

Indicator: # of teachers who demonstrate a minimum number of recognized critical thinking and STEM teaching skills (ED_MS_059)

EDUCATION SECTOR



PROJECT AREA: Math and Science

Type: Outcome

Unit of Measure: Teacher

Disaggregation: Sex: Male, Female

Outcome Measured: Teachers increase their capacity in critical thinking and STEM teaching skills**Precise definitions****Critical thinking and STEM teaching skills:** The Standardized Teacher Observation Checklist lists eight STEM instructional techniques and eight critical thinking teaching techniques that will be used for this measurement.**Minimum number of teaching practices:** Teachers must demonstrate at least

1. Three of the eight **STEM instructional techniques** listed in the Standardized Teacher Observation Checklist.
2. Three of the eight **critical thinking teaching techniques and practices**.

Data collection**Tool:** The Standardized Teacher Observation Checklist.**Frequency of data collection and tracking:****Time 1 (T1)—Beginning of school year (or intervention):** At the beginning of the school year (or intervention), PCVs will observe one math or science class for each teacher they expect to work with over the course of the school year. Record the teacher's name and number of demonstrated STEM and critical thinking teaching skills under the T1 score column in the Teacher Observation Score Tracking Sheet (below). If a teacher demonstrates at least three of the eight critical thinking skills AND at least three of the eight STEM teaching skills at T1, *do not* include this teacher in the measurements. This individual already meets the minimum number of STEM and critical thinking teaching skills and should *not be* further recorded on the tracking sheet.**Time 2 (T2)—End of school year:** At the end of the school year, PCVs will observe one math or science class for each teacher who meets the minimum requirements described below (see "Who to measure"). Record the teacher's T2 scores in the tracking sheet.**Time 3 (T3)—End of subsequent school year, if applicable:** Some teachers may not demonstrate the minimum number of critical thinking and STEM teaching skills after only one year of work with the Volunteer. If a teacher who continued to meet the minimum requirements below (see "Who to measure") did not demonstrate at least three of the eight STEM teaching skills and at least three of the eight critical thinking skills at T2, then the PCV will again observe the teacher's math or science class at the end of the subsequent school year. Record the teacher's T3 scores in the tracking sheet.**Who to measure:** For this outcome measurement, Volunteers should only include teachers they have worked with regularly throughout the school year on one or more of the following activities focused on increasing capacity in general, critical thinking, and/or STEM teaching skills:

1. Facilitate informal or formal communities of practice to share techniques for general, critical thinking, and/or STEM teaching skills
2. Engage in model teaching and/or peer observation with teachers
3. Co-plan and co-teach with teachers to improve general, critical thinking, and/or STEM teaching skills
4. Plan and (co-)facilitate teacher workshops on general, critical thinking, and/or STEM teaching skills
5. Work with teachers to design, adapt, and pilot learning materials



Reporting

Measuring progress toward the outcome, by sex: A teacher will be considered to have increased his/her capacity in critical thinking and STEM teaching skills if the teacher demonstrates at least three of the eight STEM teaching skills AND three of the eight critical thinking skills listed in the Standardized Teacher Observation Checklist at T2 or T3 (if applicable).

- For all teachers who demonstrated the minimum number of teaching skills at T2, place a Y in the cell that corresponds to the teacher’s sex in the first Teacher Observation Score Tracking Sheet (below).
- For all teachers who did not demonstrate the minimum number of teaching skills at T2, place an N in the cell that corresponds to the teacher’s sex.
- Record the sum of all Ys + Ns for each sex in the row titled “TOTAL REACHED” and the sum of Ys only for each sex in the row titled “TOTAL ACHIEVED.” Report both column totals in the VRF.
- If a teacher did not demonstrate the minimum number of teaching skills at T2, use the second tracking sheet with the T3 column to repeat the observation and reporting process for that teacher at the end of the subsequent school year.
- Record the sum of all Ys + Ns for each sex in the row titled “TOTAL REACHED” and the sum of Ys only for each sex in the row titled “TOTAL ACHIEVED.” Report both column totals in the VRF.

Note: Individual teachers may only be counted once as part of the “TOTAL ACHIEVED” in a Volunteer’s service for this indicator. If the same individual is eligible for measurement for another indicator, he/she may be counted for that indicator according to the guidelines in that indicator’s definition sheet.

How to report missing values: If a teacher does not have a score at T1, *do not* include this teacher in the measurement or on the tracking sheet. If a teacher has a score at T1 but does not have a score at T2, record NA in the final column and do not include this teacher in the totals reported in the VRF.

Teacher Observation Score Tracking Sheet

Outcome: Teachers increase their capacity in critical thinking and STEM teaching skills

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Teacher Name	T1		T2		F	M
	Date _____		Date _____			
	SCORE: Critical thinking teaching practices	SCORE: STEM instructional techniques	SCORE: Critical thinking teaching practices	SCORE: STEM instructional techniques	Did the teacher demonstrate at least 3 critical thinking teaching practices AND 3 STEM instructional techniques (Y or N)? Note: If the teacher was not assessed after T1, write NA	
TOTAL REACHED (all Ys + Ns) to report in VRF:						
TOTAL ACHIEVED (Ys only) to report in VRF:						

Teacher Observation Score Tracking Sheet

Outcome: Teachers increase their capacity in critical thinking and STEM teaching skills

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Teacher Name	T3		F	M
	Date _____ (only applicable if the teacher did not score the minimum or higher at T2)			
	SCORE: Critical thinking teaching practices	SCORE: STEM instructional techniques	Did the teacher demonstrate at least 3 critical thinking teaching practices AND 3 STEM instructional techniques (Y or N)? Note: If the teacher was not assessed after T1, write NA	
TOTAL REACHED (all Ys + Ns) to report in VRF:				
TOTAL ACHIEVED (Ys only) to report in VRF:				