



Getting Beyond Recall:

Posing Questions to Ponder, Probe, and Perlustrate

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Learning Objectives

- State at least three reasons why asking effective questions facilitates learning.
- Describe at least two methods for formulating effective questions.
- Formulate effective questions in a role play scenario.



Making the Case...

Does asking effective questions facilitate learning?



Making the Case ...

In what ways does asking effective questions facilitate the learning process?



Thinking more deeply...

In what ways do ineffective questions potentially discourage the learning process?



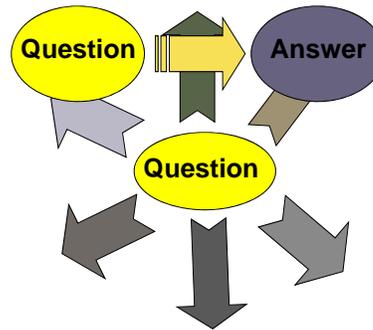
Taxonomy of Questions

- ⦿ Convergent vs. Divergent
- ⦿ Cognitive Level
- ⦿ Knowledge Dimension
- ⦿ Question Circles



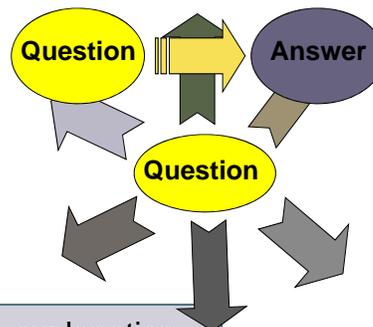
Convergent vs. Divergent

- Convergent Questions
- Divergent Questions



Convergent vs. Divergent

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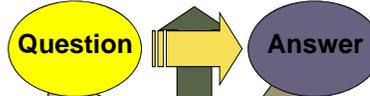


Questions that requires explanation,
extrapolation, or analysis.
Multiple answers.
Also called "open ended" questions



Convergent vs. Divergent

- Convergent Questions



- Divergent Questions

Questions with a specific “correct” response or a finite list of answers. Also called “closed ended” questions.



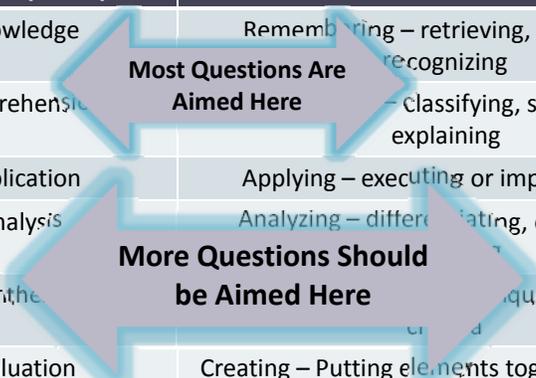
Cognitive Levels

Bloom (1956)	Anderson & Krathwohl (2000)
Knowledge	Remembering – retrieving, recall, and recognizing
Comprehension	Understanding – classifying, summarizing, explaining
Application	Applying – executing or implementing
Analysis	Analyzing – differentiating, organizing, attributing
Synthesis	Evaluating – judging or critiquing based on criteria
Evaluation	Creating – Putting elements together to make functional whole



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Knowledge Dimension

- ⦿ Factual
- ⦿ Conceptual
- ⦿ Procedural
- ⦿ Metacognition

The essential facts, terminology, details or elements learner must know or be familiar in order to understand a discipline or solve a problem in it.



Knowledge Dimension

- Factual
- Conceptual
- Procedural
- Metacognition

Knowledge of classifications, principles, generalizations, theories, models, or structures pertinent to a particular disciplinary area.



Knowledge Dimension

- Factual
- Conceptual
- Procedural
- Metacognition

Knowledge of the methods of inquiry, very specific (well-defined) skills, algorithms, techniques, and methodologies used in a discipline.



