Questioning As An Effective Teaching Tool

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No Conflicts of Interest or Disclosures

Objectives

1. Discuss the framework on how to formulate questions for various levels of learners
2. Match different teaching styles to levels of learners and to specific teaching goals
3. Demonstrate the use of questioning in a supportive, non-confrontational manner
4. List techniques for effective questioning that can be used for faculty development

Why should we ask questions?

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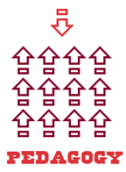

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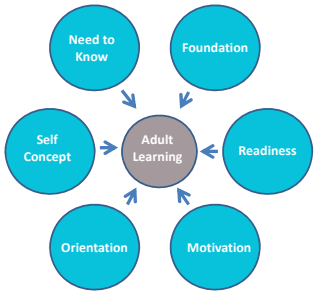

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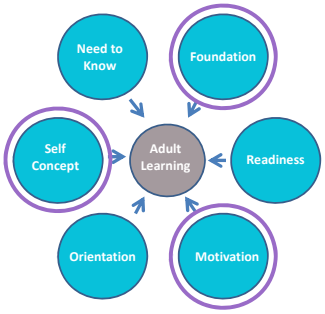

Let's Practice: Case

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- This is a 17-year-old girl with newly diagnosed SLE, admitted yesterday for generalized edema.

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Summary
17y sexually active girl with SLE and suspected nephritis s/p biopsy with new onset dysuria. For her dysuria, suspect a UTI and so recommend starting IV ceftriaxone and checking another HIV test. I suggested that to her but she refused the HIV test.

Teaching Styles and Questioning

- **Facilitative:** *encourages feelings*
- **Collaborative:** *open and exploratory*
- **Suggestive:** *suggests alternatives*
- **Assertive:** *direct / focused questions*

Teaching Styles and Questioning

- **Assertive:** *direct / focused questions*
  - What is the dose of metronidazole for the treatment of amoebiasis?
  - Demonstrate to me how to hold an otoscope
  - What questions would you ask to characterize a headache?

Teaching Styles and Questioning

- **Suggestive:** *suggests alternatives*
  - What might be advantages of an MRI in this setting?
  - Under what circumstances would you do a pelvic exam?
  - Another thing that has worked for me has been…what are your thoughts?

Teaching Styles and Questioning

- **Collaborative:** *open and exploratory*
  - What do you think is going on?
  - Okay so your working diagnosis for this patient is _____. What would you recommend for treatment and why?

Teaching Styles and Questioning

- **Facilitative:** *encourages feelings*
  - How comfortable are you at doing a history?
  - That was really uncomfortable for me. How did you feel during that encounter?

Teaching Styles and Questioning

- **Facilitative:** *feelings / reflective*
- **Collaborative:** *open / exploratory*
- **Suggestive:** *alternatives / leading*
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Questions from the Case

Teaching Styles and Questioning

- **Facilitative:** *feelings / reflective*
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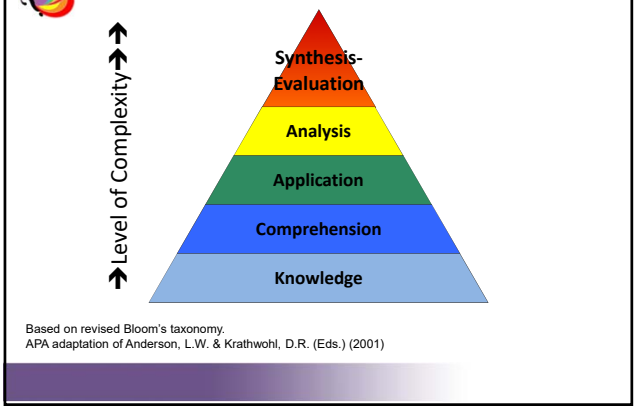
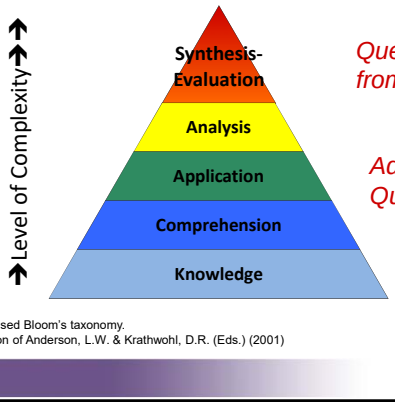
Attitudes & Feelings	Exploratory Time-intensive
Skills	
Problem solving	
Knowledge	Fact based Time-efficient

Bloom's Taxonomy



Based on revised Bloom's taxonomy.
APA adaptation of Anderson, L.W. & Krathwohl, D.R. (Eds.) (2001)

Bloom's Taxonomy

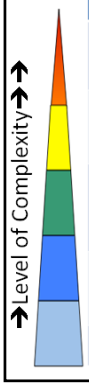


Questions from the Case

Adapting Questions

Based on revised Bloom's taxonomy.
APA adaptation of Anderson, L.W. & Krathwohl, D.R. (Eds.) (2001)

Blooms Taxonomy: Examples



Category	Definition	Words	EXAMPLES
Synthesis-Evaluation	Judge Make value decisions	Critique Design Create	Based on the infant's signs and symptoms, critique the plan proposed by the resident.
Analysis	Subdivide into component parts	Rank Compare/ contrast	Compare and contrast methods for obtaining a urine specimen for culture in an infant.
Application	Relate facts to case Problem-solve	Interpret What if	Here is our patient's CBC… how would you interpret these results?
Comprehension	Understand Paraphrase	Describe Explain why	Explain why urine cultures are indicated in addition to a UA in children suspected of having a UTI.
Knowledge	Memorize Recall	Define List, What is	List the ways a specimen can be obtained for urine culture.

