Checking for Understanding Using Whiteboards

Great teachers know how much each student is learning "in the moment." Common prompts like "Any questions?" or "Does everybody understand?" are ineffective attempts to formatively assess students' knowledge and skills. When teachers effectively check for understanding (CFU) they gather real-time data about what students know and are able to do *and* immediately adjust the lesson.

Key Method

Whiteboards (sometimes called "slates") is a whole-class, visual method of checking for understanding. On the teacher's cue, each student holds up an individual whiteboard (or similar device) on which he or she has written a response to a question or prompt. Unlike other CFU methods, in which teachers make an inference about student learning from a sample of students, with whiteboards, the teacher visually records answers from the entire class. Generally, checking for understanding using Whiteboards is most effective when the responses are short so that the teacher can scan the responses from all students relatively quickly (e.g., the answer to a computation problem, a single word or short phrase, an arrow pointing to a specific part of a sketch).

Method Components

Three universal characteristics of effective CFUs

- ***What and when to CFU:*** The check for understanding comes at a critical moment in the lesson; the teacher is intentionally finding out about the "right stuff" at the "right time."
- ***Unbiased inference:*** The method allows the teacher to make an unbiased (or less biased) inference about the class's objective mastery of the lesson (through either individual assessment or representative sampling).
- ***Instructional Adjustment:*** The teacher leverages the CFU data in the moment to determine the next instructional move (e.g., continue with the lesson, pinpoint a particular misunderstanding, reteach the concept).

Three universal characteristics as they relate to Whiteboards

- Teachers use Whiteboards to check for understanding of *important content*.
    - For example, teachers check for understanding at key moments in the lesson that are revelatory of students' progress toward mastering the lesson objective.

- Teachers use Whiteboards to make less biased inferences about what students know and can do.
    - A: Teachers ensure that the use of Whiteboards produces *clear, visually scannable responses*.
        - For example: "Students, please work physics problem #3 on your individual whiteboards. Be sure to box your answers and make sure they are legible from the front of the room."
    - B: Teachers use strategies to *maximize the likelihood that each student's response is her own*.
        - For example, the teacher creates a culture in which students are sharing their own answers, not copying the answer from a neighbor's board.

    - Or, teachers can give a crisp in-cue that signals to students when they should raise their whiteboards. "On your boards, write the word in this sentence that conveys the author's sense of wonder. Show me your boards when I say 'three' . . . one, two, three."
  - C: Teachers *use follow-up questions* to probe the students' whiteboarded responses.
    - For example, teachers ask strategic questions of intentionally selected students to better understand why students answered they way that they did. "Most of the class drew graphs with slopes of zero between times C and D. There were a few of you who drew positive slopes in that same interval. Let me hear from someone who drew a positive slope. Why did you think the slope should be positive? . . . <wait time> . . . Jamal?"

- Teachers make *appropriate instructional adjustments* in light of the formative data gathered via the Whiteboards exercise.
    - For example, the teacher's next instructional move will be different if the class is evenly split between two answer choices than if only one or two students have the wrong answers.

Supporting Research

- Black, P., & Wiliam, D. (1998). Assessment and classroom learning. *Assessment in Education, 5*(1), 7–74. doi: 10.1080/0969595980050102
- Crooks, T. (1988). The impact of classroom evaluation practices on students. *Review of Educational Research, 58*(4), 438–481.
- Cazden, C. B. (1988). *Classroom Discourse: The Language of Teaching and Learning.* Portsmouth, NH: Heinemann.
- Fisher, D., & Frey, N. (2007.) *Checking for Understanding: Formative Assessment Techniques for Your Classroom.* Alexandria, VA: ASCD.
- Fuchs, L. S., & Fuchs, D. (1986). Effects of systematic formative evaluation: A meta-analysis. *Exceptional Children, 53*(3), 199–208.
- Popham, W. J. (2008). Formative assessment: Seven stepping stones to success. *Principal Leadership, 9*(1), 16.
- Wiliam, D. (2011). *Embedded Formative Assessment.* Bloomington, IN: Solution Tree Press.

Resources

- Lemov, D. (2010). *Teach Like a Champion.* San Francisco, CA: Jossey-Bass. 88–92.
- Saphier, J., Haley-Speca, M., & Gower, R. (2008). *The Skillful Teacher: Building Your Teaching Skills.* Acton: Research for Better Teaching. 194.

Submission Guidelines & Evaluation Criteria

Following are the items you must submit to earn this micro-credential and the criteria by which they will be evaluated. To earn the micro-credential, you must receive passing scores for Part 1 and a "Proficient" or "Exemplary" for each descriptor in the Part 2 rubric.

Part 1. Overview questions

- **Lesson Objectives**: List your objective(s) for the lesson where you used Whiteboards to check for understanding.
  - **Passing**: The teacher lists the lesson objective(s) for a single class period. To pass, the lesson objective(s) must be specific, measurable, student centered, aligned to rigorous content, and associated with a single day of instruction.

- **Lesson Description** (150-word limit): Describe this lesson generally and the specific activity or activities in which you will be using Whiteboards to check for understanding.
  - **Passing**: The teacher describes in 150 words or fewer the general arc of the lesson and the specific activity or activities in which the checks for understanding will be used. A passing description will give a clear sense of the learning sequences that will be seen on the video.

- **OPTIONAL Teaching Context** (100-word limit): Please describe any other important context that an external observer would need to understand this lesson or your particular teaching context.
  - **Passing:** The teacher provides additional information that will help the observer better understand the teacher's context. This is an optional question; a teacher may elect to leave it unanswered.

