



Quality Questioning Questions that Encourage Thoughtful Responses

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Thinking And Learning In Concert
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In this session we will explore:

- 1) *how skillful questioning can enhance thinking and learning,*
- 2) *how to construct thought provoking questions,*
- 3) *how to help students develop questioning skills.*



Processing



Implementation



Dot down the answers to the following questions:

When did the First Fleet arrive?

What kind of people made up the passengers and crew?

As you think about your understanding of the developments during the first century after the fleet arrived, what are some of the events that you consider important to life in Australia today?



Why do we ask students questions?

Questioning is important -

- For teachers
 - Activate prior knowledge
 - Stimulate or direct thinking
 - Motivate, guide or challenge students
 - Assess or evaluate
- For students
 - Critical skill for "problem solving"
 - Finding out "how the world works"
 - Essential to self-directed learning

Teachers Matter Conference Sydney, Australia

Research Basis

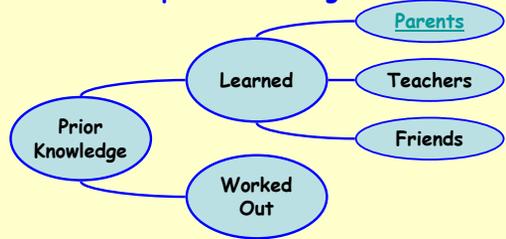
"Habits of Mind", A. Costa and B. Kallick, ASCD (2000)

"How Students Learn: History, Mathematics and Science In The Classroom", M.S. Donovan and J.D. Bransford, *Editors*, from National Research Council, The National Academies Press, Washington, D.C. (2005)

"How People Learn", J.D. Bransford et al, National Academy Press, Washington DC, 2002

"Classroom Instruction That Works", R. Marzano, D. Pickering & J. Pollock, ASCD 2001

Marzano stresses the importance of assessing prior knowledge



HPL emphasizes the importance of uncovering misconceptions

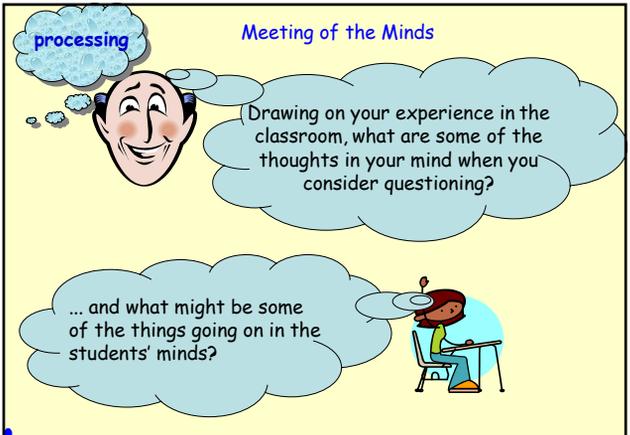
Powerful Questions that Implement Thoughtful Responses:

Are clear about the content to be covered

Are specific about the thinking skills (cognitive processes) you want to elicit

Track the level of thinking required to answer these questions - move from low level to more demanding

Are explicitly conscious of the behaviors (Habits of Mind) you want to activate



Good teachers know how to ask good questions.

Good teachers also know how to LISTEN





Listening Sequence

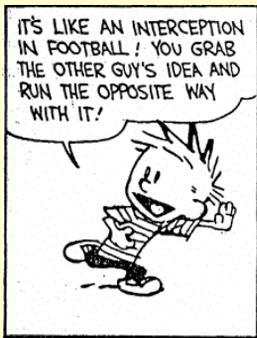
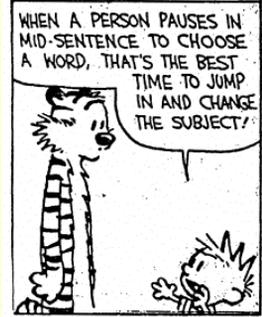
PPP

Pause

Paraphrase

Probe

CALVIN AND HOBBS B



THE MORE SENTENCES YOU COMPLETE, THE HIGHER YOUR SCORE! THE IDEA IS TO BLOCK THE OTHER GUY'S THOUGHTS AND EXPRESS YOUR OWN! THAT'S HOW YOU WIN!



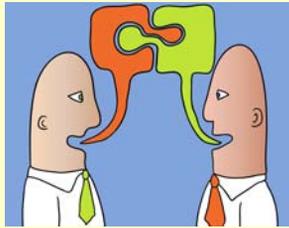
Pause

When **wait times** are increased in the classroom the following also increase:

- Number and Length of student responses
- Evidence of speculative thinking
- Students listening to each other
- Students asking questions
- Quality of the discussion
- Contributions from all students

Rowe, Mary Budd. "Wait Time: Slowing Down May Be a Way of Speeding Up." AMERICAN EDUCATOR 11 (Spring 1987): 38-43, 47. EJ 351 827.

