

Effective Questioning in the Classroom

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Gathering Ideas

IDEAS

REACTIONS

QUESTIONS

CONNECTIONS

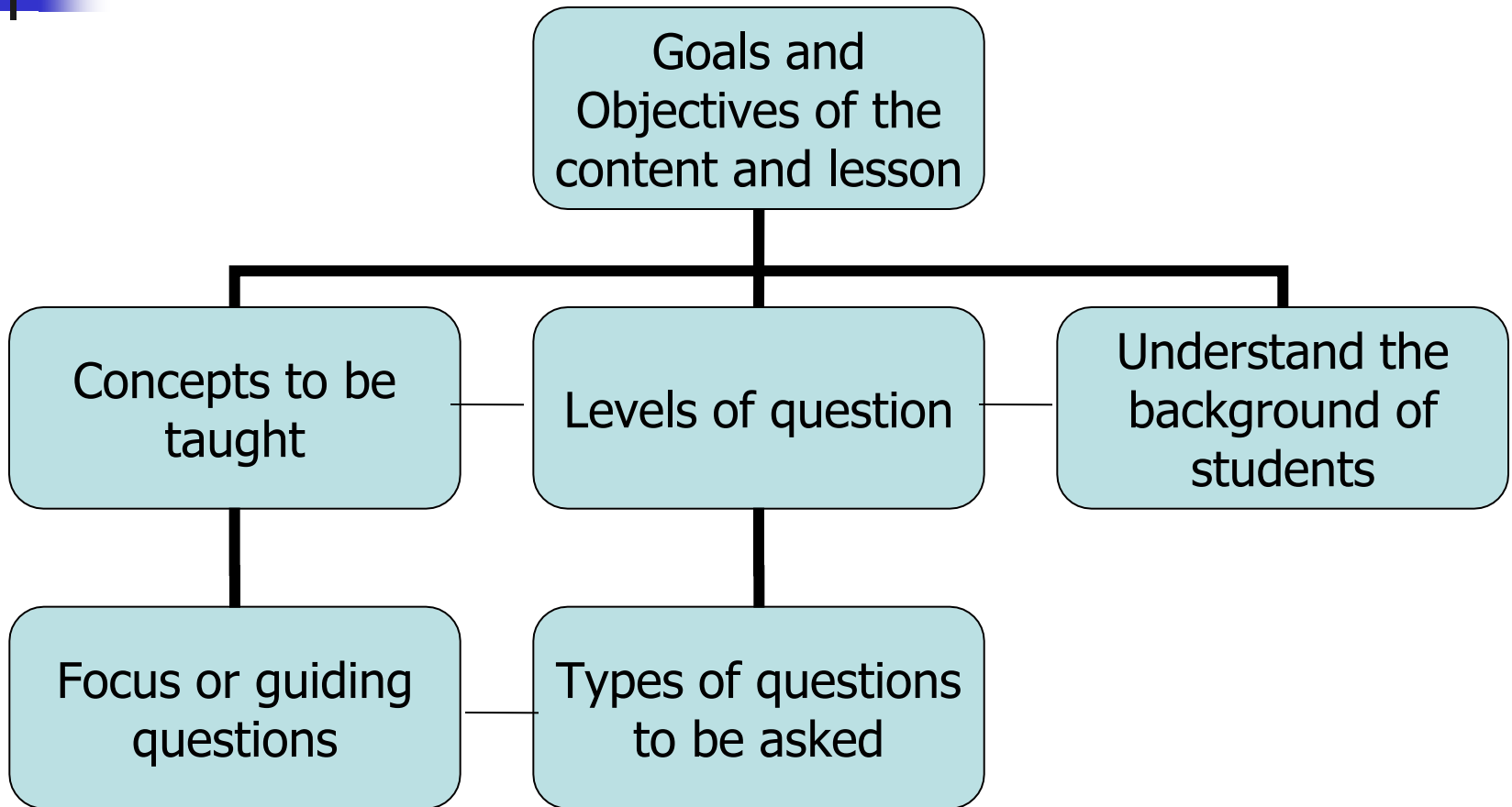


Questioning Inventory

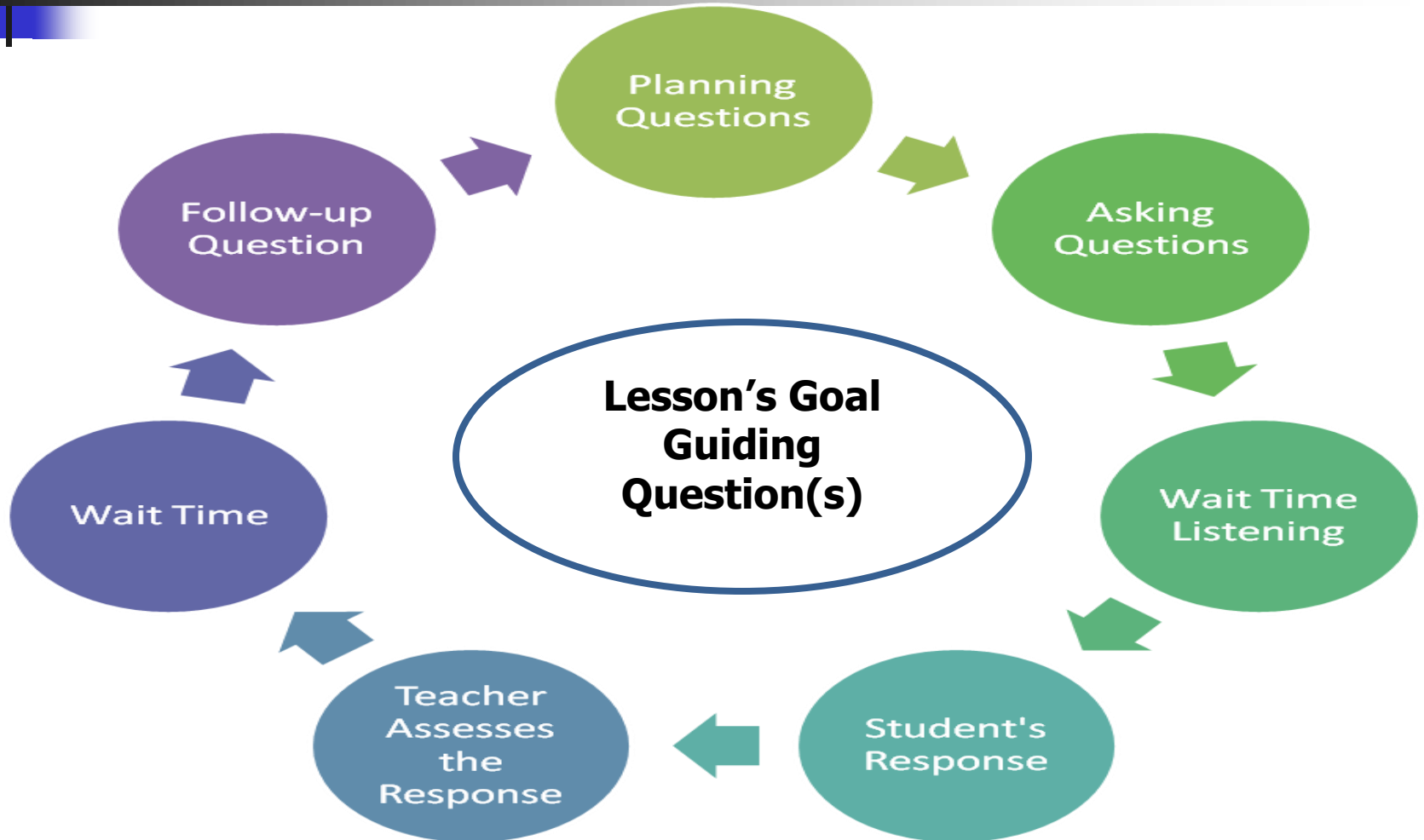
- 1. What is a good question?
- 2. When do you ask questions?
- 3. Why do we need good questioning skills?
- 4. What are some effective strategies for teaching questioning skills?
- 5. What is the role of questioning in effective teaching, learning and assessment?
- 6. Who needs to be a good questioner?
- 7. What is an answer?
- 8. Where in the curriculum can you logically teach questioning skills?
- 9. How do questioning skills help students?
 - Koechlin and Zwaan



Questions and Lessons



Questioning and Planning- The Questioning Cycle

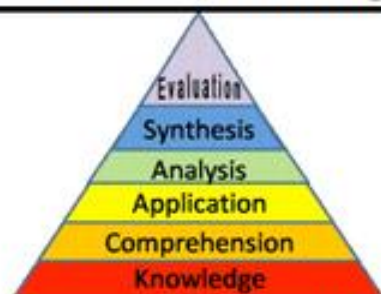




The Taxonomy Table

The Knowledge Dimension	The Cognitive Process Dimension					
	1 Remember	2 Understand	3 Apply	4 Analyze	5 Evaluate	6 Create
A. Factual Knowledge						
B. Conceptual Knowledge						
C. Procedural Knowledge						
D. Metacognitive Knowledge						

