



How Can Student Questions & Curiosity Drive Primary Source Learning?

TPS Eastern Region
Conference

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Acknowledgments



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Thanks to Sarah Westbrook, Director of Professional Learning and Erin Kim, Graduate Education Intern for all their support and contributions.

+ Overview of Our Session

- The skill of question formulation
- An experience in the Question Formulation Technique
- Examples of students formulating, working with, and using their own questions to learn about primary sources
- A work in progress: Emerging ideas about questions, curiosity, thinking, & learning



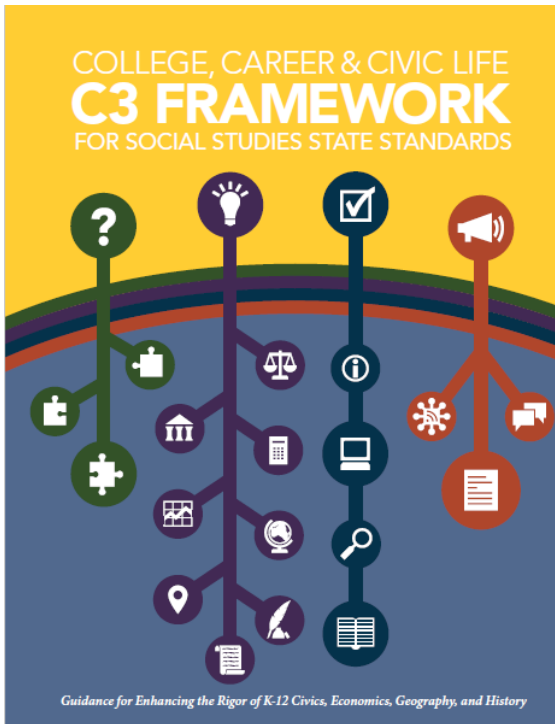


“There can be no thinking
without questioning—no purposeful
study of the past, nor any serious planning
for the future.”

- **David Hackett Fischer**

University Professor Emeritus of History at Brandeis University

+ C3 Framework



“Questioning is key to student learning.” (p.17)

“Central to a rich social studies experience is the capability for developing questions that can frame and advance an inquiry.” (p. 24)

National Council for the Social Studies, *The College, Career, and Civic Life (C3) Framework for Social Studies State Standards: Guidance for Enhancing the Rigor of K-12 Civics, Economics, Geography, and History* (Silver Spring, MD: National Council for the Social Studies, 2013).

+ AASL Standards Framework for Learners



AASL STANDARDS FRAMEWORK for **Learners**



Learners display curiosity by
“Formulating questions about a personal interest or a curricular topic.”

Learners gather information by
“Systematically questioning and assessing the validity and accuracy of information.”

+ College Presidents on What College Students Should Learn



“The primary skills should be analytical skills of interpretation and inquiry. In other words, know how to frame a question.”

- **Leon Botstein**, President of Bard College

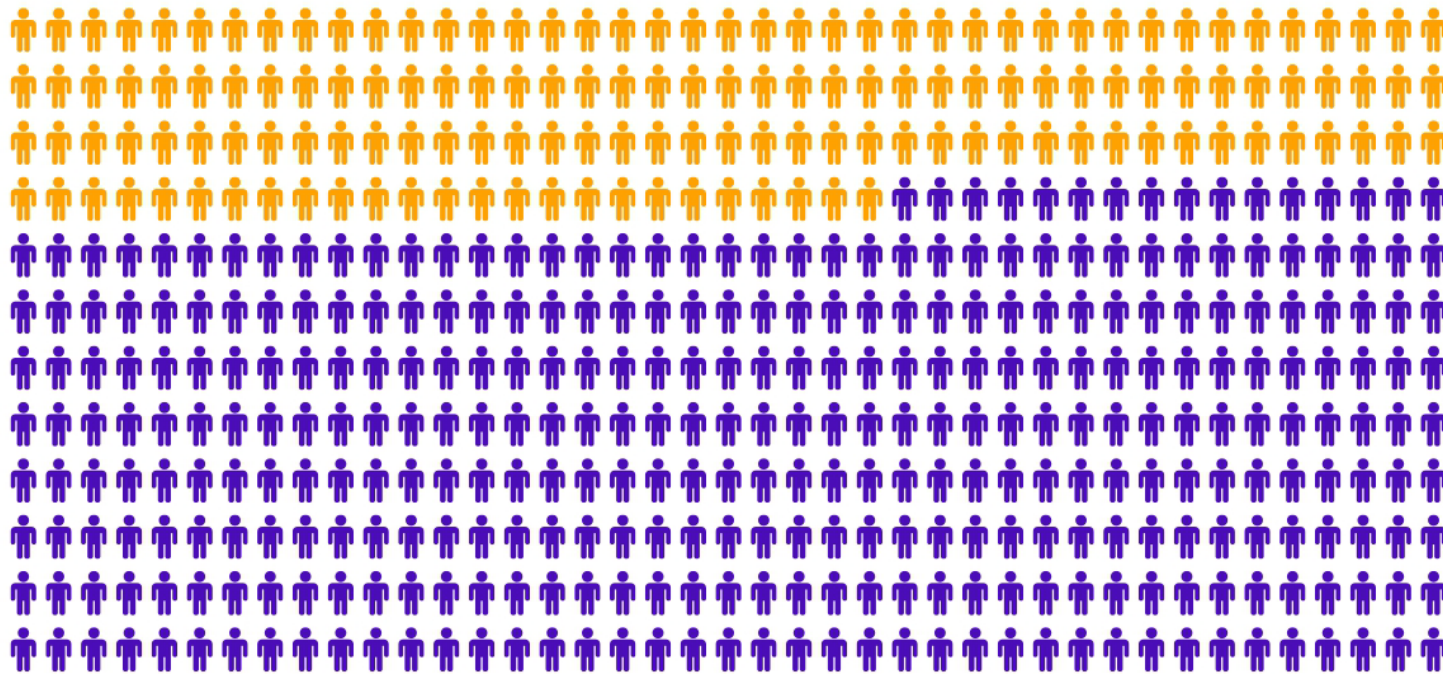
“...the best we can do for students is have them ask the right questions.”

- **Nancy Cantor**, Chancellor of University of Illinois

The New York Times, August 4, 2002



Yet, Only 27% of Graduates Believe College Taught Them How to Ask Their Own Questions



● Agree ● Disagree

Alison Head
Project Information Literacy
at University of Washington, 2016



But, the problem begins long before college...



