is facilitating.





General Notes

- Active Instruction and Direct Instruction can occur together or separately:
 - Teacher presents content at board, with little student input:
 - Active Instruction **and** Direct Instruction
 - A whole-class discussion facilitated by the teacher, in which students drive the content of the conversation:
 - Active Instruction **but not** Direct Instruction
 - Teacher working with a single student during seatwork time, walking through the steps of a procedure with little student input:
 - Direct Instruction, **but not** Active Instruction





General Notes

- What if a student is presenting a solution at the board or explaining something at length to the class?
 - Format of the Segment:
 - Count as Active Instruction if the teacher is involved in any way
 - If the teacher is not participating or if a student is writing on the board while the rest of the students work independently, do not count as Active Instruction
 - Mode of Instruction:
 - If teacher is not doing much of the talking, it does not count as Direct Instruction
 - If only one student is talking, or other students make only brief/simple comments, it does not count as Whole-Class Discussion





Examples

- Noel: Right Angles
- Wilma: Start of Class
- Karen: Tourist Problem B
- Mercedes: Integer Subtraction





Noel: Right Angles

- Length of clip: 4:12
- 3rd grade
- In a previous lesson, the class discussed different cube attributes
- In this lesson, a student makes a conjecture: “a cube has 24 angles”





Noel: Right Angles: Video



Video Placeholder
Your video will display here.



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How would you score this clip for:

- Format of the Segment
- Mode of Instruction:
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 - Working on Applied Problems





Noel: Right Angles: Answers

- Format of the Segment: **Active Instruction**
 - The teacher is leading the whole class in this discussion; students never work independently.
- Direct Instruction: **Some**
 - She does some directing of the inquiry in the beginning and direct teaching at the end
- Whole-Class Discussion: **Most/All**
 - Student-student discussion occurs for majority of segment
- Working on Applied Problems: **None**





Wilma: Start of Class

- Length of clip: 3:22
- 7th grade
- The clip begins at the start of class
- There are some warm-up problems posted on the board involving operations with decimals and unit rates





Wilma: Start of Class: Video



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How would you score this clip for:

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Wilma: Start of Class: Answers

- Format of the Segment: **Small Group/Partner/Individual Work**
 - Students are working on the warm-up problems at their desks
- Direct Instruction: **None**
 - The teacher is not leading the presentation of mathematical material
- Whole-Class Discussion: **None**
 - No student ideas are shared with the class
- Working on Applied Problems: **Some**
 - Two of the warm-up problems are unit rate problems





Karen: Tourist Problem B

- Length of clip: 3:08
- 5th grade
- Students have worked on this problem for about 30 minutes at their desks: “There are 54 tourists in a group. There are twice as many women as men, and there are three times as many children as men. How many women, men, and children are there?”





Karen: Tourist Problem B: Video



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How would you score this clip for:

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Karen: Tourist Problem B: Answers

- Format of the Segment: **Active Instruction**
 - A student presentation to the class where the teacher is at least somewhat involved
- Direct Instruction: **Some**
 - Through directions to the student, the teacher is facilitating the presentation of mathematical content
- Whole-Class Discussion: **None**
 - The students are not commenting on or discussing each others' ideas
- Working on Applied Problems: **Most/All**
 - The problem that the student solves represents an applied problem





Mercedes: Integer Subtraction

- Length of clip: 5:08
- 6th grade
- Connected Mathematics
- The class has been using colored cubes to perform integer operations
- At this point, students work on integer-operation tasks and the teacher circulates in the classrooms and provides support if needed





Mercedes: Integer Subtraction: Video



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How would you score this clip for:

- Format of the Segment
- Mode of Instruction:
 - Direct Instruction
 - Whole-Class Discussion
 - Working on Applied Problems





Mercedes: Integer Subtraction: Answers

- Format of the Segment: **Small Group/Partner/Individual Work**
- Direct Instruction: **Some**
 - Although it is small-group work time and students are participating in the conversation, teacher is driving the conversation and doing a lot of the talking
- Whole-Class Discussion: **None**
- Working on Applied Problems: **None**





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