Promoting Deeper Levels of Cognitive Complexity for the New AK Standards

Measures of Effective Teaching Project

Gathering Feedback for Teaching January 2012 by the Bill and Melinda Gates Foundation

Few national-level view of teaching practice since *A Place Called School* by John Goodlad in the early 1980s

The analysis in this report is based on the practice of 1,333 teachers. For this report, MET project raters scored 7,491 videos of lessons at least three times. (p. 6)

A Framework for Teaching by Charlotte Danielson was used

- **Where practice was strongest:** Lessons taught by MET project teachers scored highest on *managing student behavior, creating an environment of respect and rapport,* and *engaging students in learning.* The distribution of practice was nearly identical across these competencies, with **more than two-thirds of lesson segments scored as "proficient" or "distinguished**" (p.24).

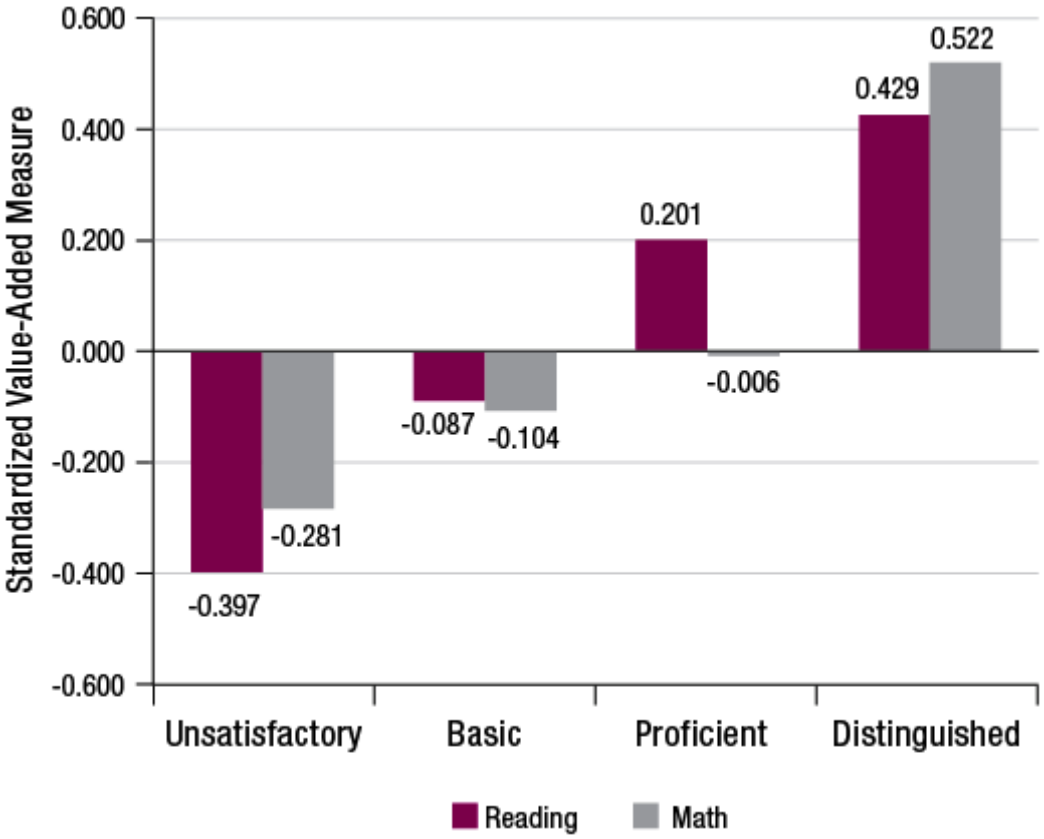
- **Where practice was weakest:** Lessons taught by MET project **teachers scored lowest on: *communicating with students, using questioning and discussion techniques,* and *using assessments in instruction.* Fewer than half of all lesson segments were rated "proficient" or better**. Of these competencies, *communicating with students* was least frequently observed, **with just 30 percent scoring "proficient" or better"** (p. 24).