Age Four:

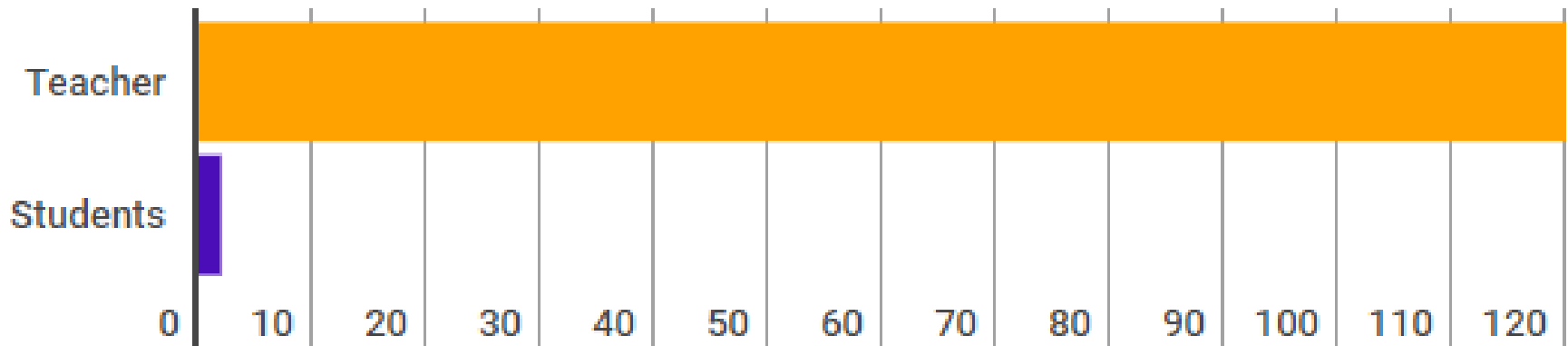
“The true age of inquisitiveness”

- James Sully dubbed age four, “the true age of inquisitiveness when question after question is fired off with wondrous rapidity and pertinacity.”
- Young children ask 10,000 questions per year before they begin formal schooling.

+ Question Formulation by Adolescence



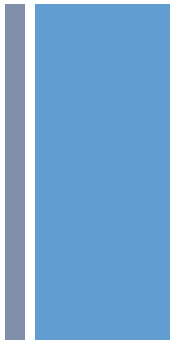
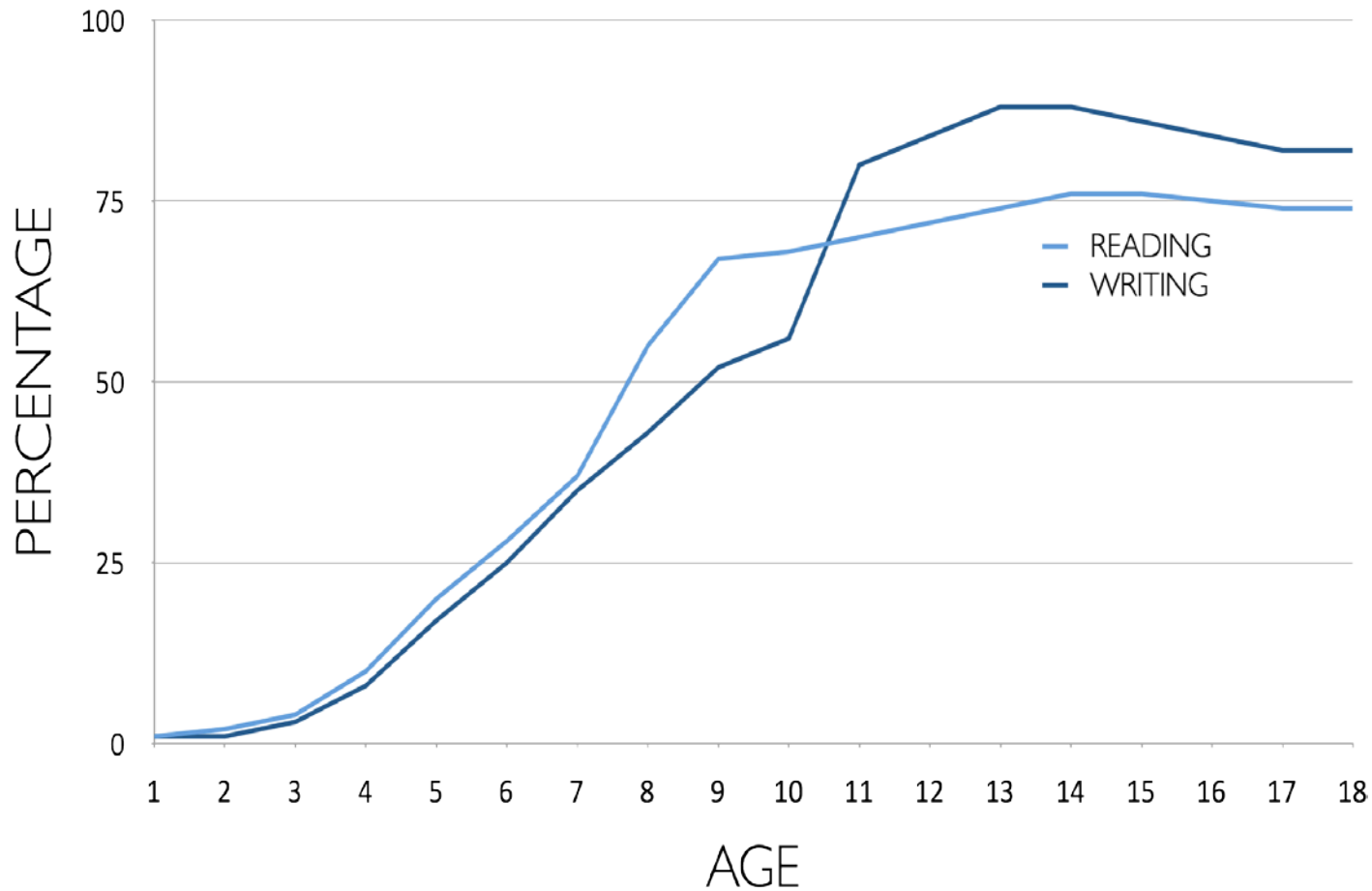
Who's asking questions over the course of an hour?



