

COMSEP Workshop Faculty Development Toolkit: Questioning As An Effective Teaching Tool

This toolkit provides a framework for participants to share key points from our workshop with colleagues at their home institutions. It is divided into the following sections, with the idea that one could use a 30-minute time block to present the background, a targeted single focus area most relevant to setting/audience, and finish with questions/commitment to change...or incorporate multiple focuses if additional time available.

Recommended format:

- **Background: 5-10 minutes**
- **Focus areas: 15 minutes, either option A, B, or C**
- **Commitment to change, questions: 5-10 minutes**

TOOLKIT TABLE OF CONTENTS

- **Background**
 - Introductory information
- **Foundational Case**
 - Use with Focus area A or B
- **Focus areas**
 - Three interactive options (A, B, or C)
 - A: Relates to Foundational Case
 - B: Relates to Foundational Case. Longest activity.
 - C: Shortest Activity.
- **Additional References**
- **Slides**
- **Tables for Focus Activity A and B**
 - Completed with examples (participants use to help with Focus Activity A or B)
 - Blank (for completion in Focus Activity A or Focus Activity B)
 - Completed for Foundational Case (distribute at end)

Background

(Slides ‘Why Should We Ask Questions’)

Have your audience think of a time when they were being asked questions, and they had a negative or not effective experience. Ask 1-2 people to share their experience and explain why it was negative/not effective.

Why ask questions? Have participants share their thoughts / answers about why we ask questions

- Questions focus the learner’s attention on what is to be learned
- Questions illicit deeper thinking processes
- To evaluate the learner’s understanding of the subject matter
- To give the learner the opportunity to practice and clarify his/her knowledge of the subject matter
- To stimulate higher level thinking about the subject matter through discussion
- Questions that stimulate thought require prior thought

Engaging adult learners: pedagogy vs andragogy

- **pedagogy** (‘pedə,gājē,-,gägē/) *noun*: the method and practice of teaching, esp. as an academic subject or theoretical concept.
<http://www.howjsay.com/index.php?word=pedagogy&submit=Submit>
- **andragogy** (‘andrə,gājē,-gägē/) *noun*:^[SEP]the method and practice of teaching adult learners; adult education.
<http://www.howjsay.com/index.php?word=andragogy&submit=Submit>
- 6 principles of andragogy:
 1. learner’s need to know
 2. self-concept of the learner
 3. prior experience of the learner
 4. readiness to learn
 5. orientation to learning
 6. motivation to learn

Important considerations

- Impromptu questioning often very effective; with specific questioning goals questioning techniques (and learner experience and the learning environment) may be enhanced
- Techniques can be adapted if a novice learner has particular experience in a given area or if you learn that an advanced learner has limited experience

Foundational Case (to use with Focus A or Focus B)

You are pre-rounding and an intern approaches you and presents the following patient.
(to consider: present as well are a medical student, who saw the patient with the intern, and/or a senior resident, who saw the patient with the intern.)

PRESENTATION:

HPI

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

24-Hour Events

- Her renal biopsy under general anesthesia (uneventful)
- She denies pain at the biopsy site
- She now complains of burning while urinating & increased frequency

ROS & Past History

- There's no vaginal discharge
- She's been in a monogamous relationship for a while, uses condoms
- She had an HIV test a week ago that was negative

Exam

- Afebrile, vitals signs are normal
- No flank or abdominal tenderness
- Moderate pitting edema of her legs

Summary

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

Focus A: Questioning and Teaching/Supervising Style
(Slides: Let's Practice: Case *and* Teaching Styles and Questioning)

Goals:

- Discuss framework on how to formulate questions based on teaching style
- Practice adapting questioning to levels of learners based on teaching/supervising style

Activity: Application of teaching styles to learner readiness

- Present Teaching/learning style model (Slides: Teaching Styles and Questioning)
- Present Foundational Case (Slides: Let's Practice: Case)
- Activity:
 - Distribute Completed Table A with non-case examples for reference
 - Participants complete Blank Table A for Foundational Case
 - Debrief
 - Distribute Completed Table A for Case post-activity

Optional pre or post-session activity:

Refer participants to Teaching Module 2 on the U of Virginia website to think about their own preferred teaching style(s) and learning style(s):

- <http://www.med-ed.virginia.edu/courses/fm/precept/module2/index.htm>

It's part of the University of Virginia's Family medicine Clerkship Preceptor Development Program (PDP).

To access the other modules go to:

- <http://www.med-ed.virginia.edu/courses/fm/precept/index.htm>

Focus B: Questioning and Blooms Taxonomy
(Slides: Let's Practice: Case and Blooms Taxonomy)

Goals:

Discuss framework on how to formulate questions for various levels of learners
Practice adapting questioning to different levels of learners

Activity: Application of teaching styles to learner readiness

- Present Bloom Taxonomy model (Slides: Blooms Taxonomy)
 - Bloom's Taxonomy of cognitive objectives provides a hierarchy for student/learner thinking.
 - This framework incorporates low to high levels of thinking and can be used to meet the needs of learners at different levels.
 - As teachers in medicine, we many times keep our questioning at the lower orders of thinking and don't guide our learners to think more critically. Use this pyramid as a guide to working up the thinking hierarchy and enhancing learning through questioning.
- Present Foundational Case (Slides: Let's Practice: Case)
- Activity:
 - Distribute Completed Table B with non-case examples for reference
 - Participants complete Blank Table B for Foundational Case
 - Debrief
 - Distribute Completed Table B for Case post-activity

Optional pre-session activity:

Distribute link to ABP Blog entry: Future of Testing: Can You Draft a Question Requiring Skills Beyond Recall?

