Productive Questioning

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REASON 1.
BALANCE

Curriculum  Instruction
Without Quality Instruction

Curriculum is just a book
REASON 2.
ALIGN
THE PRESENT
AND
THE FUTURE
The Present: Gifted Students

70 percent prefer “what could be” over “what is”
challenge assumptions
In all affairs it's a healthy thing now and then to hang a question mark on the things you have long taken for granted.

-Bertrand Russell
change the status quo
Social stagnation results not from a lack of answers but from the absence of the impulse to ask questions."

-Eric Hoffer
dig for understanding
WE MAKE OUR WORLD SIGNIFICANT BY THE COURAGE OF OUR QUESTIONS AND BY THE DEPTH OF OUR ANSWERS.

CARL SAGAN
gifted students are like experts in their preference for inquiry

but not in their experience with inquiry
experts are eager to have students do the same
...[students] are not here to worship what is known, but to question it.

*Jacob Bronowski*
10,000 hours
Reason III.

Change the Level Of Discourse
Questions are the most frequently used teaching technique in the classroom.
Questions are viewed as singularly effective in promoting development of higher levels of thinking.
Increased Frequency of Higher Level Questions (over 50%) Lead to Increases in:

- On task behavior
- *Length* of responses
- *Relevant contributions* volunteered
- *Student to student* interactions
- *Complete sentences*
- *Speculative thinking* on the part of students
- *Relevant questions posed* by students
Questions are viewed as singularly effective in promoting knowledge acquisition and development of higher levels of thinking.
A Meta-Analysis of 20 studies on Questioning

“gains in achievement can be expected when higher cognitive questions assume a predominant role during classroom instruction”
(Redfield & Rousseau, 1981)
Increasing the use of higher cognitive questions (above 50%) produces superior learning gains ... particularly for secondary students.

Teaching students to draw inferences and giving them practice in doing so results in higher cognitive responses and greater learning gains.

INCREASES IN THE USE OF HIGHER COGNITIVE QUESTIONS ... DOES NOT REDUCE STUDENT PERFORMANCE ON LOWER COGNITIVE QUESTIONS IN TESTS.

Classroom Questioning by Kathleen Cotton

Northwest Regional Educational Laboratory http://www.nwrel.org/scpd/sirs/3/cu5.html
For older students, increases in the use of higher cognitive questions (to 50 percent or more) are positively related to increased teacher expectations about children’s abilities—particularly the abilities of those students whom teachers have habitually regarded as slow or poor learners.
90% of all questions asked by instructors are low level questions. Teachers ask questions that require students to respond with facts.

Students ask questions to clarify homework assignments.
In Gifted Classrooms?

- Gallagher, Aschner & Jenne

**Cognitive Memory**
- Recognition
- Recall

**Convergent**
- Explanation
- Inference

**Divergent**
- Conjecture
- Translation

**Evaluation**
Today...very little

For Detail... 5 Teachers, 10 Classrooms
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<tr>
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<td>8%</td>
<td>16%</td>
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<tr>
<td>Applying</td>
<td>5%</td>
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<td>Synthesis</td>
<td>1%</td>
<td>3%</td>
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<tr>
<td>Evaluation</td>
<td>2%</td>
<td>8%</td>
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You Can’t Climb A Stairway...

...With Missing Steps
Productive QUESTIONS

- Come in sequenced chains…

…leading to the big idea
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<tr>
<th></th>
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</table>
Traditional v. Reform Curriculum

- 95 percent of traditional teachers’ questions were low level
- 60-75 percent of reform teachers’ questions were low level

(Boaler & Brodie, 2004)
Why don’t we talk about questioning more often?

- Teaching is an ART!
- Focus on the teacher
  - Long term commitment to change in practice
  - Inefficient investment
- Requires paradigm shift in lesson planning
- Requires more extensive content knowledge
- Personal
making questions productive

designing questioning sequences

intentional delivery
Planning

To

To Be But

To Be And To Be Not?