+ Educators Recognize the Problem

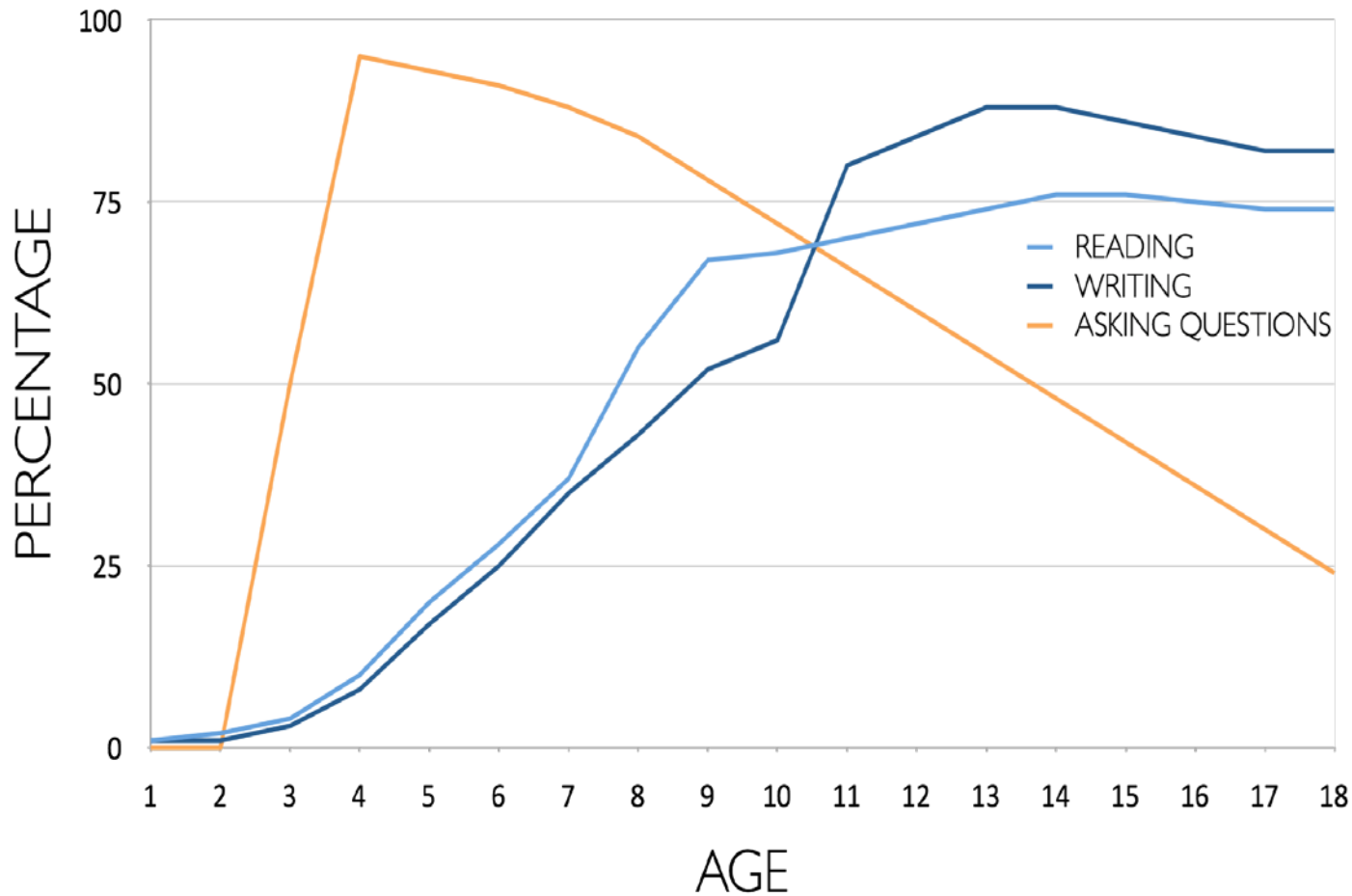
- Teachers report that getting students to ask questions feels like, “pulling teeth.”
- Students ask less than 1/5th the questions educators estimated would be elicited and deemed desirable.

+ Skill development



Reference:
<http://nces.ed.gov/nationsreportcard/pdf/main2009/2011455.pdf>
<http://nces.ed.gov/nationsreportcard/pubs/main2007/2008468.asp#section1>
Data on question-asking based on parent and teacher feedback

+ Skill development

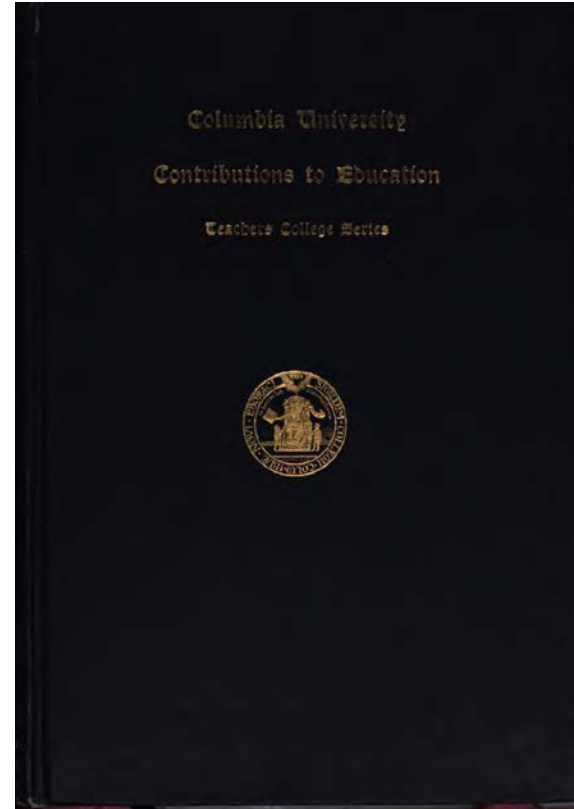




How can getting students to ask questions go from a feeling of “pulling teeth” to a feeling of excitement for both teachers and learners?

+ Moving from the exception...

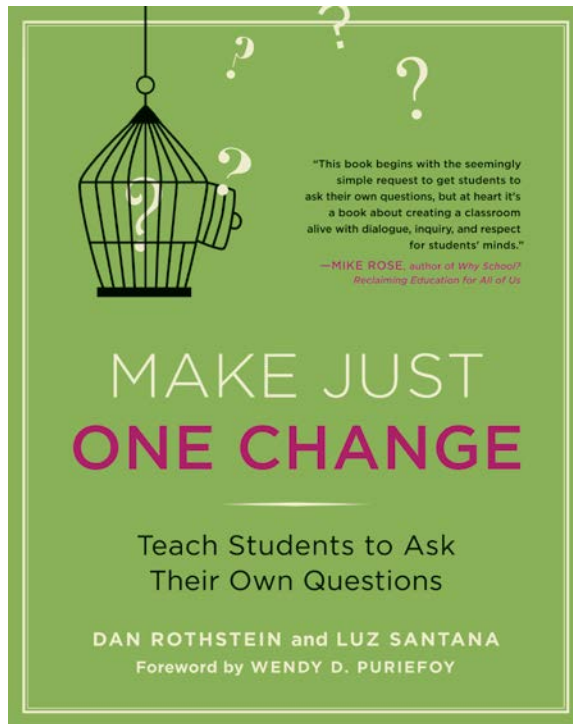
In a 1912 study Romiett Stevens observed: “an unusual lesson because twenty-five of the thirty-four questions were asked by the pupils... **The result was that the lesson developed an impetus born of real interest.** I mention it because this lesson was unique in the series of one hundred.”



The Question as a Measure of Efficiency in Instruction: A critical study of classroom practice. *Columbia University Contributions to Education, No. 48*



... to the norm





What does it look like when students learn to ask their own questions?

