Nudging Learning Along

Margaret Heritage
Arizona Formative Assessment Summit
Phoenix, AZ
June 15, 2018
Overview

• Notice, Recognize, Respond
• A Lesson of Missed Opportunities
• Knowledge for Nudging
• “Reform” Teaching and Formative Assessment
Notice, Recognize, Respond
[Formative assessment] is a process used by teachers and students to notice, recognize, and respond to student learning in order to enhance that learning, during the learning (Bell & Cowie, 2001, p. 36).
Keeping Learning on Track to Intended Goals

How?
Evidence: Qualitative insights along the way
Respond to learning as it is unfolding

- Observation
- Dialogue
- Discussion
- Questioning
- Student work

(during learning)
Nudging Learning Along

Nudge

nəd/ (noun)

a light touch or gentle push
Responding to Evidence

“Reform” Teaching

Evidence → Nudging Learning Along
“Reform” Teaching and Formative Assessment
Traditional Lesson

Detailed, pre-planned lessons according to a fixed curriculum

Sequences of activities

“Remediation” of prescribed concepts
“Check for Understanding”

Got it. Didn’t Get It.  Reteach!
“Reform” Teaching

Base instruction on the lesson as it unfolds in the classroom, paying particular attention to the ideas that students raise

Involves:

• Guided participation

• Scaffolded assistance

• Apprenticeship
“What ultimately counts is the extent to which instruction requires students to think, not just to report someone else’s thinking”

“Reform Teaching”

Inquiry

Reasoning

Sense-making (Active construction)

Collaboration

Discourse
Responding to student ideas
Some important Benjamin Franklin key come from and could be held. During the colonists, they believed...
A Lesson of/in Missed Opportunities

(Cowie, Harrison, Willis, in press)
“Well your mom and dad would let you have a bird, fish or a cat as a pet but never an elephant.”
Teacher Response

• Missed the opportunity to learn about students’ ideas

• Showed she was not interested in student ideas

• Revealed what is valued in the classroom
What could the teacher have done?

• Planned how she might take any one of the four answers as a bridge to link students’ initial ideas with lesson goal

• Elicited how various features of the elephant, cat and bird helped those creatures survive in their environments - setting up for observation of characteristics of fish

• Nudged students along the intended route keeping them focused on adaptation
What could the teacher have done?

• Asked which groups agree with this group? Why?

• Joined groups to debate reasons for their choices

• Elicited how various features of the elephant, cat and bird helped those creatures survive in their environments - setting up for observation of characteristics of fish

• Listened for reasons and redirect focus to adaptive characteristics of fish
What could the teacher have done?

• Justify answers in terms of what they already knew about animals from stories and family events (funds of knowledge)

• Responded to thinking, leading students to consider fish, habitat and adaptations
Nudging Learning Along

Nudge

nədʒ/

a light touch or gentle push
<table>
<thead>
<tr>
<th>Poetic Device</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rhyme</td>
<td>Enhances the reader's enjoyment and makes the poem fun to read.</td>
</tr>
<tr>
<td>Repeated Line</td>
<td>Increases interest and makes the composition memorable.</td>
</tr>
<tr>
<td>Alliteration</td>
<td>Highlights key themes or ideas in the poem.</td>
</tr>
</tbody>
</table>

I noticed the poet used ... The poet used because ...
Foxes
A litter of little black foxes. And a
A litter of little gray foxes. Another
A litter of little white foxes.
The white ones are lighter than gray. Not a lot.
The gray ones are lighter than black. Just a little.
The litters are lighter in moonlight. They glitter.
They gleam in the moonlight.
They glow and they glisten.
Out on the snow see the silver fox sparkle.

Mary Ann Hoberman
Today your goal as readers is to understand that poetic devices can be used to supply rhythm and meaning in a poem.

