

Active Learning in Large Groups Tip Sheet

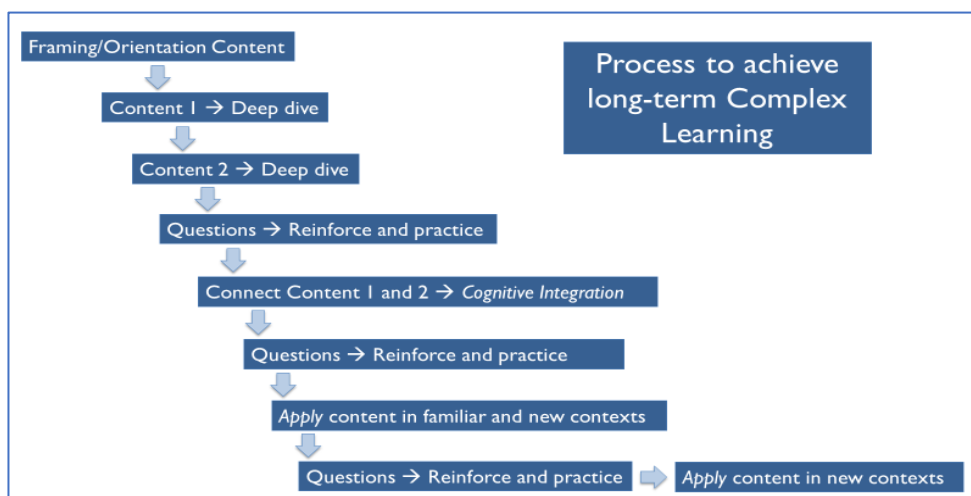
There is evidence that active learning helps students achieve the learning outcomes better than pure lecture. Medical school requires complex learning as there are many levels of content and skills to be acquired and performed competently. The following are some tips to help you in your development and facilitation of active learning. Thank you for teaching an active learning large group session.

General/Getting Started

- Time is of the essence. Focus on the 3 most important things and 3 most difficult things, which should be directly related to the session learning objectives. (See resources box for how to develop learning objectives)
- Ensure that the students can apply this content in class by posing questions, problem-solving and clinical cases.
- When possible, supplement the difficult concept content with additional videos, Voice over PowerPoints, articles and websites. (NOTE: The IHS library can help you identify these resources. Contact ihslibrary@shu.edu)
- Pre-work should focus on the foundational content that can be learned independently. If the pre-work is identified by the course director, become familiar with it and use it in class. (See resources box for guidance on selecting pre-work)
- Develop formative and summative questions that have students demonstrate they can achieve the objectives. (Discuss with course director and see resources box below.)

1) USE A GOOD STRUCTURE AND FLOW OF YOUR CONTENT

- Provide a framework for your session – introduce why the content is important and include an agenda of how they will learn this in the session.
- Use the SOM PPT template (white background and key components of an effective learning session).
- Engage the learners right from the start – with an interesting problem, case, humor or other interesting activity to get them interested in learning more.
- Ask Course Directors what relevant content was taught previously and what will follow. Try not to ask students if they were taught content before OR assume that any content has been taught.
- Keep content level consistent with first and second-year medical students' knowledge.
- Intersperse the content with problems and cases.
- Tell a story and let the content flow from beginning, middle to the end. Use the Summary PPT at the end.



- Complex learning requires consideration of cognitive load and practice for deep learning.
- Providing students with a concrete building of content, reinforcement, application and practice is the theory around complex learning.
- Our active learning strategy is designed to teach complex learning at all levels.

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2) USE THE PRE-WORK IN CLASS

It is important to use the assigned pre-work content in the class. This tests the students' knowledge and confirms it is an important part of the session content.

- Assign some questions to pairs or groups prior to class and have them come prepared to present their answers.
- Create a short quiz for the students to take prior to the session.
- Use polling questions at the beginning of class.
- When possible, record short modules for the students to use before as pre-work and after as study material.

3) EMPLOY PROBLEMS AND CASES FOR PAIRS AND GROUPS TO SOLVE (See last page for tips)

This ensures students are applying and practicing the content and can demonstrate to you and to themselves that they can use the content. After introducing a major concept or mechanism, present problems that students will solve in pairs or groups. Choose activities that are relevant to the 6 critical and most difficult concepts. Include 4-6 of these in a session (depending on complexity of question, it may take longer or one question may include multiple levels of questions)

- When possible, start with introducing a case in the beginning, then, continue to have the case unfold and have the students discuss the full case at the end.
- Ask students to discuss questions in pairs.
- Put together groups of 4 or 5. Assign roles – one to scribe, one to report, one to research, one to keep time. Give everyone a few minutes to come up with answers and be prepared to report out.
- For processes or mechanisms – Have students draw these out on the whiteboard or piece of flipchart paper. They should assign roles and be prepared to share with the class.
- Use a short answer polling technology to assign students questions or ask students to type in their own questions that are answered by the class.
- Occasionally employ games to test and practice knowledge and lighten the intensity.

4) TIPS FOR FACILITATING IN THE CLASSROOM

- Be prepared. Run through the session as if delivering live. You will find your stumbling blocks and can correct them prior to being in front of the students.
- When asking questions, **pause**, and wait for the answer. Always ask the students to explain, why their answer?
- At the introduction, challenge each students to come up with one question for the class.
- Walk around the room and call on students in different sections of the room.
- Try to resist taking answers from the same students and ask for volunteers from those you haven't heard from.
- Challenge students with problems that are not too difficult or too easy.