+ Classroom example: Kindergarten



Teacher: Jennifer Shaffer, Walkersville, MD

Topic: Nonfiction literacy

Purpose: To engage students prior to reading a nonfiction text about alligators

+ Question Focus



Photograph by Nuwan Samaranayake, 2013

+ Student questions



1. Is the alligator camouflaged?
2. Why do the babies have stripes?
3. Are those baby crocodiles?
4. Is it a mom or dad crocodile?
5. What is the green stuff?
6. Why are they in the water so low?
7. Where are they going?
8. Why are the baby alligator's eyes white and the mom's black?
9. Why are baby alligators on top of the momma alligator?
10. Why does momma or daddy have bumps on them?

+ Classroom example: 4th grade



Teacher: Deirdre Brotherson, Hooksett, NH

Topic: Math unit on variables

Purpose: To engage students at the start of a unit on variables

+ Question Focus



$$24 = \text{😊} + \text{😊} + \text{😊}$$



Student questions



1. Why is the 24 first?
2. What do the smiley faces mean?
3. **Why are there 3 smiley faces?**
4. How am I suppose to figure this out?
5. Is the answer 12?
6. Can I put any number for a smiley face?
7. **Do three faces mean something?**
8. **Do the numbers have to be the same because the smiley faces are the same?**
9. What numbers will work here?
10. Does it mean 24 is a really happy number?
11. **Can we replace each smiley face with an 8?**
12. Do any other numbers work?
13. Can we do this for any number?
14. **Does it always have to be smiley faces?**
15. **Do we always have to use three things?**

+ Research links question formulation & learning outcomes



- Student question formulation is one of the most effective metacognitive strategies
- Engaging in pre-lesson self-questioning improved students rate of learning by nearly 50% (p.193)

+ Student reflections

In response to: "why do you think we ask questions?"

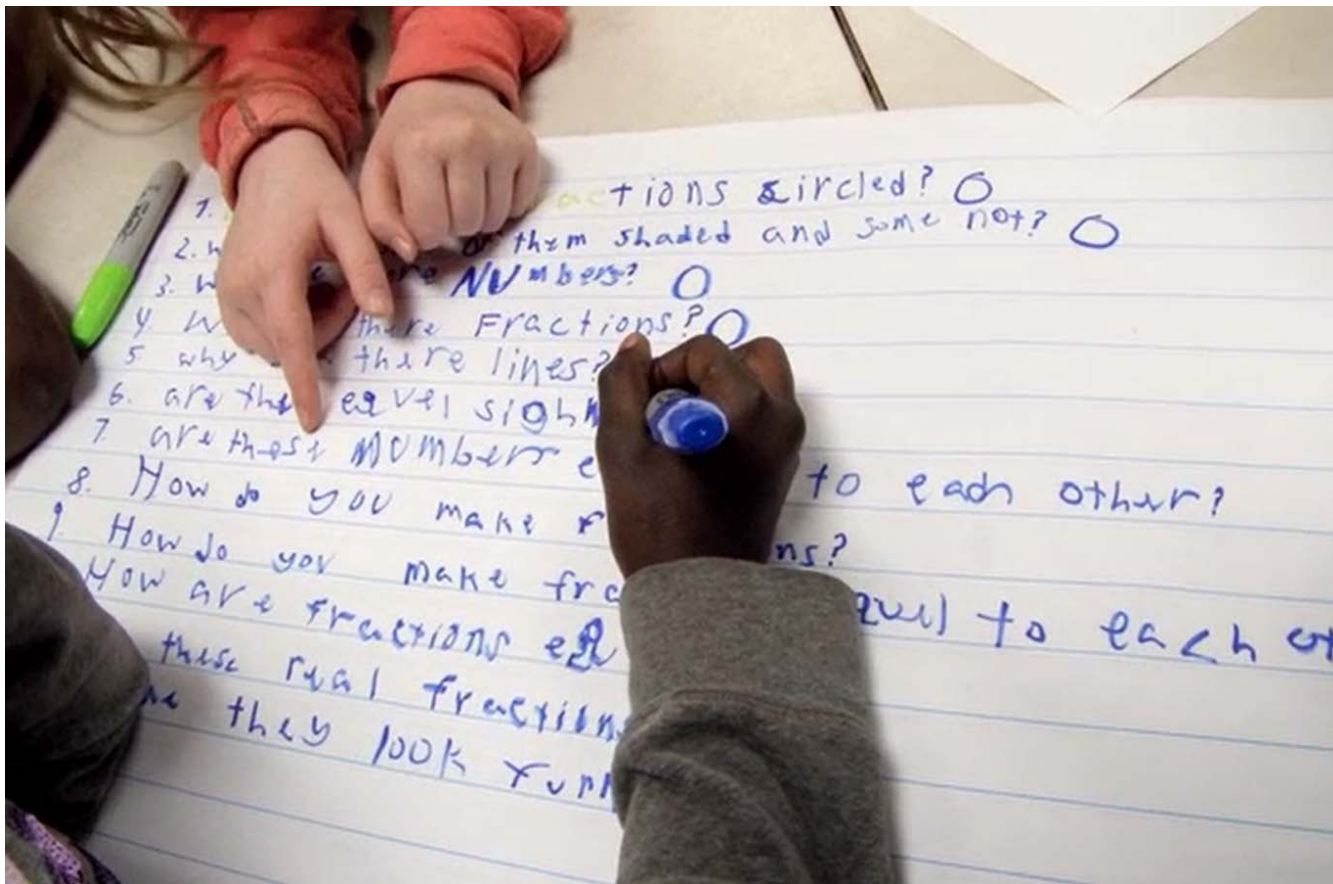
"So we can be curious about what we are learning and want to know more."

- 1st Grader, Novi, MI

"Asking questions may not always lead to answers, but it leads to curiosity... Question asking helps us guide our own adventure and helps us find new interests. Everything starts with a question, even if you don't realize it."

- 9th Grader, Fitchburg, MA





+

Experience the Question Formulation Technique (QFT)

+ Rules for producing questions



1. Ask as many questions as you can
2. Do not stop to answer, judge, or discuss
3. Write down every question exactly as stated
4. Change any statements into questions

+ Produce questions

1. Ask questions
2. Follow the rules
 - Ask as many questions as you can
 - Do not stop to answer, judge, or discuss
 - Write down every question exactly as it was stated
 - Change any statements into questions
3. Number the questions



+ Question Focus:



Some students are not demonstrating curiosity about primary sources.

+ Categorize questions: Closed/ Open



Definitions:

- **Closed-ended** questions can be answered with a “yes” or “no” or with a **one-word** answer.
- **Open-ended** questions require more **explanation**.

Directions:

Identify your questions as closed-ended or open-ended by **marking them** with a “**C**” or an “**O**.”



