

Creation of an Active Learning Environment in the Lecture Setting

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Disadvantages of Traditional Lectures



Why promote Active Learning in lectures?

- Increase learning with active participation
- Improve attention span and motivation
 - Increased memory
- Increased faculty and resident satisfaction

Sternert Y and Snell LS. Interactive Lecturing: strategies for increasing participation in large group settings. Med Teacher 21:37-42, 1999

Passive vs. Active Learning

Is the purpose of conducting lectures for the faculty to teach or is it for the learners to learn?

- Shift the focus to the learner
- Don't view your lecture just as a delivery of information
- Bi-directional flow of information

*What is most important at the end of the lecture is what the residents **LEARNED** and not what was taught!*

Barriers to Interactive Lectures

Sternert Y and Snell LS. Interactive Lecturing: strategies for increasing participation in large group settings. Med Teacher 21:37-42, 1999

- Losing control of audience
- Not being able to cover all content information
- Not knowing the answer to the questions posed by residents
- Time it will take to alter present lectures or create new ones

How do we promote active learning
in didactic lectures?

Attributes of the Effective Medical Lecture

Case-based format

- Better retention of material
 - 'Stories' are easier to retrieve than conceptual memory
- Problem solving

Interactive

Higher order questioning

Successful Lecturing: A prospective study to validate attributes of the effective medical lecture. J Gen Intern Med 2000;15:366-371

AMEE Medical Education guide no. 22: refreshing lecturing: a guide for lectures. Medical Teacher 2001;23:231-244.

Interactive Techniques

- **Questioning the audience**
 - Wait time (> 5 secs), ask the whole audience
 - Breaking into small groups or pairs
 - Think-pair-share
- **Completing worksheets**
- **Using audience response systems**
- **Simulation or role play**
- **Videotapes**

Lower vs Higher Order Thinking

Lower level objectives	Verbs
Knowledge	Define, list, state, name
Comprehension	Identify, explain, recognize, discuss

Higher level objectives	Verbs
Application	Apply, demonstrate, illustrate, interpret
Analysis	Analyze, categorize, compare, differentiate
Synthesis	Design, formulate, plan, manage
Evaluation	Choose, critique, rate, appraise

Higher Order Questioning

How, what if, when, why..?

- Identify the patient problem?
 - *What do you think is the main problem?*
- Data acquisition
 - *What historical info will you obtain?*
 - *What will you be looking for on physical exam?*
- Create a differential
 - *What do you think could be the cause (s)?*
 - *Anything else could be causing this?*
 - *Can you compare and contrast these diseases?*
 - *What if...?*

Higher Order Questioning

- Justify their answers
 - *Why do you think ____?*
- Physical exam or lab tests or radiographs
 - *How do you interpret this?*
 - *How does it fit with your diagnosis?*
- *Can you expand your answer or explain further?*
- *How would you approach this patient?*

Review an Interactive Lecture

Getting Started: How to Create an Interactive Lecture

- Identify a few key essential points
- Create one or more cases
 - Determine how to reveal case
- Create a worksheet
 - Formulate questions/structure
- Develop a few slides
 - pictures, summary points, diagrams
- State key elements in beginning or end

Other tips...

- State the organization of the lecture
- Ask clear questions
- Pause after each question >5sec
- Ask them to recall similar cases
- Make them justify their answers
- Incorporate basic science principles