RESOURCES/TOOLS (Check with your Course Director or Office of Medical Education for these):

- Developing Learning Objectives PPT
- Selecting Appropriate Pre-work PPT
- Large Group Active Learning PPT
- Contact ihslibrary@shu.edu
- How to Develop MCQ Tests PPT
- How to Develop a Large Group Active Learning PPT

REFERENCES:

IAMSE How to Guide for Active Learning, Edited by Alice Fornari, EdD, RD, Ann Poznanski, MD, PhD

Taxonomy of Educational Objectives, Benjamin Bloom, 1954

10 Steps to Complex Learning: A Systematic Approach to 4 Component Instructional Design, Merrienboer, Kirschner, Routledge, 2018

Active Learning Increases Student Performance in Science, Engineering & Math, Freeman, S., et. al., Proceedings of Academy of Sciences, May 12, 2014.

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6 Suggested Activities for Engaging Students in the Large Group Classroom

#1 Pre-work is class work

Ask students questions about the pre-work to ensure they are ready to move into the more difficult concepts.

When to use: Every session. There are several ways to do this, including in class polling, pre-class online quiz and assignments.

How:

- Develop a few questions 3-10 around the pre-work content. These can be knowledge-based multiple-choice, or short answer that tests whether the students are ready to move into the more difficult concepts.
- For a pre-class online quiz, consult with the course coordinator on the best way to enter the questions and distribute to the students. If the quiz is available at least one week in advance of the class, you can review the answers and can see where students may be needing an in class focus.
- If you prefer, you can use the Audience Response System, such as TurningPoint or Slido to ask the students the questions at the start of class. Spend time on the questions that the students get wrong. Consult with the course coordinator or Instructional design team as these need to be set up ahead of time.
- Assign a problem or multiple questions to be completed prior to the class by pairs of students. In class, put the pairs into groups of 6-8 and have them discuss .

#2 Use a Case throughout the Session and have groups or pairs discuss

When to use: Every session can benefit from this type of activity to examine the clinical relevance of the topics. How deep to get into the case, with a diagnosis, treatment and management, will depend on the course and where the topics are introduced in the curriculum.

How:

- Identify a common case that is significant to the content and can be used throughout the session.
- Introduce the case – chief complaint, ask the students to work in pairs to discuss what they think is happening and why? Call on one or two pairs to answer.
- Provide more content, then bring the case back, with more content. Ask the students to work in pairs again, what would they want to know? What tests would they order.
- Provide more content, then bring the case back again with test results and a diagnosis. Ask the students in pairs to discuss treatments. Ask what treatments are suggested and why?
- Provide the case fully, and introduce another element of the case making it more complicated, ask students in groups to discuss the full case, with the new complications and what would be the treatment and management of the patient.
- Ask one or two groups to present.

#3 Draw it Out! Small groups draw out a key process or mechanism

When to use: This activity is good for explaining a difficult concept, process or mechanism that is foundational for learning how things work in relation to how they can be treated. Students will draw these out in groups together.

How:

- Introduce the mechanism/process in the lecture or pre-work so that students have a good visual representation.
- As the content is discussed and you reference various parts of the process or mechanism, have the students start to draw out the diagram and have them highlight the areas that you are discussing.
- Introduce a case or discuss how the mechanism/process is disrupted or not working properly. Have the students imitate this and explain what happens with the disruption.
- Introduce treatments and have the students explain how the treatments impact the mechanism/process.
- Drawing out mechanisms/processes are a good way for you to see whether students are grasping these key concepts and content areas.

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6 Suggested Activities for Engaging Students in the Large Group Classroom (continued)

#4 Polling

When to use: Polling is a great way to engage students and/or have them demonstrate they can apply the content.

How:

- Develop a few questions 3-10 around the pre-work content. These can be knowledge-based multiple-choice, or short answer that tests their knowledge of the pre-work and demonstrates if students are ready to move into the more difficult concepts.
- After a presentation of content, pause and ask students to answer questions on a patient case that is related to the content. It can be very simple or more complex. Use the polling questions of short answer when you want to see students can apply the content.
- Use multiple choice polling questions for recognition and recall of concepts and facts or even terminology.
- You can use word clouds – asking students to describe in one or a few words what they think on any topic in order to see what the majority of the class is thinking. This is a great way to kick off a new topic or discussion.
- You will need to know what your questions are and which type of question you want to ask. These need to be planned ahead of time with the course coordinator.

#5 Play a Review Game

When to use: Games can be fun for a review and recall of knowledge. Spaced repetition is known as one of the best techniques for memory recall particularly for terminology and facts. The addition of an occasional game is a good way to practice and is fun too.

How:

- Use one of the online games such as Jeopardy or Wheel of Fortune to create questions that teams can answer and compete to win.
- Base the topics on the week's content or do it as part of a larger review before an exam.
- After you identify the questions, use an online tool to create the game. You can identify the number of points each category or question is worth.
- Kahoot is one type of software that you can enter questions into for playing a game.
- There are many versions of the Jeopardy game that can be found online for free.
- Once you have your game set up, practice using it with the class audio visual system to ensure it runs smoothly.
- Have fun!

#6 Think-Pair-Share

When to use: This activity is a good staple to use at any time during the session when you want to pause and have students discuss the topic of the moment. It allows the students to think about a question, then pair up with someone next to them and share their answers. The key to using this type of activity is to hold the students accountable and set the expectation that you will call on pairs to share their answers.

How:

- Determine where in the session you will want to pause and ask a question to the class. Typically, these should be after presenting a specific section of content for 10-15 minutes.
- Develop questions that are more complex and require some discussion.
- In class, set the expectation that you will want answers from many pairs.
- Ask the class to work in pairs for a few minutes and present the question.
- Then, ask one of the pairs to share with the class their response and give a reason why. You can ask a different pair of students if they got a different answer and why? You can then ask a more difficult question or a follow-up question based on the content.
- Be sure to ask many different students to share their answers.