Closed-ended questions

Advantages

Disadvantages



Open-ended questions

Advantages

Disadvantages

+ Change questions



Take one **closed-ended question** and change it into an **open-ended question**.



Take one **open-ended question** and change it into a **closed-ended question**.





Prioritize questions



Review your list of questions

- Choose the three questions you are most curious to explore further.
- While prioritizing, think about your Question Focus: *Some students are not demonstrating curiosity about primary sources.*

After prioritizing consider:

- Why did you choose those three questions?
- Where are your priority questions in the sequence of your entire list of questions?

+ Create an action plan



In order to answer your priority questions:

- What do you need to *know*? **Information**
- What do you need to *do*? **Tasks**



1. Questions you changed from open/ closed
2. Your three priority questions and their numbers in your original sequence
3. Rationale for choosing priority questions
4. Next steps



Reflect

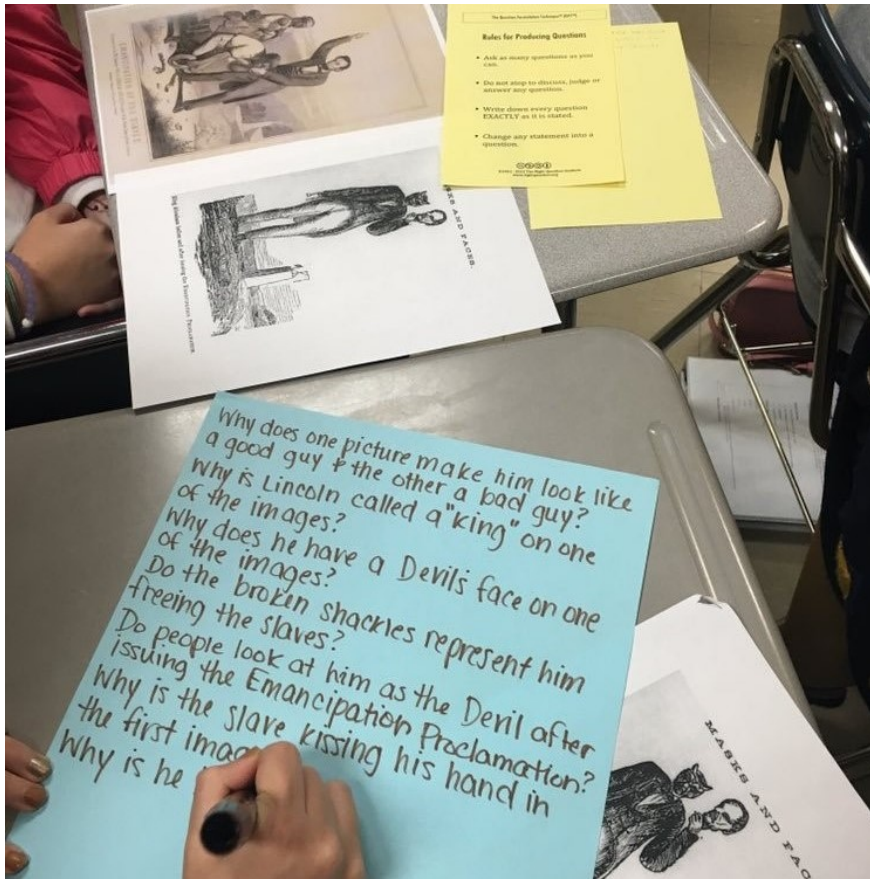


- What did you learn?
- How did you learn it?
- What do you understand differently now about some students not demonstrating curiosity about primary sources?



A Round of Applause





+

Primary Source and Social Studies QFT Examples



Classroom example: Middle school



Teacher: Megan Harvell, Boston, MA

Topic: The Civil War

Purpose: Pre-reading activity to engage students

+ Question Focus



Image by John L. Magee, 1856

+ Student questions

1. Why are they fighting?
2. Are they fighting?
3. Are they part of the government?
4. Where were they?
5. Who are they?
6. Were they signing anything?
7. Who else was there?
8. Why are you hitting him?
9. Why didn't they call 911?
10. Was this related to slavery?
11. Why is he hitting him with a bat?

11. Why are you taking a pen?
12. Why are they in court?
13. Who hit who first?
15. Who died?
16. Why are they smiling?



+ Classroom Example: High School



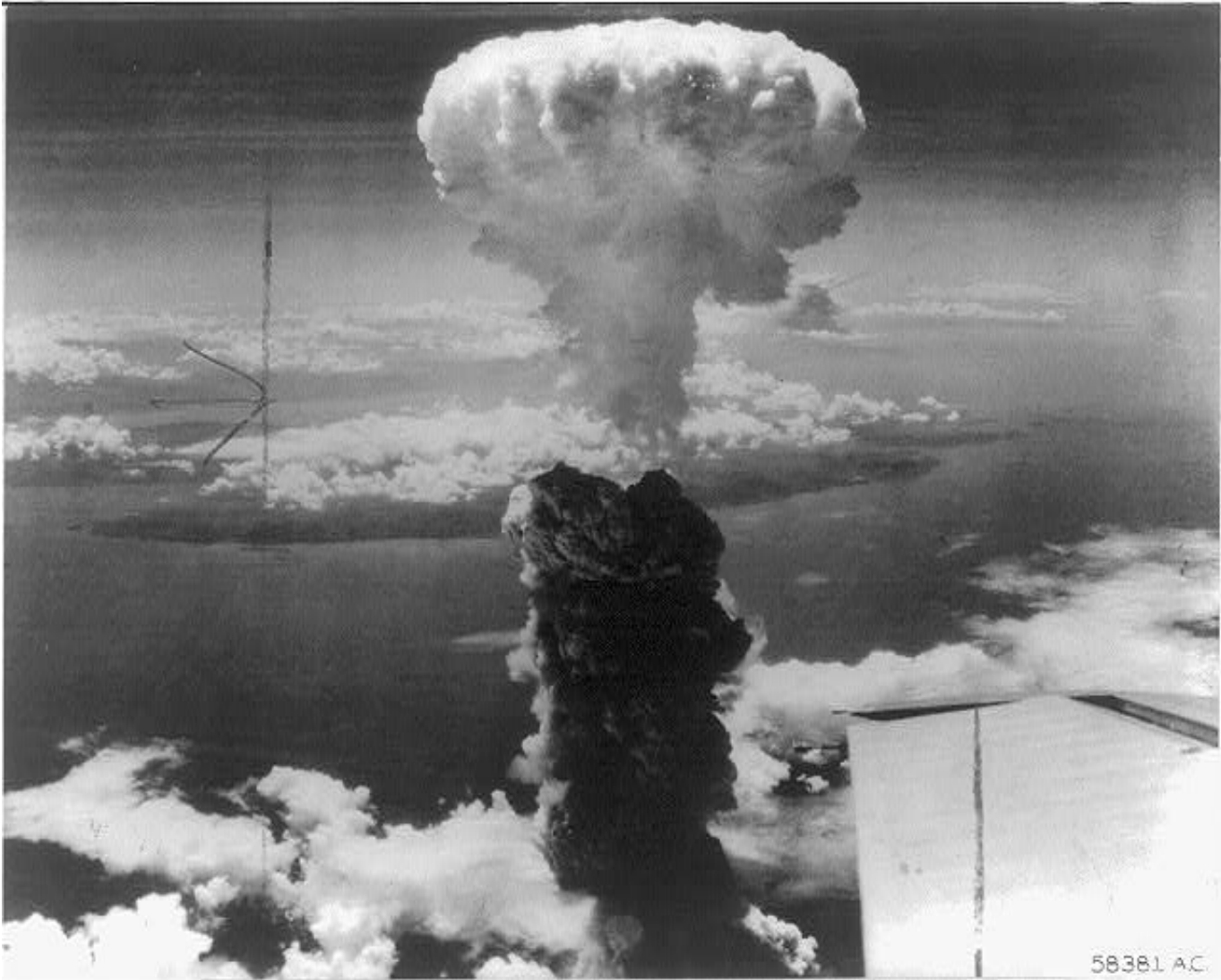
Teacher: Kelly Grotrian, East Brunswick, NJ