To Be or Not To Be?
Planning

Productive questioning requires advance preparation.
Hilda Taba,
Goddess of Questioning

- Four Structures for Organizing Questions to Achieve Higher Order Thinking
  - Concept Development
  - Interpretation of Data
  - Application of Generalizations
  - Resolution of Conflict

- Cognitive Map
Planning

the cognitive map
Cognitive Map

Data

Stay away

Make fun

Insult/jokes

Fight

“them”

Take away

names

Label

Condescend

Rules to keep

them away

False

accusations
If I ask my students…

“what do you suppose are the reasons, negative or positive, why someone would (insult someone else)?”

…how will they answer?
What makes someone feel threatened?
Data

Stay away

Make fun

Insult/jokes

Fight “them”

Take away names (give numbers)

[Gossip]

Label

Condescend

Rules to keep them away

False accusations

Prior Causes
Feel threatened
Want survival

Unknown
Past experiences
Fear of losing control

Low self-esteem
My past experiences

Causes
Desire for safety
Maintain lifestyle
Keep traditions
Comfort

I’ve been made fun of
In the past
Feel threatened
To make myself feel better

Fear of change
Not understanding
I need structure
Makes me feel superior

Maintain Order
Fear of conflict

Fear of conflict
Unknown
Past experiences
Fear of losing control

False accusations

I need structure
Makes me feel superior

Desire for safety
Maintain lifestyle
Keep traditions
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Fear of change
Not understanding
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[Gossip]

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Taba’s Research

Students with teachers trained in questioning showed

- Greater number of thought units
- More complex thought
- Convergence of lower and higher level thought
- Using the Cognitive Map was critical to facilitating students’ cognitive development (1966)
intentional delivery through active self-listening
Ted Parson’ Interaction Analysis
Discussion Profile Data Form

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Taba’s Questioning Assessment

- Focuses or refocuses students on a task
- Asks for reasons
- Seeks many ideas, encourages student-to-student talk.
- Seeks depth in follow-up (why, consequences, …)
- Seeks clarification/extension (examples, detail, etc.)
- Asks Closed or rhetorical question (requires fact answer, yes or no, no answer)
- Gives opinion or value judgment
- Does the task students were asked to do
- Edits or changes a student’s idea
- Rejects, ignores, or cuts off student response
SUPPORT THROUGH PEER TEAMS

Listening to each other
Higher Order Questions

and

Wait Time
different targets for higher order
the most significant opportunity
The most Significant Challenges to Learning are **INTERNAL** and **Require** **CONSTANT Reflection**
Remain Open
to others and to varied experiences

Risk Imperfection

Identify Areas of Resistance

Welcome Feedback

Willing to be Novice
BACK TO BALANCE

Questioning

Experience/Acceptance

(Experience, Observe, Reflect)
Teaching that begins with *questions* is both a moral and a pedagogical choice. A teacher teaches with questions because she or he believes that it is a better way to teach, and a better way to *be* a teacher.

*Nicholas C. Burbles*, essay: "Aporia: Webs, Passages, Getting Lost, and Learning to Go On"
There is NO Neutral Stance
Improving Your Questioning may be the Single Most Powerful Change You can Make in Your Classroom

It costs very little

It requires no new books, consumables or computers

You won’t sacrifice achievement

You can start … Wednesday
We find that some teachers ask surface questions that do not take students deeper into ...issues; we think of those students as walking on a path that surrounds a beautiful forest without ever stepping into the forest to look at the trees. Other teachers ask questions that [probe] do not build carefully toward key concepts. We think of these students as stepping in and out of the forest, catching glimpses of trees and flowers but not learning where they are ...or how they may navigate their way through the forest. Other teachers ask questions that target key concepts and build carefully to enable students to find their way around. Those students experience the forest fully – they walk through, looking at the trees and flowers, and they also climb some trees and look at the whole terrain, getting a sense of where they are....the questions that teachers use to guide students become the pathways that students walk along and that shape their experience of the terrain. Boaler & Humphreys. 2005
What Path will YOU Take?