- As **the new Common Core State Standards** and assessments are introduced, we will need a new set of instruments more closely aligned with those standards. For example**, the new literacy standards require more attention to reading strategies** (p. 33)

CONSORTIUM ON CHICAGO SCHOOL RESEARCH (CCSR) AT THE UNIVERSITY OF CHICAGO URBAN EDUCATION INSTITUTE

Rethinking Teacher Evaluation in Chicago: Lessons Learned from Classroom Observations, Principal-Teacher Conferences, and District Implementation
November 2011

There is a strong relationship between observation ratings and the Value-Added Measure (VAM)



Results:

• Ratings explained a significant portion of variation in VAM in reading and math
• Relationship stronger in reading than in math
• Teachers with high observation ratings had high VAMs (and vice-versa)
The Framework for Teaching (FFT) has Four Quality Levels

FFT Quality Level	Classroom Observers	Principals
Unsatisfactory	**2%**	**3%**
Basic	**67%**	**27%**
Proficient	**28%**	**53%**
Distinguished	**3%**	**17%**

Classroom Observers
Teachers Basic & Proficient (85%) Negligible Impact on Student Scores

Principals
Teachers Basic & Proficient (80%) Negligible Impact on Student Scores

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Fifteen Formative Questioning Strategies

1. **WAIT TIME VARIATIONS:** Give students time to think after you pose a question to the group. Research shows that giving students three to five seconds to process a question increases quality and quantity of responses dramatically.
2. **VOLLEYBALL, NOT PING-PONG:** Change the pattern of interaction from teacher-to-teacher to student-to-student.
3. **HANDS DOWN:** Students are told NOT to raise their hands when a question is asked. All students should be ready to answer a question, even if the response is "I don't know."
4. **THUMB SIGNALS:** Students are taught specific behavior expectations for thumb positions. Thumbs up, I understand; thumbs sideways, I'm not completely sure; thumbs down, I do not yet understand.
5. **RESPONSE CARDS:** Index cards, dry-erase boards, magnetic boards, or ABCDE cards simultaneously held up by all students in class to indicate their response to a question or problem presented by the teacher. Information is used by the teacher to adapt and organize the ensuing discussion or lesson.
6. **TRAFFIC LIGHTING:** Table tent, traffic cards, cups, or dots to indicate level of understanding or readiness of group.
7. **FACT FIRST QUESTIONING:** Moves student thinking beyond recall of information. State the fact and follow it with a "why" question: for example, "Glucose is a form of food for plants. Why is glucose considered a food for plants?"
8. **PASS THE QUESTION:** Provides an opportunity to collaborate with a partner and share in the thinking process.
9. **COMMIT AND TOSS:** Quick, anonymous way to get different ideas without individuals being identified as having the wrong answer. Students are given a question. After completing their response on a piece of scrap paper, they crumple the paper into a ball and, upon a signal from the teacher, toss the paper balls around the room to other students. Students share the response written on their "caught" paper rather than their own response.
10. **ODD ONE OUT:** Students choose which item from a list does not belong and justify their reason for selecting it: for example, "Length, volume, temperature, mass — which one is odd? Why is it the odd one out?"
11. **FRIENDLY TALK PROBES:** Two-tiered questioning with selected response and justification. Responses are posed as friends' responses. Students pick the friend they most agree with and explain why.
12. **FOUR CORNERS:** Used with selected-response questions to identify groups of students with similar responses.
13. **JUICY QUESTIONS:** Using Webb's Depth of Knowledge, design questions that elicit understanding. Always consider the level of the questions you are asking. If you ask recall-type questions, for example, expect discussions that lack some understanding of concepts.
14. **STICKY BARS:** Helps students recognize the range of ideas in the class. Sticky note responses are arranged as a bar graph.
15. **I USED TO THINK, BUT NOW I KNOW:** Asks students to compare verbally or in writing their ideas from the beginning of the lesson with their ideas after completing the lesson.