Subject: 11th Grade U.S. History II

Topic: The end of World War II

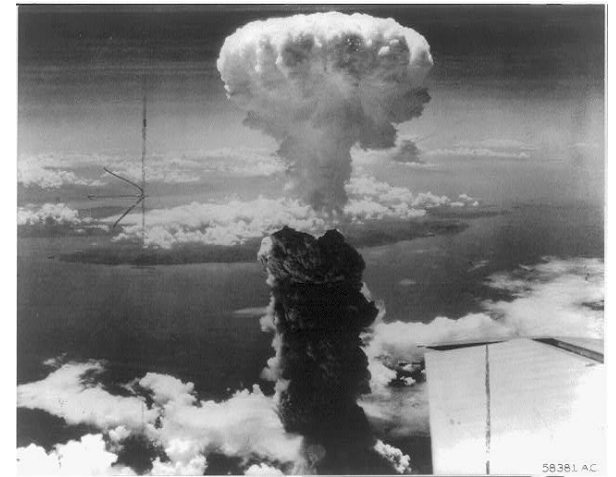
Purpose: Leads into a discussion about whether the United States was justified in dropping the atomic bomb. Students' questions were also used for a homework assignment on Google classroom.

+ Question Focus



+ Student Questions

1. What is this?
2. Who did this?
3. How did this affect people?
4. **What were the environmental & economic implications of dropping the bomb?**
5. How many people were hurt?
6. **Is that a plane wing in the bottom right?**
7. Did the people in that plane drop the bomb?
8. Did the people dropping the bomb know what they were doing?
9. Did they make the bomb?
10. **Who was responsible for dropping the bomb?**
11. **What led to this event?**
12. **What happened as a result of dropping the bomb?**
13. Where was the bomb dropped?
14. Had people been given warning?
15. How long did it take to notice effects of the bomb?
16. When did this happen (at what point in the war)?
17. **How many lives were lost as a result?**



+ Classroom example: Middle school

Teacher: Joshua Beer, Lempster, NH

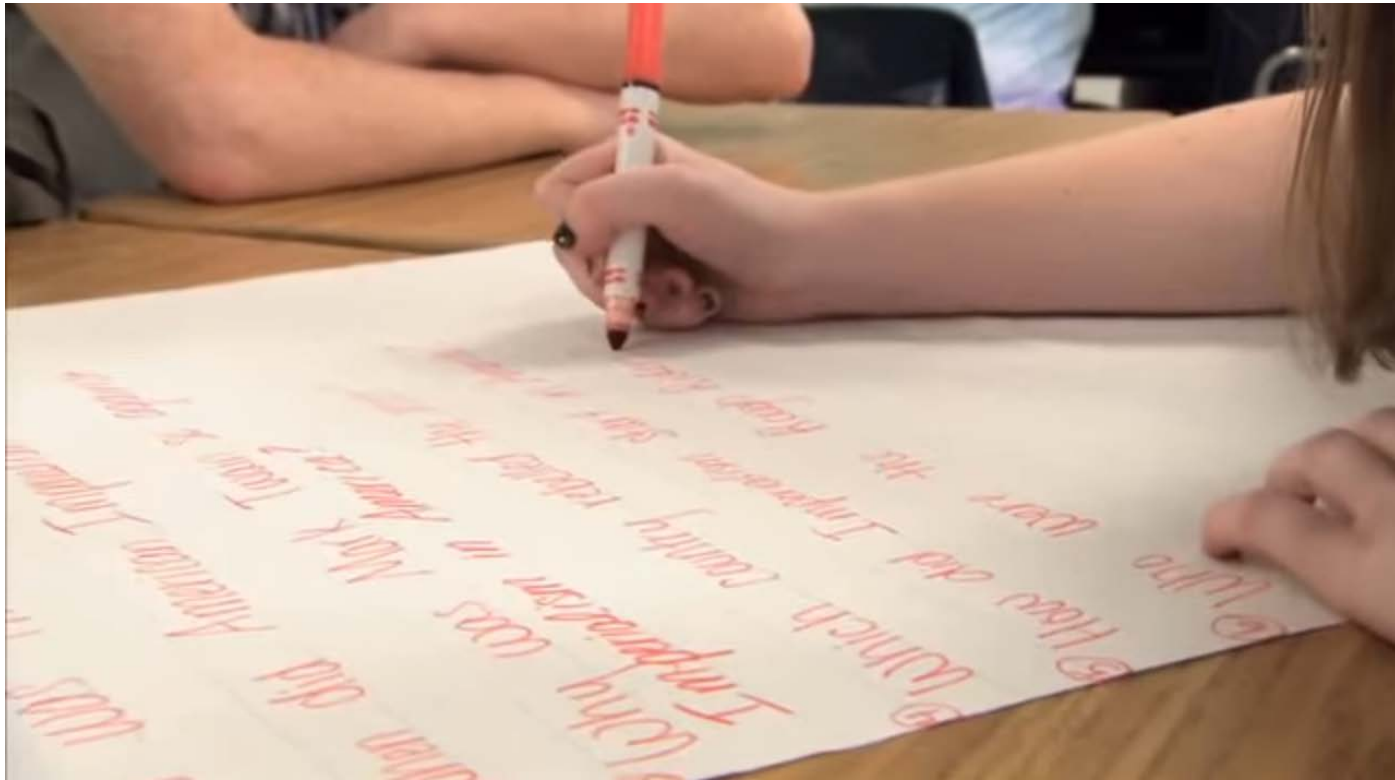
Topic: American Imperialism

Purpose: Summative assessment

QFocus: Questions that should be asked about American Imperialism at the turn of the 20th century



The Question Formulation Technique for Summative Assessment





A work in progress:
Emerging ideas about questions,
curiosity, thinking, & learning

+ What happened when you looked at the problem of some students not demonstrating curiosity about primary sources?