Levels of Thinking in Bloom's Taxonomy and Webb's Depth of Knowledge



Bloom's – Old Version (1956)



Bloom's - New Version (1990's)



Webb's DOK (2002)

Bloom's six major categories were changed from noun to verb forms in the new version which was developed in the 1990's and released in 2001. The knowledge level was renamed as remembering. Comprehension was retitled understanding, and synthesis was renamed as creating. In addition, the top two levels of Bloom's changed position in the revised version.

Bloom's Taxonomy	Revised Bloom's Taxonomy
Knowledge <i>Recall appropriate information.</i>	Remembering
Comprehension <i>Grasp the meaning of material.</i>	Understanding
Application <i>Use learned material in new and concrete situations.</i>	Applying
Analysis <i>Break down material into component parts so that its organizational structure may be understood.</i>	Analyzing
Synthesis <i>Put parts together to form a new whole.</i>	Evaluating
Evaluation <i>Judge value of material for a given purpose.</i>	Creating (Previously Synthesis) <i>Put elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning, or producing.</i>

Norman L. Webb of Wisconsin Center for Educational Research generated DOK levels to aid in alignment analysis of curriculum, objectives, standards, and assessments.

Webb's Depth of Knowledge & Corresponding Verbs

**Some verbs could be classified at different levels depending on application.*

Recall and Reproduction *Correlates to Bloom's 2 Lowest Levels*

Recall a fact, information, or procedure.

arrange, calculate, define, draw, identify, list, label, illustrate, match, measure, memorize, quote, recognize, repeat, recall, recite, state, tabulate, use, tell who- what- when- where- why

Skill/Concept

Engages mental process beyond habitual response using information or conceptual knowledge. Requires two or more steps.

apply, categorize, determine cause and effect, classify, collect and display, compare, distinguish, estimate, graph, identify patterns, infer, interpret, make observations, modify, organize, predict, relate, sketch, show, solve, summarize, use context clues

Strategic Thinking

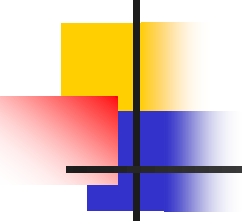
Requires reasoning, developing plan or a sequence of steps, some complexity, more than one possible answer, higher level of thinking than previous 2 levels.

apprise, assess, cite evidence, critique, develop a logical argument, differentiate, draw conclusions, explain phenomena in terms of concepts, formulate, hypothesize, investigate, revise, use concepts to solve non-routine problems

Extended Thinking *Correlates to Bloom's 2 Highest Levels*

*Requires investigation, complex reasoning, planning, developing, and thinking-probably over an extended period of time. *Longer time period is not an applicable factor if work is simply repetitive and/or does not require higher-order thinking.*

analyze, apply concepts, compose, connect, create, critique, defend, design, evaluate, judge, propose, prove, support, synthesize



Common Organizational Patterns For Text and Tests Necessary for Transfer of Information

- **Chronological Sequence**
- **Details and Connection to Main Idea**
- **Definition related to concepts**
- **Summarization**
- **Synthesis**
- **Compare and Contrast**
- **Cause -Effect**
- **Episode**
- **Conclusions**



Solo's Taxonomy of Response

- Prestructural
- Unistructural
- Multistructural
- Relational
- Extended Abstraction

Create Follow-up Questions



- Variety
- Clarification
- Refocus
- Narrow Focus
- Specification
- Propose
- Extension
- Verification/Justify
- Support
- Connections
- Break down thinking
- Select an aspect that needs further development



High Frequency Test Question Words (Springer)

Alliteration	Analogy	Analyze	Argument	Articulate
Central Ideas	Cite	Compare	Comprehend	Conclusions
Contrast	Connect	Connotative Language	Delineate	Demonstrate
Describe	Details	Determine	Develop	Distinguish
Draw	Evaluate	Evidence	Explain	Figurative Language
Identify	Illustrations	Infer	Integrate	Interactions
Interpret	Locate	Metaphors	Moods	Organize
Paraphrase	Points of View	Refer	Retell	Represent
Rhetoric	Simile	Stanza	Structure	Suggest
Summarize	Support	Synthesize	Themes	Trace