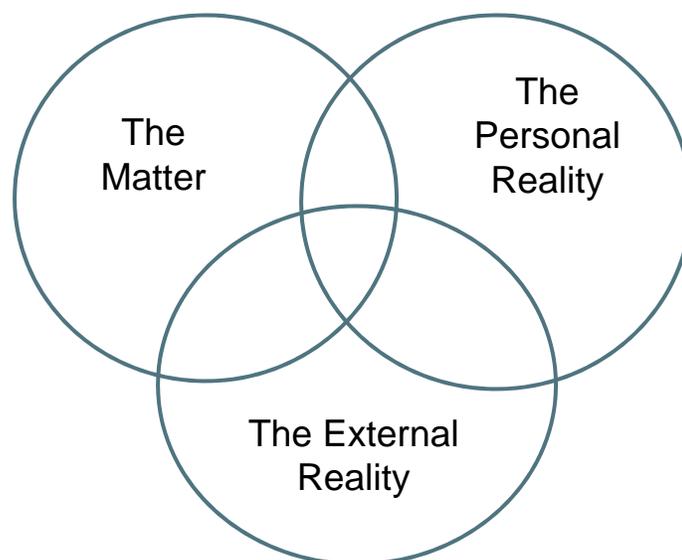
Knowledge Dimension

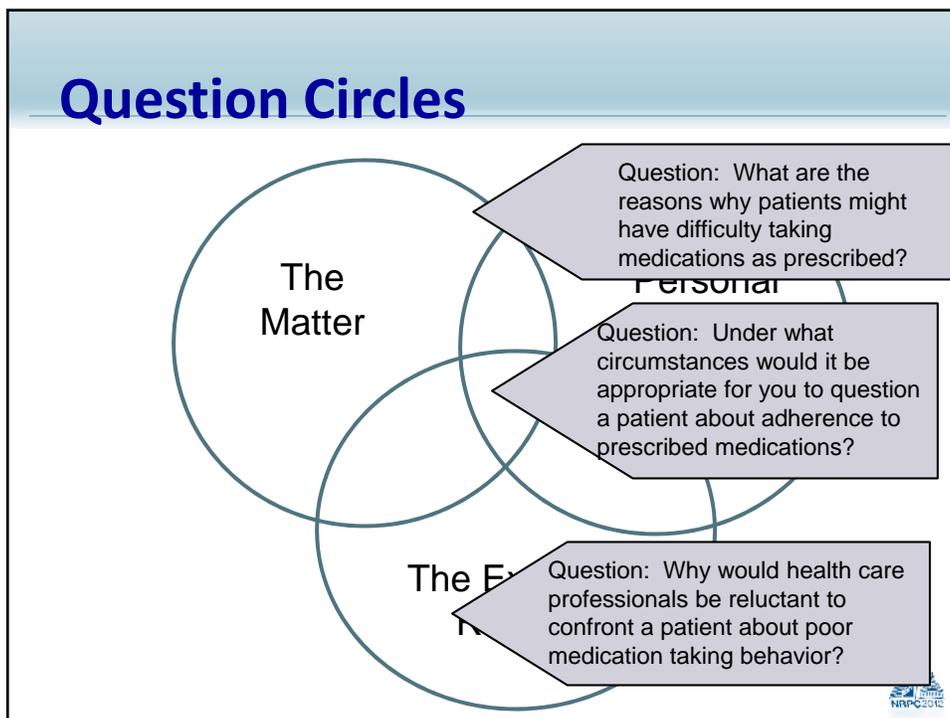
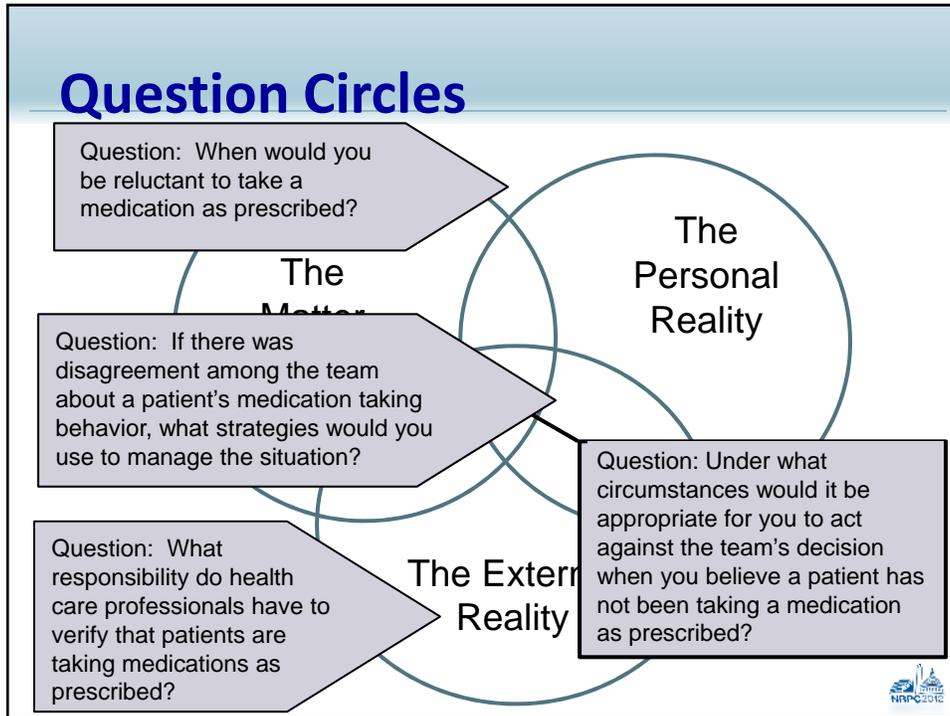
- Factual
- Conceptual
- Procedural
- Metacognition

Awareness of one's own cognitive processes. Reflective knowledge about **how** to approach and solve problems. Knowledge of self.