<table>
<thead>
<tr>
<th>Poetic Device</th>
<th>Example</th>
<th>Purpose</th>
</tr>
</thead>
</table>
| Rhyme         | The Elephant: 
An elephant, wise, 
Tough as an acorn, 
And here it comes marching. 
More grace for the buckhorn, 
As well as its dieser. 
It's not getting thinner, 
And I'm feeling older. 
It's just growing greener. 
-Douglas Florian | Hooks in the reader  
Makes the poem fun to read  
Gives the poem rhythm  
Makes poem easier to memorize  
Makes poem fun to share |
| Repeated Line | The Poet: 
By the time I stop 
I'll have ten drops, 
And then will stop. 
It would seem like 
I'll have to stop. 
And then will stop. 
-I. W. Johnston | Hooks in the reader  
Makes poem fun to read  
Makes poem interesting |
Ms. L: So what did you notice? [FA]

Jules: Well I noticed that they had different-sized letters, like capitalized and lower case. Oh, and one more like in bumpy, and uhm, uhm, you also have spaces, big spaces [Active construction]

Ms. L: Spaces here (pointing at the text) and what did we call this (pointing at the word STOP) ... when all the words... all the letters... all the words... they look different [Nudging]

Jules: Bold
Ms. L: So what do you think this is doing? (Points to the text) [FA]
Jules: Well, maybe to describe uh… to describe… uh how the bus… how the uh… fast the bus. [Active construction].
Ms. L: How about you read to me. Read me the poem. And read it with the effect you think the author is trying to create [Nudging ]
[Jules reads the poem with expression]
Ms. L: Because there is so much going on here with just the way the author chose to display the words. [*Scaffolding*]

Jules: Mmm. (Jules nods)

Ms. L: Why do you think it’s important for the author that you read it a certain way? [*Nudging* ]

Jules: Well... because it makes it sound better... and makes it... like... makes it sound better and makes it ... um... makes it sound... makes it sound like what the poem is describing [*Active construction*]
The College, Career, and Civic Live (C3) Framework for Social Studies State Standards

Developing Claims and Using Evidence

<table>
<thead>
<tr>
<th></th>
<th>BY THE END OF GRADE 2</th>
<th>BY THE END OF GRADE 5</th>
<th>BY THE END OF GRADE 8</th>
<th>BY THE END OF GRADE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Begins in grades 3–5</td>
<td>D3.3.3-5. Identify</td>
<td>D3.3.6-8. Identify</td>
<td>D3.3.9-12. Identify</td>
<td></td>
</tr>
<tr>
<td></td>
<td>evidence that draws</td>
<td>evidence that draws</td>
<td>evidence that draws</td>
<td></td>
</tr>
<tr>
<td></td>
<td>evidence that draws</td>
<td>evidence that draws</td>
<td>evidence that draws</td>
<td></td>
</tr>
<tr>
<td></td>
<td>information from</td>
<td>information from</td>
<td>information directly</td>
<td></td>
</tr>
<tr>
<td></td>
<td>information from</td>
<td>information from</td>
<td>information directly</td>
<td></td>
</tr>
<tr>
<td></td>
<td>multiple sources in</td>
<td>multiple sources to</td>
<td>and substantively from</td>
<td></td>
</tr>
<tr>
<td></td>
<td>response to compelling</td>
<td>support claims, noting</td>
<td>multiple sources to</td>
<td></td>
</tr>
<tr>
<td></td>
<td>questions.</td>
<td>evidentiary limitations.</td>
<td>detect inconsistencies</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>in evidence in order</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>to revise or strengthen</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>claims.</td>
<td></td>
</tr>
</tbody>
</table>
Social Studies Lesson: Use evidence to answer an historical question: What kind of leader was Augustus?

https://sheg.stanford.edu/history-lessons/augustus

Based on this evidence, what can we learn about what kind of leader Augustus was?
What if Augustus was the one who decided to print these coins?

<table>
<thead>
<tr>
<th>Document</th>
<th>Based on these documents, what kind of leader was Augustus?</th>
<th>Evidence from documents to support these reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>A &amp; B: Map and Coins</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
When Emperor Augustus felt ill and thought his life was coming to an end, he began writing down his accomplishments. This is a first person account of his life and accomplishments. Initially, it was carved into bronze and put in Augustus’ mausoleum. Later copies were distributed throughout the empire. Here is an excerpt from the account.