Part 2. Evidence/artifacts

To earn the Checking For Understanding Using Whiteboards micro-credential, you must submit videos showing two distinct checks for understanding using Whiteboards and provide an analysis of each clip. Each artifact will be assessed according to a four-point rubric. To earn this micro-credential, you must score at least a "3" or "Proficient" for each descriptor.

Submission Expectations

A: Check For Understanding Clips:

- Show **two** distinct checking for understanding sequences using Whiteboards; please include the timestamp for each sequence (e.g., 0:00–2:45) in your response.
  - Each sequence should show the lead-up to the CFU using Whiteboards, the use of Whiteboards, and adjustment of instruction (or not) based on the data provided by the Whiteboards.
  - The camera should be positioned so that it is possible to see what all (or many) of the students have written on their whiteboards
  - Multiple clips can be edited together; the video need not (and probably should not) be a continuous clip.
  - The teacher and students should be audible and/or subtitled.
  - The entire video submission should be less than eight minutes.

B: Video Analysis:

- Describe each CFU sequence. In each description, please answer the following questions (100-word limit for each clip):
  - Why did you choose to check for understanding at the selected moment of the lesson? That is, given the objective(s), why CFU here?
  - How did your use of Whiteboards allow you to make a less biased inference about student understanding?
  - Following the check for understanding, what was your next instructional move? How did the CFU data inform your decision?

Please note: Across your artifacts, you should protect the identity of your students (e.g., redact names, do not use first and last names).

	Attempting (1)	Foundational (2)	Proficient (3)	Exemplary (4)

	Attempting (1)	Foundational (2)	Proficient (3)	Exemplary (4)
WHITEBOARDS 1: The checks for understanding are related to the lesson objective.	WHAT TO CFU: There is questionable or no alignment to the lesson objective for at least one of the CFUs.	WHAT TO CFU: While the CFUs seem related to the objective, there is some question in at least one of the CFUs how it directly relates to the lesson objective.	WHAT TO CFU: All CFUs are related to the lesson objective.	WHAT TO CFU: All CFUs are unambiguously related to the lesson objective and it is clear that they get at the nuances associated with mastering the objective.
WHITEBOARDS 2: The teacher makes a valid inference about student understanding by ensuring the whiteboarded responses are clear and visually scannable.	CLEAR, SCANNABLE RESPONSES: Taken together, the responses are generally unclear and/or are not easily scannable and the teacher cannot quickly make an inference about students' understanding.	CLEAR, SCANNABLE RESPONSES: The responses are generally clear and visually scannable; however, in one example the teacher cannot quickly make an inference about students' understanding because many responses lack clarity and/or are not easily scannable.	CLEAR, SCANNABLE RESPONSES: In both examples, the responses are clear and visually scannable so that the teacher can quickly make an inference about students' understanding.	CLEAR, SCANNABLE RESPONSES: In both examples the responses are not only clear and visually scannable so that the teacher can quickly make an inference about students' understanding, but the teacher also shows two distinct ways to use Whiteboards to CFU, thus highlighting proficiency in this technique.
WHITEBOARDS 3: The teacher makes a valid inference about student understanding by using strategies to maximize the likelihood that each student's response is his or her own.	OWN ANSWER: Across both examples, few students are whiteboarding in a way that helps to ensure that their answers are their own AND/OR many students are not participating at all.	OWN ANSWER: In both examples, most students are whiteboarding in a way that helps to ensure that their answers are their own; however, some students are responding in a way that would allow for others to copy their answers AND/OR some students are not participating at all.	OWN ANSWER: In both examples, nearly all students are whiteboarding in a way that helps to ensure that their answers are their own.	OWN ANSWER: In both examples, all students are whiteboarding in a way that helps to ensure that their answers are their own.
WHITEBOARDS 4: The teacher makes a valid inference about student understanding by asking follow-up questions to probe the students' whiteboarded responses.	FOLLOW-UP Qs: In at least one of the examples, following the use of Whiteboards, the teacher does not ask probing questions to better understand students' responses.	FOLLOW-UP Qs: Although the teacher asks at least one question in both examples, it is unclear that the particular question(s) and/or student response(s) will help the teacher to better understand students' whiteboarded responses.	FOLLOW-UP Qs: In both examples, following the use of Whiteboards, the teacher asks at least one probing question to better understand students' responses.	FOLLOW-UP Qs: In both examples, following the use of Whiteboards, the teacher asks a set of strategically selected probing questions to better understand students' responses and deepen understanding.

	Attempting (1)	Foundational (2)	Proficient (3)	Exemplary (4)
WHITEBOARDS 5: **Based on CFU data, the teacher makes an appropriate decision about the next instructional step.**	INSTRUCTIONAL ADJUSTMENT: Taken as a whole, the teacher's next instructional decisions seem largely inappropriate given the CFU data.	INSTRUCTIONAL ADJUSTMENT: Taken as a whole, the teacher's next instructional decisions seem largely appropriate given the CFU data, but there are some questions about the appropriateness of at least one of the decisions.	INSTRUCTIONAL ADJUSTMENT: Following each of the CFUs, the teacher makes seemingly appropriate next instructional decisions.	INSTRUCTIONAL ADJUSTMENT: Following each of the CFUs, the teacher makes unambiguously appropriate next instructional decisions grounded in the nuances of the CFU data.