Paraphrase



Lets listeners know:

- that you are listening,
- that you are trying to understand them,
- that you care about their thoughts.

Paraphrasing is not just repeating ...

When you listen to Harry's ideas what comes into your mind from your own experience?

What you say about ... is very interesting. Can you elaborate on it?

Jan tells us ... and that is very like what Alan said when he described ... Is that right Jan and Alan?

Probing increases ...

Clarity

Use of clear language



Precision

Higher level thinking

Not: "It's really big and stuff"

"Given what we have just seen happen, what are some of the things that might happen next if we ... ?"

Good questions are not a matter of chance.



Elements of Questioning

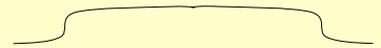
- Intonation
- Plural Forms and Tentativeness
- Invitational stems - question setup
- Empowering Presuppositions
- Inclusiveness
- Cultural Aspects

Intonation

How you speak really matters.

"I did not steal that coat."

Credible voice
(I mean business)



Approachable Voice



Plural and Tentativeness

"What might be some factors that would cause ..."

"In what other ways could you solve this problem?"

"What ideas do you have that may explain this situation?"

Invitational Stems

"As you think about today's lesson ..."

"As you anticipate ..."

"As you envision ..."

"Given what you know about ..."

"As you think about this new assignment, what questions might you ask?"

Presuppositions

Hidden meanings below the surface of language.

"Could Harry get a passing grade in that class?"

"Have you stopped bullying the younger children?"

Empowering Presuppositions

"What are some of the goals you have for this meeting?"

"As you consider your alternatives what seems to be the most promising course of action?"

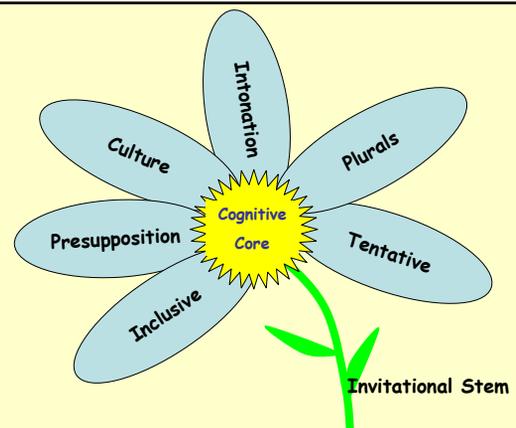
"What personal insights will you carry forward to future situations?"

Inclusive Questions

Questions that invite a discussion with several respondents -

"What are some of the reasons we developed to explain ...?"

"Could those who have had experience with ... share some of your thoughts?"





Look at these questions

- What was the cause of WW I?
- Why did Lady Macbeth wash her hands?
- What causes earthquakes?
- Any questions about your assignment?



Lesson plans incorporate questioning for different purposes

% Time	Activity	Questioning
10 - 15	Introduce lesson.	... to activate prior knowledge, assess understanding, identify misconceptions.
70 - 80	Develop new information/skills	... to guide understanding of new knowledge and promote thinking.
10 - 15	Summarize	... for informal evaluation, re-teach, enrichment, student self assessment

New Terms for Bloom's Taxonomy

- Creating
- Evaluating
- Analysing
- Applying
- Understanding
- Remembering

Questioning to Engage Specific Cognitive Operations

Understanding Remembering	Analyzing Applying	Creating Evaluating
Recall	Compare	Predict
Define	Contrast	Evaluate
Identify	Infer	Speculate
Describe	Analyze	Imagine
Name	Sequence	Envision
List	Synthesize	Hypothesize

Make the Cognitive Operation Explicit

- How might you describe the features of the earth in this photograph?
- Can you identify the parts of the flower in this picture?
- What are some of the things you observe happening when the water is heating?
- Which data helped analyze this problem?
- How can you compare other machines that operate the same way as this one?
- How can you explain the evidence that the tectonic plates are still moving?
- Predict some of the things that might happen if you mixed these two colors?
- How might you evaluate the most energy efficient solutions to this problem?
- What do you hypothesize might happen if we put a saltwater fish in freshwater?



Match the questions to the cognitive skill most needed to answer them.



When confronted with conflicting verbal and non verbal messages, humans inevitably choose the meaning behind the non verbal behavior.



Think about
Posture
Gesture
Inflection
Pitch
Volume
Rate of speech
Language choice
Breathing



Can you recall/imagine a situation where the words and non verbal elements don't match?



With all of these activities it is essential that the teacher

share with the students

the qualities of powerful questions and

make opportunities for students

to develop their own questions.

Teaching **students** how to ask powerful questions

Its power is that it leads to deeper cognition.

The students need to understand the material before they can ask good questions.

You need to teach children how to formulate questions that explore understanding.

Students must feel safe enough to ask questions when they don't understand - not knowing must be seen as an important part of learning.

We invite your continued contact with us



Thinking & Learning In Concert

... promoting the harmonious integration of skillful thinking and learning

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