Document D: Soldier (Modified)

The passage below was written by Velleius, who served as a soldier while Augustus was emperor.
<table>
<thead>
<tr>
<th>Document</th>
<th>Based on this document, what kind of leader was Augustus?</th>
<th>Evidence from document to support these reasons</th>
<th>Is this document reliable? Why or why not?</th>
</tr>
</thead>
<tbody>
<tr>
<td>C: Augustus</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D: Soldier</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Respond based on evidence and reliability
Claim: What kind of leader was Augustus?
Document E: Cassius Dio (Modified)

- This excerpt was written by the historian Cassius Dio, who was born 150 years after Octavian died.

Document F: Seutonius (Modified)

The excerpt below was written by the historian Seutonius, who wrote almost 100 years after Octavian died.
• Are contradictions irreconcilable?

• What questions remain about Augustus’s leadership?

• What evidence might we find that could answer our questions?
<table>
<thead>
<tr>
<th>Phase</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engagement</td>
<td>Task accesses learners’ prior knowledge, engages new concept through activities that promote curiosity and elicit prior knowledge; make connections between past and present learning, expose prior conceptions</td>
</tr>
<tr>
<td>Exploration</td>
<td>Conceptual change facilitated. Lab activities to generate new ideas, explore questions and possibilities, design and conduct preliminary investigation</td>
</tr>
<tr>
<td>Explanation</td>
<td>Focuses students attention of particular aspect of their engagement and exploration experiences; teachers directly introduce a concept, process or skill</td>
</tr>
<tr>
<td>Elaboration</td>
<td>Challenge and extend students’ conceptual understanding and skills. Through new experiences, the students develop deeper and broader understanding, apply conceptual understanding/skills</td>
</tr>
<tr>
<td>Evaluation</td>
<td></td>
</tr>
<tr>
<td>Phase</td>
<td>Summary</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Engagement</td>
<td>Task accesses learners’ prior knowledge, engages new concept through activities that promote curiosity and elicit prior knowledge; make connections between past and present learning, expose prior conceptions</td>
</tr>
<tr>
<td>Exploration</td>
<td>Conceptual change facilitated. Lab activities to generate new ideas, explore questions and possibilities, design and conduct preliminary investigation</td>
</tr>
<tr>
<td>Explanation</td>
<td>Focuses students attention of particular aspect of their engagement and exploration experiences; teachers directly introduce a concept, process or skill</td>
</tr>
<tr>
<td>Elaboration</td>
<td>Challenge and extend students’ conceptual understanding and skills. Through new experiences, the students develop deeper and broader understanding, apply conceptual understanding, skills</td>
</tr>
</tbody>
</table>

**Student self-assessment**

**Teacher formative assessment**
Observing Phenomena
Make a Prediction

• Which fruit/vegetable will decompose first/last?

• Why?
Observing Phenomena
Make a Prediction

• What might students say?

• How to respond?

• How to guide/nudge learning forward?
FRUIT AND VEGETABLE DECOMPOSITION

74 DAYS  1 PICTURE/40 MINUTES

PLAYED BACK AT 30 FRAMES/SEC
Nudging Learning Along

Nudge

nəj/

a light touch or gentle push
Lesson (2 class periods)

Prior to lesson:

• Students examined a different set of growing patterns that differed in their rate of change

• Investigated them to determine the function of each pattern and make conjecture about the set
Lesson (2 class periods)

This lesson:
• Examining what happens when the pattern stays the same but the starting point shifts or changes

Subsequent lessons:
• Examine patterns that do not have a constant rate of change; extending learning to non-linear functions
As you watch the video...

- What do you notice about the task?
- How is she “nudging” learning along?
reasoning which is what the Common Core is looking for.
So they'll be able to apply that later on.
with all of the other representations.
As you watch the video...

- How is the teacher “nudging” learning along?
Teaching/Learning/Assessment
• **Agency**
• **Identity**
• **Equity**
Thank You!
<table>
<thead>
<tr>
<th>Document</th>
<th>Based on this document, what kind of leader was Augustus?</th>
<th>Evidence from document to support these reasons</th>
<th>Is this document reliable? Why or why not?</th>
</tr>
</thead>
<tbody>
<tr>
<td>E: Cassius Dio</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F: Seutonius</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The problem with “checking for understanding”? A problem of teaching
Final Claim: What kind of leader was Augustus?