- You focused intently on this problem for a limited period of time
- You inquired. You asked questions
- You worked with your questions
- You selected questions you were most curious to explore

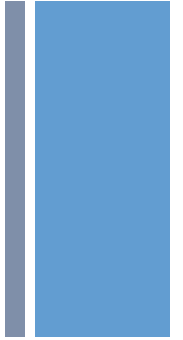


+ What happened to the students when they looked at the Caning of Sumner?

- They focused intently on the image for a limited period of time
- They inquired. They asked questions
- They worked with their questions
- They selected questions they were most curious to explore



+ Facilitating curiosity and enhancing learning



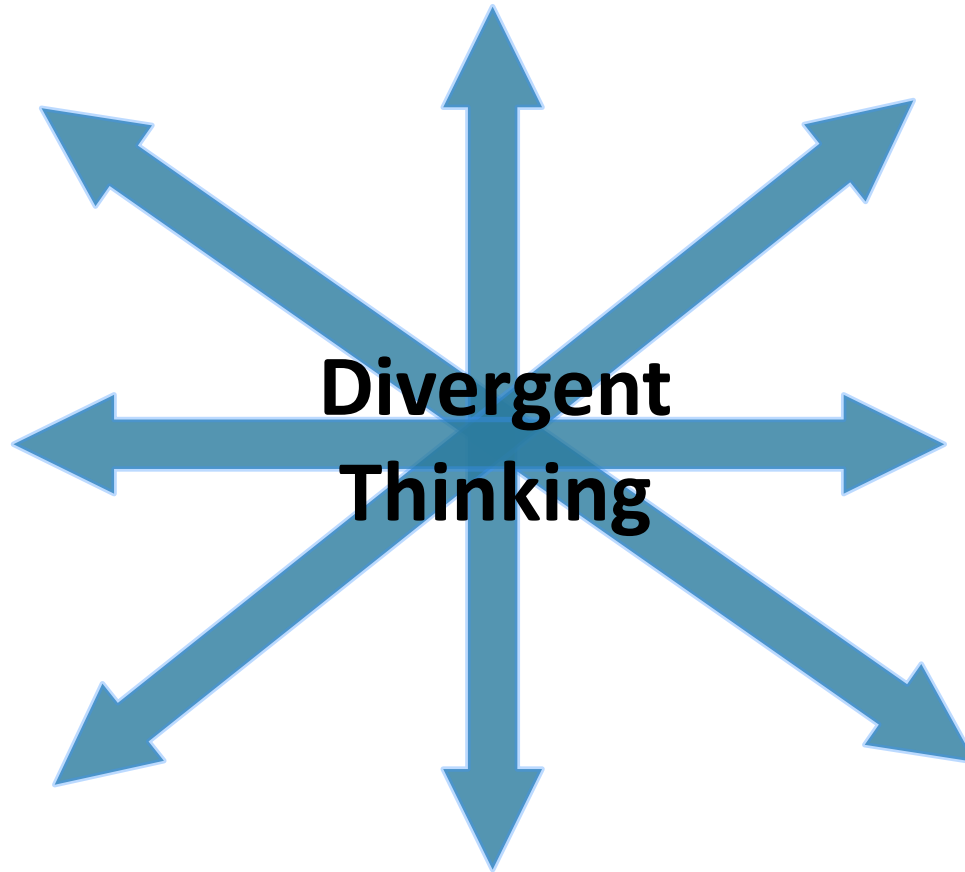
The emergence of a new model of learning through:
“working with one’s own questions”

+ How we define “working”

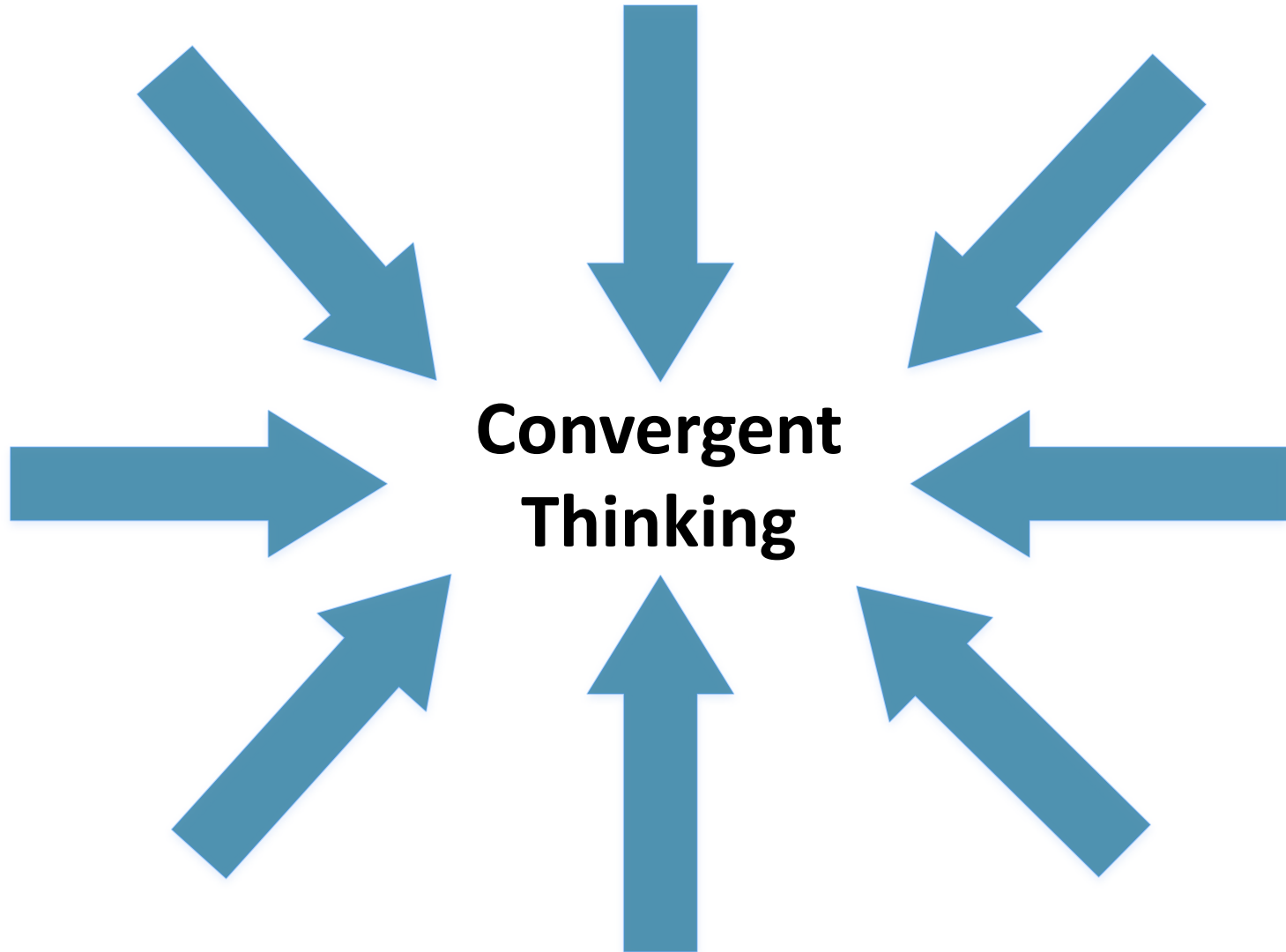


- Produce
- Categorize
- Change
- Prioritize
- Strategize
- Reflect
- Divergent
- Convergent
- Metacognition