Question Circles







Case Scenario

Dr. Wellington is meeting with PGY1 Pharmacy Resident Samantha Smith to discuss a patient case. The patient is a 62 year old male who was given a prescription for doxycycline 100mg BID x 10 days. The resident reports that the patient has a 5-day history of a non-productive cough. The resident expresses concern that this might not be an appropriate medication for a respiratory tract infection and wants to call the physician.



Practice – Case Scenario

- Based on the information in the case, write 1 question at a high cognitive level

Bloom (1956)	Anderson & Krathwohl (2000)
Knowledge	Remembering
Comprehension	Understanding
Application	Applying
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Evaluation	Creating



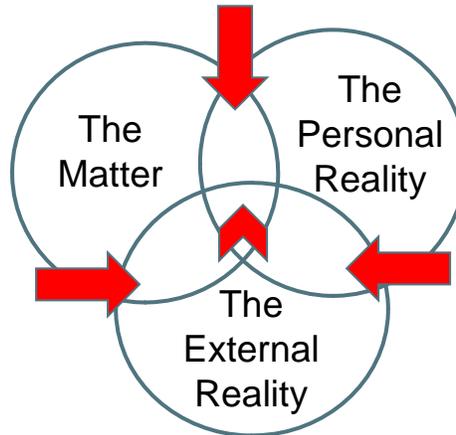
Practice – Case Scenario

- Based on the information in the case, write 1 questions in one of these dimensions
 - Conceptual
 - Procedural
 - Meta-cognition



Practice – Case Scenario

Based on the information in the case, write 1 question at the juxtaposition of *The Matter*, *The Personal Reality*, and/or *The External Reality*



Christenbury, L., and Kelly, P. (1983). *Questioning: A Path to Critical Thinking*. Urbana, IL: ERIC Clearinghouse on Reading and Communication Skills and the National Council of Teachers of English.



Other stuff to consider



Strategies to Improve Your Questions

- ⦿ Psychological Safety
- ⦿ Phrasing/Clarity
- ⦿ Sequencing
- ⦿ Balance
- ⦿ Rapid-Reward
- ⦿ Wait Time
- ⦿ Participation



Socratic Method

- ⦿ A form of inquiry and debate between individuals
- ⦿ A series of questions formulated as tests of logic intended discover the underlying assumptions and beliefs
- ⦿ A useful method to expose common misconceptions and errors in reasoning



Socratic Method

- ⦿ Topic is mutually agreed on ahead of time
- ⦿ Learner attempts to answer all questions
- ⦿ Teacher and learner accept any **correctly reasoned** answer. The reasoning process is more important than pre-conceived facts or beliefs
- ⦿ Questions are formulated to expose errors in reasoning
- ⦿ Teacher often has knowledge of errors in reasoning
- ⦿ When teacher makes an error of logic or fact, student is expected to draw attention to the error



The “Art” of Pimping

- ⦿ Pimping is about POWER
- ⦿ Characteristics
 - Questioning is done in public
 - Questions are usually convergent and the questioner is seeking a specific answer
 - Questions are often arcane facts
 - Questioner demonstrates his/her superior knowledge



Conclusions

- ⦿ Effective questioning enhances learning
- ⦿ Ineffective strategies can quash learning
- ⦿ Use the taxonomy of questions to formulate better questions
 - ➔ Convergent vs. divergent
 - ➔ Cognitive level
 - ➔ Knowledge dimension
 - ➔ Question circles
- Questions should promote dialogue and discussion among all participants



Resources/Further Reading

Walsh JA, Sattes BD. Quality Questioning: Research-Based Practice to Engage Every Learner. Thousand Oaks, CA: Sage Publishing, 2005.

McComas WF, Abraham L. Asking More Effective Questions. Available at: http://cet.usc.edu/resources/teaching_learning/docs/Asking_Better_Questions.pdf

Wilén, WW. Questioning Skills for Teachers, 3rd edition. Washington, DC: National Education Association, 1991. Available at: <http://eric.ed.gov/PDFS/ED332983.pdf>