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Let's Practice: Case

Table A. Formulating Questions based on Teaching/Questioning Style

	Style	i.e.	Used for:	Formulate a Question
Exploratory Time-intensive ↑ ↑ Fact based Time-efficient	Facilitative	Reflective	Attitudes and Feelings	
	Collaborative	Open	Skills	
	Suggestive	Leading	Problem Solving	
	Assertive	Focused	Knowledge	

Table B. Formulating Questions based on Taxonomy/Level of Learner

Level	Category	Definition	Sample words	Formulate a Question
R4 ↑ R1 ↑ MS	Synthesis-Evaluation	Judge Make value decisions	Critique Design Create	
	Analysis	Subdivide into component parts	Rank Compare/ contrast	
	Application	Relate facts to case Problem-solve	Interpret What if	
	Comprehension	Understand Paraphrase	Describe Explain why	
	Knowledge	Memorize Recall	Define, List What is	

Challenges & Strategies

What are some challenges you have faced while questioning?

What are your strategies for posing questions to ensure a non-confrontational learning environment?

Survey of Learners
- UC Davis, Stanford, UCSF
- Level of training (MS1-Fellow)
- Q1: Questioning that did not enhance learning; ineffective
- Q2: Questioning that did enhance learning; effective

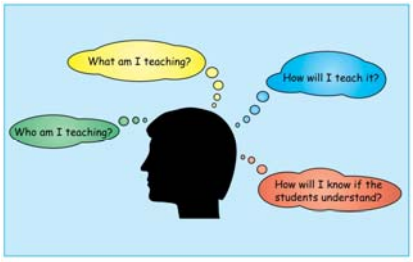
Q1: Not effective

Themes & Exemplary Quotes		
"Negative learning environment" Not supportive	11	"High pressure, in front of many people, aggressive questioning, likelihood of being mocked..."
Questioning without teaching or application	8	"At the beginning of my third year, I was asked complicated questions …I needed scaffolding to think through to the answer, but this was not given to me…[and he] never closed the loop with my eventual reading or assessed that final comprehension."
Unclear, ambiguous Qs not relevant to clinical care	5	"Being pimped on clinically irrelevant details"
Closed Qs focused only on establishing facts	2	"The questions were focused on the answer rather than the thought process."
Multiple Qs per goal Endless questioning	2	"When the questioning was persistent despite me not knowing an answer."

Q2: Effective

Themes & Exemplary Quotes		
"Positive learning environment" Supportive Qs posed to whole group	14	"Setting the learning environment as collegial and taking off the pressure actually helped me think more clearly about the answers and I made fewer errors."
Open-ended Qs Clarifying Qs	9	"When he asked a complex question that I did not answer correctly, he would ask easier questions (not tell) to help get me to the eventual answer…helped me figure out where I had gone wrong rather than memorizing a new answer."
Clear, unambiguous Qs Relevant to clinical care	3	"Question was specific, answerable."
Questioning followed by explanations	3	
Learner level appropriate Qs	3	"I think the best questions are from someone who explores your level of understanding and push you one step further." "Emphasized wanted to understand our level of learning to understand where to start teaching us."

Effective Questioning Principles



Questions to ask yourself when planning a clinical teaching session

Spencer J. Learning and Teaching in Clinical Care. *BMJ.* 2003;326:591-594.

Effective Questioning Principles

Questioning Do's

- Supportive setting (positive learning climate)
- Open-ended or clarifying questions
- Clarifying questions after weak responses
- Ask questions of volunteers and non-volunteers
- Construct only one question per goal
- Reflect and restate the learner's answer
- Get commitment from others (especially when the answer is correct)!

Effective Questioning Principles

The use of wait time to prompt learner responses

- Wait time #1 between question and response
  - At least 5 seconds before any comments
  - Allow the learner to respond fully
- Wait time #2 between response and reply
  - Allow for other learner response or elaboration
  - Resist temptation to answer learners' questions—use counter questions instead

Toolkit

Framework for sharing key points from our workshop with colleagues at your home institution

- Background
- Interactive options
  - (1) Teaching/Supervising Style
  - (2) Blooms Taxonomy
  - (3) Learning Environment
- Wrap-up, commitment to change, Qs
- References
- Power Point Slides

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Did you provide your email?

Conclusions

1. Questioning can be an effective method of teaching learners at all levels
2. Questioning does not have to be confrontational to be effective
3. Questioning can help the teacher to redirect the learner and advance up the learning hierarchy
4. Match questions to learner level, teaching goals

Commitment to Change

Any questions about questioning

?

Please complete the evaluation!