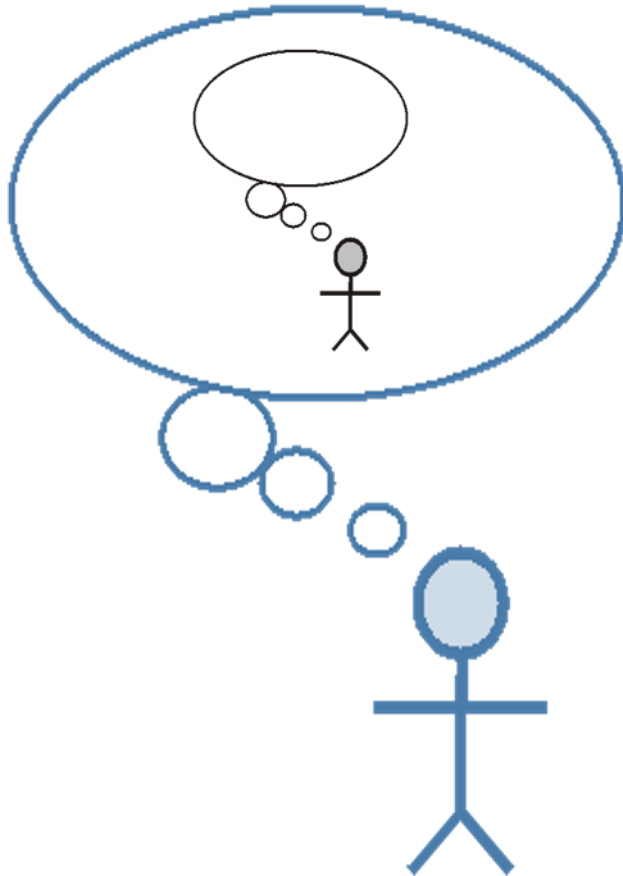
+ Thinking in many different directions



+ Narrowing down, focusing



+ Thinking about thinking



Metacognition

+ Consistent outcomes

- Greater knowledge
- Greater ownership
- Greater intellectual rigor
- Greater curiosity



+ Greater curiosity



- Curiosity is often seen as a prerequisite for questions.
- Curiosity can be intentionally facilitated by teaching students how to formulate, work with, and use their own questions.



Honoring the original source: Parents in Lawrence, Massachusetts, 1990



“We don’t go to the school because we don’t even know what to ask.”



+ The ongoing source of expertise from the field of educators

“I was so excited to see that even the quietest children were generating questions and participating in the activity.”
– 3rd Grade Teacher from Lexington, MA

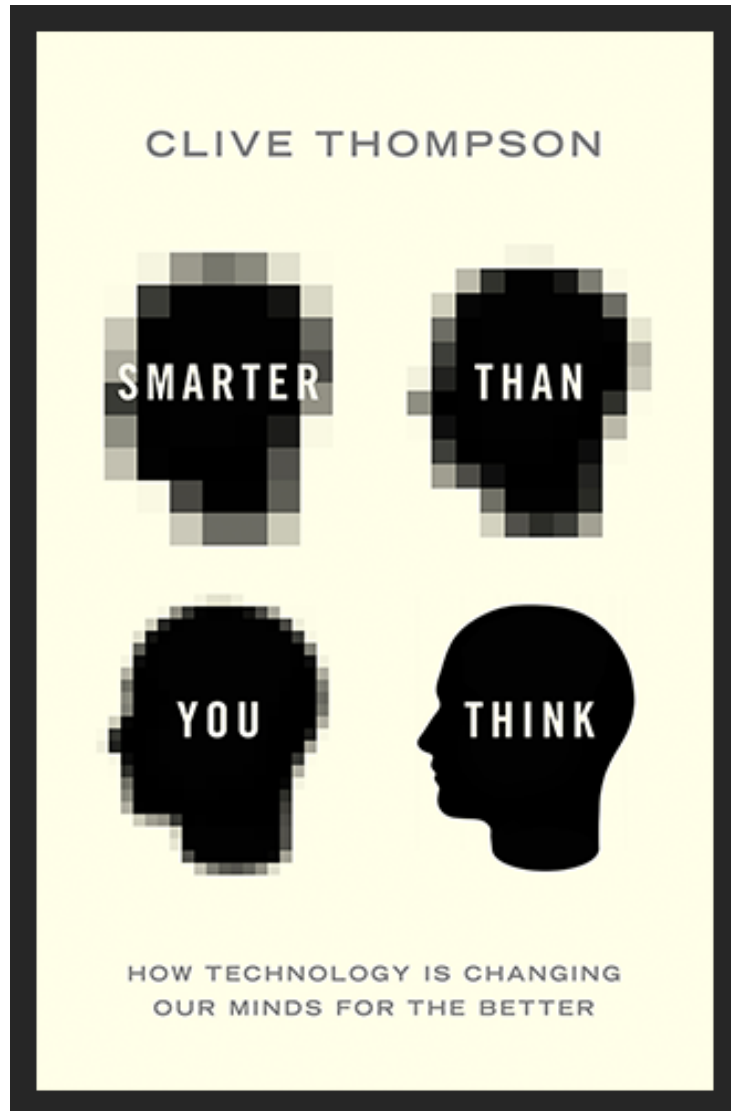
“The QFT is a powerful instructional practice that inspires a curious habit of mind, as it invites students to share the responsibility of asking questions of themselves and one another.” – Elementary Writing and Social Studies Coordinator, Simsbury, CT





So how does this all fit into our larger vision?

In the Age of Google...



“How should you respond when you get powerful new tools for finding answers?”

Think of harder questions.”

- Clive Thompson
Journalist and Technology Blogger

+ Democracy



“We need to be taught to study rather than to believe, to **inquire** rather than to affirm.” - Septima Clark



Access simple and powerful
resources to teach students
how to ask questions:
www.rightquestion.org