Name That Level

Refer to the Bloom's Taxonomy or Depth of Knowledge (DOK) chart to practice identifying the level of cognitive rigor these standards and learning targets can be assessed at. Compare your results with a partner and discuss.

Mathematics Standards	Learning Target	Level of Rigor
Students understand and compute the volumes and areas of simple objects.	*I can construct a cube and rectangular box from two-dimensional patterns and use these patterns to compute the surface area for these objects.*	
Students understand the place value of whole numbers and decimals to two decimal places.	*I can round two-place decimals to one decimal or the nearest whole number and judge the reasonableness of the rounded answer.*	
Students choose and use appropriate units and measurement tools to quantify the properties of objects.	*I can choose the appropriate tools and units (metric and U.S.) to estimate and measure the length, liquid volume, and weight/mass of given objects.*	
Students know the properties of, and compute with, rational numbers expressed in a variety of forms.	*I can differentiate between rational and irrational numbers.*	

English/Language Arts Standards	Learning Target	Level of Rigor
Reading Comprehension (Focus on Informational Materials): Students read and understand grade-level-appropriate informational text.	*I understand how text features (e.g., format, graphics, sequence, diagrams, illustrations, charts, maps) make information easier to understand.*	
Literary Response and Analysis: Students read and respond to literature and begin to find ways to clarify the ideas and make connections between literary works.	*I can describe the function and effect of common literary devices such as imagery, metaphor, and symbolism.*	
Writing Strategies: Students write clear, coherent, and focused essays.	*I can create multiple-paragraph narrative composition by* *1. establishing and developing a situation or plot,* *2. describing the setting, and* *3. presenting an ending.*	
Word Analysis, Fluency, and Systematic Vocabulary Development: Students use their knowledge of word origins and word relationships.	*I can use word origins to determine the meaning of unknown words.*	

Name That Level

Refer to the Bloom's Taxonomy or Depth of Knowledge (DOK) chart to practice identifying the level of cognitive rigor these standards and learning targets can be assessed at. Compare your results with a partner and discuss.

Social Studies Standards	Learning Target	Level of Rigor
Students analyze political and economic change in the sixteenth, seventeenth, and eighteenth centuries (the Age of Exploration, the Enlightenment, and the Age of Reason).	*I can analyze the major economic and social effects the exchange of plants, animals, technology, culture, and ideas had on Europe, Africa, Asia, and the Americas in the sixteenth, seventeenth, and eighteenth centuries.*	
Students analyze the geographic, political, economic, religious, and social structures of the early civilizations of Mesopotamia, Egypt, and Kush.	*I understand the relationship between religion and the social and political order in Mesopotamia and Egypt.*	
Students understand the course and consequences of the American Revolution.	*I can identify and map the major military battles, campaigns, and turning points of the Revolutionary War.*	
Students analyze the multiple causes, key events, and complex consequences of the Civil War.	*I can summarize the views and lives of leaders (e.g., Ulysses S. Grant, Jefferson Davis, Robert E. Lee) and soldiers on both sides of the war, including those of black soldiers and regiments.*	

Science Standards	Learning Target	Level of Rigor
Life Science: Organisms in ecosystems exchange energy and nutrients among themselves and with the environment.	*I can categorize populations of organisms by the functions they serve in an ecosystem.*	
Earth Science: Plate tectonics accounts for important features of Earth's surface and major geologic events.	*I can create a model to show how Earth is composed of several layers: a cold, brittle lithosphere; a hot, convective mantle; and a dense, metallic core.*	
Life History: Students know Earth processes today are similar to those that occurred in the past and slow geologic processes have large cumulative effects over long periods of time.	*I can explain significant developments and extinctions of plant and animal life on the geologic time scale.*	
Investigation and Experimentation: Scientific progress is made by asking meaningful questions and conducting careful investigations.	*I can select and use appropriate tools and technology (including calculators, computers, balances, spring scales, microscopes, and binoculars) to perform tests, collect data, and display data.*	