- <http://abpeds.wordpress.com/2014/03/12/future-of-testing-can-you-draft-a-question-requiring-skills-beyond-recall/>

Optional post-session activities:

Distribute link to ABP Blog entry: Future of Testing: Can You Draft a Question Requiring Skills Beyond Recall?

- <http://abpeds.wordpress.com/2014/03/12/future-of-testing-can-you-draft-a-question-requiring-skills-beyond-recall/>

Distribute this article, ATTN: Pages 18-19 and Table 2.

- Sachdeva AK. Use of effective cognitive questioning to enhance the cognitive abilities of students. *J Cancer Educ.* 1996;11:17-24.

Focus C: Questioning and the learning environment

Goal:

Describe supportive, non-confrontational questioning principles that are not “pimping”

Activity: Brainstorm Challenges and Strategies (No associated slides)

- Divide group into two parts. Brainstorm; list as many as you can.
 - One group brainstorms **challenges**: “What are some challenges you have faced while questioning?”
 - Other group brainstorms **strategies**: “What are your strategies for posing questions to ensure a non-confrontational learning environment?”
- Debrief
- Summary: Most from Spencer, 2003, BMJ. (Slides: Effective Questioning Principles)
 - Ensure supportive setting—don’t need to be threatening to be challenging
 - Statements make good ?’s—“students sometimes find this difficult to understand” instead of “Do you understand?” (which may be intimidating).
 - Follow a “poor” answer with another question
 - Resist the temptation to answer learners’ questions—use counter questions instead
 - Use clear, unambiguous questions
 - Wait time is critical to good questioning technique: Increases the length of the student responses, decreases failure to respond to questions, increases student exchanges and changes social dynamics of the session
 - Allow adequate time for students to give a response (5-10 seconds)
 - Listen fully to student response.

Optional pre-session activities:

1) Distribute the following question via email:

“What is one of your strategies for posing questions to ensure a supportive learning environment?”

2) Potential 3-question pre-workshop survey to learners from your community (or even faculty): Poll learners about their perspective on questioning; share results at workshop

- Question 1: Level of training
- Question 2: Think of a time in medicine when you were asked questions and you felt the questioning DID NOT enhance your learning. What were some of the reasons the questioning was ineffective? Think about the situation, the people present, the questioner, the questionee, other factors, or all of these.
- Question 3: Think of a time in medicine when you were asked questions and you felt the questioning DID enhance your learning. What were some of the reasons the questioning was effective? Think about the situation, the people present, the questioner, the questionee, other factors, or all of these.

Optional post-session activity:

Distribute one of the following articles

- Spencer J. Learning and Teaching in Clinical Care. *BMJ*. 2003;326:591-594.
- Brancati FL. The art of pimping. *JAMA*. 1989;262(1):89-90.

Additional Articles

- Questioning and teaching style
 - Quirk ME. *How to Learn and Teach in Medical School: A Learner-Centered Approach*. Springfield, IL: Charles C Thomas Pub Ltd; 1996
- Questioning and taxonomy
 - ABP Blog entry: Future of Testing: Can You Draft a Question Requiring Skills Beyond Recall? <http://abpeds.wordpress.com/2014/03/12/future-of-testing-can-you-draft-a-question-requiring-skills-beyond-recall/>
 - Sachdeva AK. Use of effective cognitive questioning to enhance the cognitive abilities of students. *J Cancer Educ*. 1996;11:17-24.
- Questioning and learning environment
 - Spencer J. Learning and Teaching in Clinical Care. *BMJ*. 2003;326:591-594.
 - Brancati FL. The art of pimping. *JAMA*. 1989;262(1):89-90.
 - Sachdeva AK. Use of effective cognitive questioning to enhance the cognitive abilities of students. *J Cancer Educ*. 1996;11:17-24.

SLIDES HERE

COMPLETED TABLES WITH NON-CASE EXAMPLES (Distribute to help complete Focus A or Focus B activity)

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	How comfortable are you at doing a history? That was uncomfortable for me. How did you feel during that encounter?
	Collaborative	Open	Skills	What do you think is going on? So your working diagnosis is ____. What would you recommend for treatment and why?
	Suggestive	Leading	Problem Solving	What might be advantages of getting an MRI? Another way to do that is...what are your thoughts?
	Assertive	Focused	Knowledge	What is the dose of Flagyl for amoebiasis? Show me how to hold an otoscope.

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	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.

BLANK TABLES

(Complete as Focus A or Focus B activity)

Table A. Formulating Questions based on Teaching/Questioning Style

	Style	i.e.	Used for:	Formulate a Question
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	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
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	Application	Relate facts to case Problem-solve	Interpret What if	
	Comprehension	Understand Paraphrase	Describe Explain why	
	Knowledge	Memorize Recall	Define, List What is	

COMPLETED TABLES FOR CASE (Distribute after Focus A or Focus B activity)

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	How comfortable were eliciting the sexual history? How did you feel during that part of the encounter?
	Collaborative	Open	Skills	Why do you think she has a UTI? How would you apply the UA results to our patient?
	Suggestive	Leading	Problem Solving	What are the advantages of repeating the HIV test? One thing I like to do is have at least 3 things on my differential...what are your thoughts?
	Assertive	Focused	Knowledge	List the elements you include in a sexual history. What is the antibiotic dose an uncomplicated UTI?

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	Your colleague recommends imaging and oral levofloxacin: critique this proposed plan.
	Analysis	Subdivide into component parts	Rank Compare/contrast	Compare and contrast antibiotic options. How confident are you the patient has a UTI, defend.
	Application	Relate facts to case Problem-solve	Interpret What if	Here is our patient's urinalysis ... how would you interpret these results?
	Comprehension	Understand Paraphrase	Describe Explain why	Explain why it is important to obtain a sexual history in any teenager.
	Knowledge	Memorize Recall	Define, List What is	What are questions you ask to obtain a sexual history.